Frameworx 12.5
Product Conformance Certification Report

CSG International
CSG Singleview Accelerate 8

October 2013

Version 1.0

Table of Contents

List of Tables

List of Figures

1 Introduction

1.1 Executive Summary

This document provides details of CSG's self-assessment and TM Forum's Conformance Assessment of the **CSG Singleview Accelerate 8** product, against the following Frameworx 12.5 components:

- Business Process Framework Version 12.5
- Information Framework Version 12.5

The assessment included a review of:

- The methodology approach to process modeling against the TM Forum's Business Process Framework Release 12.5 according to the specific processes submitted in scope for the Assessment.
- Conformance to the Information Framework Release 12.5 Domains/Aggregate Business Entities according to the specific ABEs submitted in scope for the Assessment.

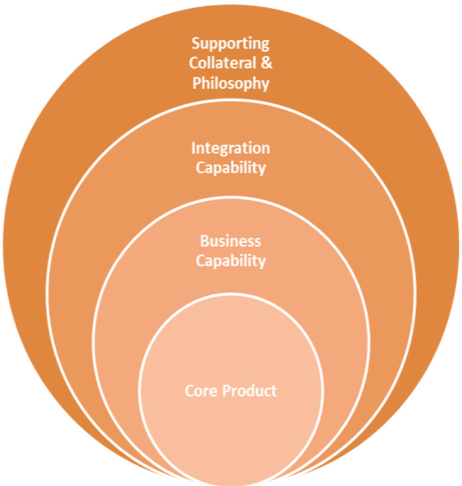
2 Product Functionality/Capability Overview

2.1 CSG Singleview Accelerate 8 – Product Overview

CSG's commitment to providing open architected solutions that adhere to accepted standards is well-documented. CSG Singleview offers the compatibility, connectivity and integration to help our clients achieve a coherent and effective OSS/BSS strategy, allowing them to maximize the value of all components of the OSS/BSS infrastructure. With Singleview Accelerate 8, we have taken that commitment a step further through conformance certification by the TM Forum against both the Business Process Framework (eTOM) and the Information Framework (SID).

Singleview Accelerate 8 is CSG's latest solution offering in the Integrated Revenue and Customer Management space and consists of:

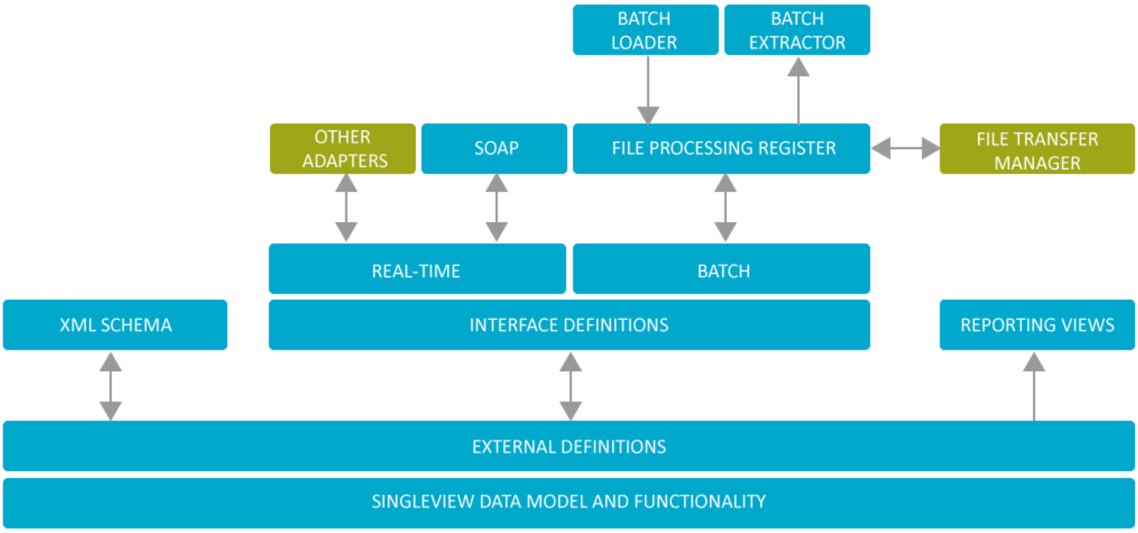
- A globally renowned and proven core product that ticks all the boxes in terms of architectural excellence.
- A set of rich, pre-defined business capabilities across an extensive footprint of functional domains.
- An integration infrastructure that allows these capabilities to be exploited to the full.
- Comprehensive supporting collateral that is fully aligned with TMF Frameworx standards.



The comprehensive, TM Forum (TMF) Frameworx-aligned capabilities of Singleview are fully supported by a delivery philosophy that seeks to maximize the benefits of TMF Frameworx through the pragmatic application of key concepts to *Deliver Business Outcomes That Matter.*

Integration and SID Support

Integration Infrastructure is a key element of the Singleview architecture as depicted below.



Singleview Accelerate 8 includes a set of SID-aligned services exposed through both real-time and batch APIs that reduce integration effort and risk.

eTOM Support

The combined expertise and experience gained from a wide variety of deployments has been harvested and made available in the form of rich, pre-defined business capabilities across an extensive footprint of functional domains. These capabilities deliver support for business processes across the entire Customer Journey:

TMF Frameworx at the heart of CSG's delivery philosophy

Singleview Accelerate 8 is accompanied by a comprehensive set of supporting collateral. This includes:

- A description of feature/function per TAM domain.
- A description of how the feature/functions support eTOM processes.
- SID aligned APIs.
- Customer Journey based End to End Process Flows and corresponding Test Scenarios and Test Cases.

This collateral is a key enabler to our philosophy of placing TMF Frameworx at the very heart of our delivery approach. This is not blind standards for standards sake but the pragmatic application of the key concepts across the entire lifecycle, from initial business motivation modeling through:

- Business case and investment planning
- Analysis and definition
- Design, build and test
- Deploy and operate.

CSG recognizes that any solution offering is ultimately a means to an end and that it is the Business Outcome that matters. We seek to demystify technology and enable business stakeholders to understand how what we offer can help them to achieve their goals and overcome their challenges.

3 Business Process Framework Assessment Overview

3.1 Mapping Technique Employed

Business Process Framework Level 3 descriptions are analyzed by looking for implied tasks. (This is similar to how process decomposition can use Semantic Analysis). Each Business Process Framework process is supported by descriptive text. In many cases, each process is aligned and mapped to appropriate company documentation references solution, methodology or modeling material.

The Business Process Framework Level 3 descriptions are analyzed by looking for implied tasks. Color coded text as highlighted below is used as part of the process mapping whereby highlighted text indicates the level of support for a Level 3 process implied task:

- GREEN is used to highlight key words or key statements that are fully supported
- YELLOW is used to highlight key words/key statements that are partially supported
- GREY is used to highlight key words/key statements that are not supported
- No highlighting is used for words/statements that are irrelevant, just for reference or needed to complete the sentence.

Manual and Automated Support
It is important to determine whether the implied task is supported by manual steps, automated steps, or a combination of both. In this document, “A”, “M”, or “AM” is used for each task to indicate that the step or steps is/are automated (A), manual (M), or both (AM).

TM Forum Note 1*: When process mappings are presented against Level 4 processes, the mappings are provided against the text in the “Mandatory” field for the process. In the event of the Mandatory field not being used, the process mappings are in that case provided against the Level 4 Brief/Extended descriptions.*

TM Forum Note 2*: Note that if a Level 3 process has not been decomposed to Level 4 processes in the Business Process Framework, in such cases the process mapping support is provided against the Level 4 process descriptions (Brief & Extended).*

3.2 Business Process Framework Level 2 Process Scope

The following figures represent the Business Process Framework Level 2 processes (high-lighted in blue) that were presented in scope for the assessment and that were assessed and support the corresponding Business Process Framework processes according to the results in Chapter 6 Frameworx Conformance.

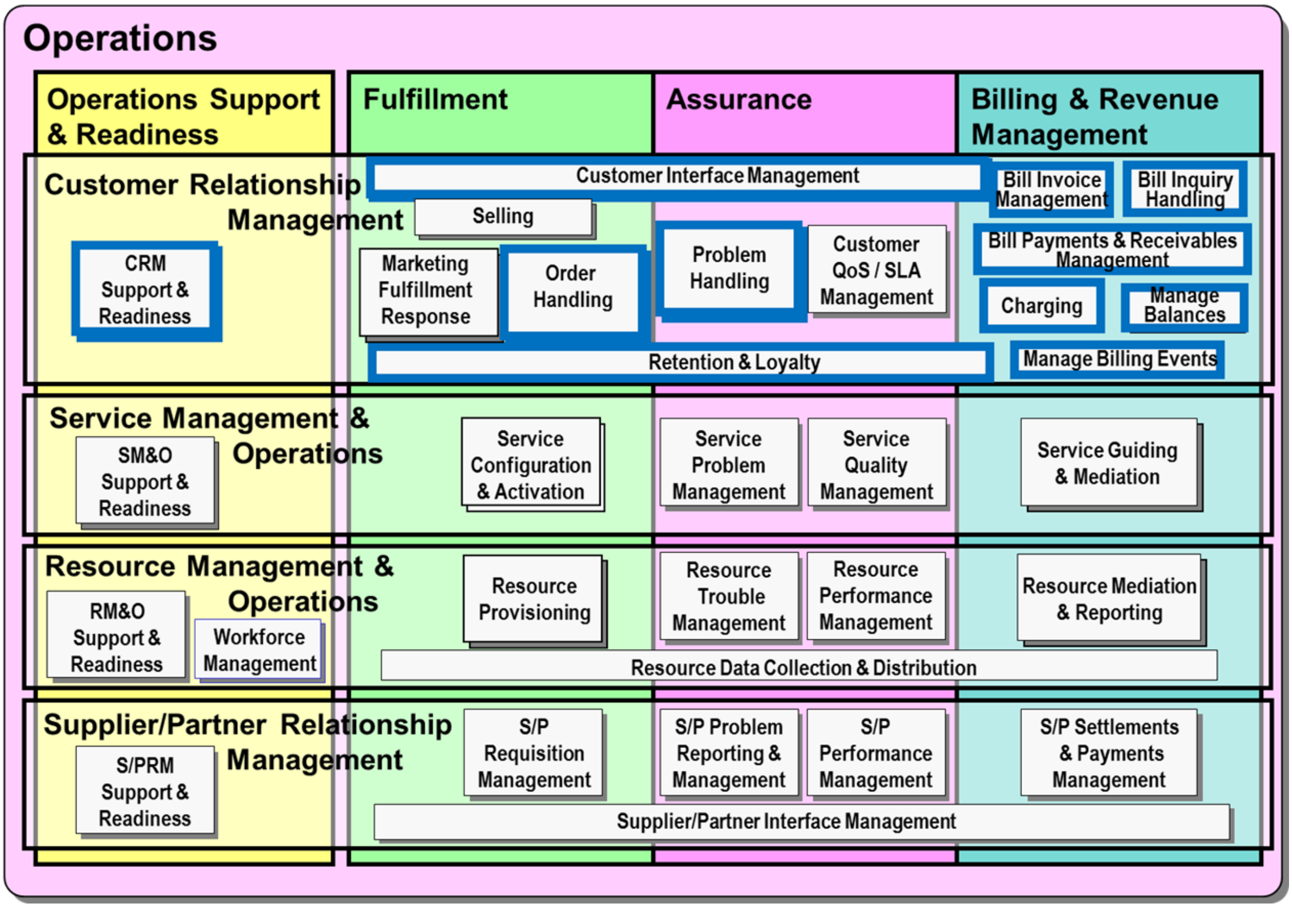


Figure 3.1 Operations Level 2 process coverage for CSG's Singleview Accelerate 8 Assessment

The following diagram identifies the number of Level 3 processes that were submitted for assessment, for each Level 2 process that was submitted in scope for the Assessment.

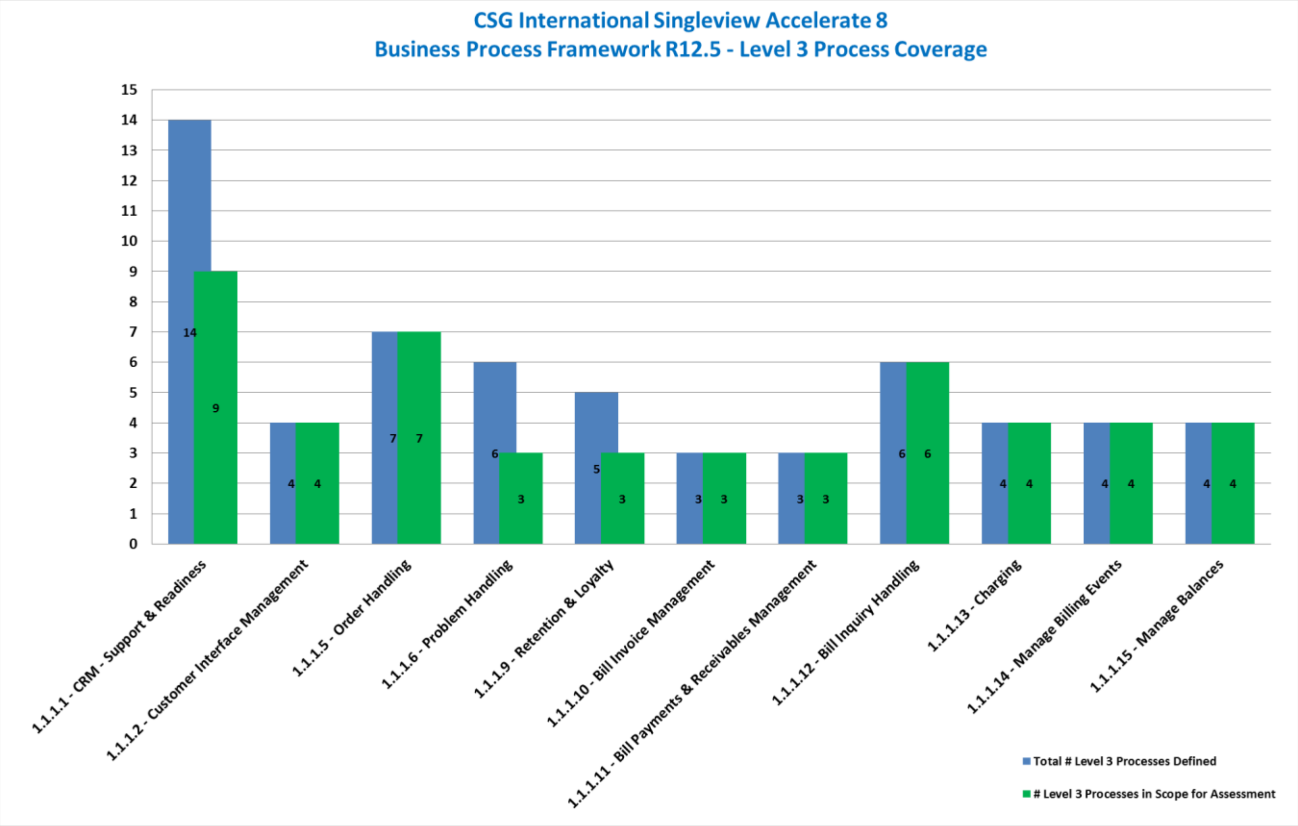


Figure 3.2 Level 3 process coverage for CSG's Singleview Accelerate 8 Assessment

3.3 Product Scope

The diagram in Figure 3.3 represents the CSG's Singleview Accelerate product mapping to the Business Process Framework Level 2 processes that ere submitted in scope for the Conformance Certification assessment.

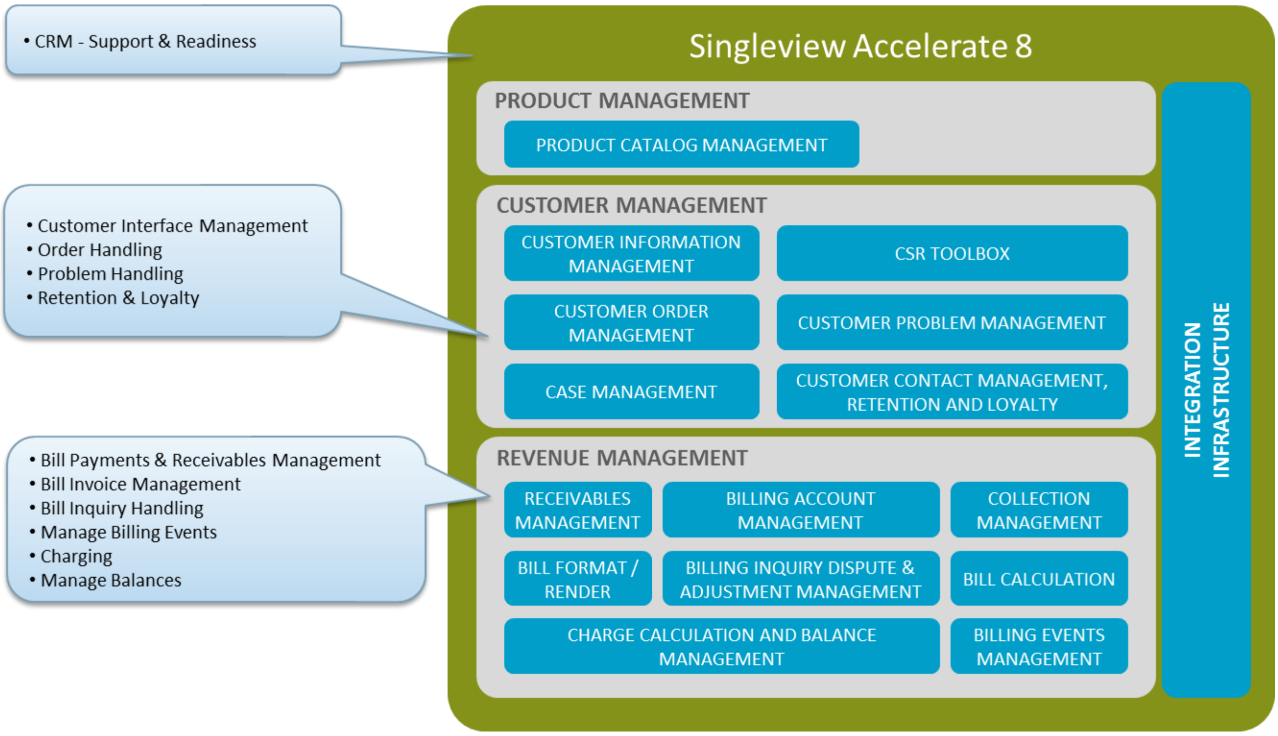


Figure 3.3 Singleview Accelerate 8 product mapping to eTOM L2 Processes in scope

4 Business Process Framework – Process Mapping Descriptions

This section provides the Process Mapping output from CSG's Self-Assessment which was reviewed by TM Forum Subject Matter Experts alongside supporting documentation for CSG's Singleview Accelerate 8.

4.1 Level 2: CRM Support & Readiness (1.1.1.1)

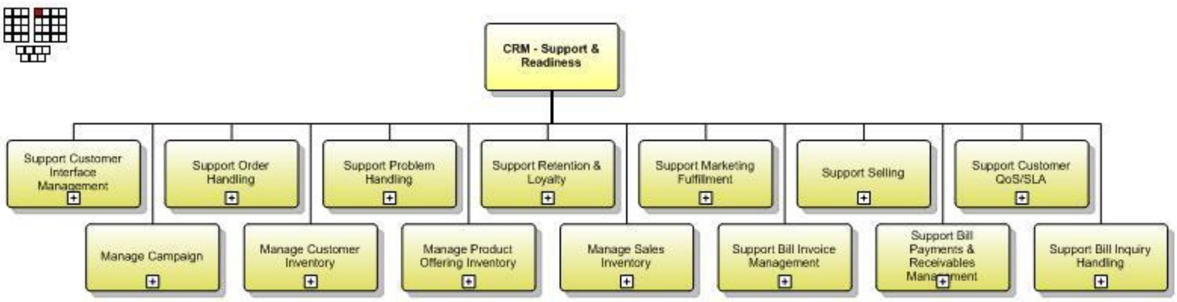


Figure 4.1 CRM – Support & Readiness decomposition into level 3 processes

Process Identifier: 1.1.1.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

CRM Support & Readiness processes ensure the support capability is in place to allow the CRM Fulfillment, Assurance and Billing processes to operate effectively.

Extended Description

CRM Support & Readiness processes ensure the support capability is in place to allow the CRM Fulfillment, Assurance and Billing processes to operate effectively.

The responsibilities of these processes include, but are not limited to:

• Provision of sales, product and customer process infrastructure;,

• policy support and decision support knowledge for customers and customer interactions (including billing activities), sales activity and sales interactions, and product offerings;

• management & analysis of sales campaigns (including direct and outbound calling);

• management and analysis of sales activity and sales opportunities (including funnel and prospect analysis and support);

• maintaining and managing stocks of marketing collateral to be distributed using the Marketing Fulfillment processes;

• maintaining inventories to support the sales, product and customer data required by the FAB and CRM OS&R processes

• monitoring and reporting on the capabilities and costs of the individual CRM FAB processes; and

• longer-term trend analysis on product, ,sales and customer FAB processes in order to establish the extent to which enterprise targets for these processes are being achieved and/or the need for the processes to be modified.

These processes support the operational introduction of new processes and infrastructure to support new and/or enhanced product offerings, new and/or enhanced sales capability and new and/or enhanced customer management capabilities and are responsible for conducting operations readiness testing and acceptance. They develop the procedures for the specific Fulfillment, Assurance and Billing processes and keep them up to date. After successful testing, these processes accept the new or enhanced process capabilities and manage a full-scale introduction for general availability.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.1 Level 3: Support Customer Interface Management (1.1.1.1.1) – Mapping Details

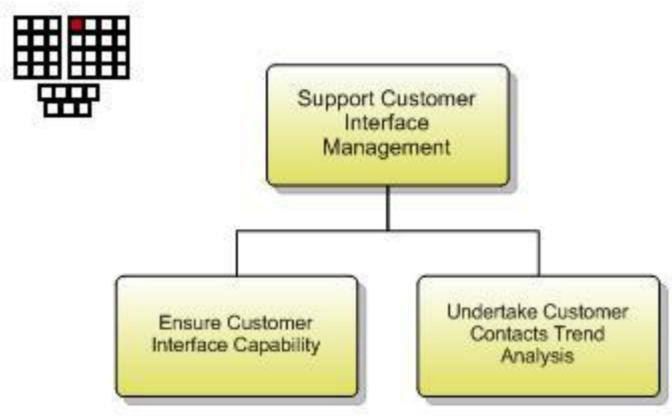


Figure 4.2 Support Customer Interface Management decomposition into level 4 processes

Process Identifier: 1.1.1.1.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that all information, materials, systems and resources are available so that the Customer Interface Management processes can operate effectively, when a contact with a customer occurs.

Extended Description

The purpose of the Support Customer Interface Management processes is to ensure that there is capability (for example, information, materials, systems and resource) so that the Customer Interface Management processes can operate effectively when a contact with a customer occurs. Examples are information on how to handle unusual requests based on temporary situations, systems needed to accept and track customer contacts, requests for the provisioning of additional resources where it has been identified that current levels will impact on timely contact handling.

These processes are responsible for implementing generic and specific changes to customer interfaces. This support could be in updating agent scripts, IVR announcements, Web pages, etc. Customer Interface Support processes keep up to date all information concerning customers.

These processes undertake trend analysis on customer contacts, e.g. type, frequency, duration, outcome.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.1.1 Level 4: Ensure Customer Interface Capability (1.1.1.1.1.1) – Mapping Details

Process Identifier: 1.1.1.1.1.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.1.1 – Ensure Customer Interface Capability**
Brief Description *Note: Text highlighted in turquoise are for example purposes only and not applicable.* Ensure that there is capability (for example, information, materials, systems and resource) so that the Customer Interface Management processes can operate effectively when a contact with a customer occurs. **AM** *Note: Singleview provides a web based Customer Management UI for use by CSRs and the same functionality is exposed via APIs to other channels.* Examples are information on how to handle unusual requests based on temporary situations, systems needed to accept and track customer contacts, requests for the provisioning of additional resources where it has been identified that current levels will impact on timely contact handling. *Note: Singleview has full Case Management capabilities used to record and track all contacts with customers.* These processes are responsible for implementing generic and specific changes to customer interfaces. This support could be in updating agent scripts, IVR announcements, Web pages, etc. Customer Interface Support processes keep up to date all information concerning customers**.** **AM** *Note: Singleview comes with a full set of configuration tools that can be used to maintain scripting, web page content and what information is captured for customers.* **[BOD] eTOM 1.1.1.1 CRM Support and Readiness -> eTOM 1.1.1.1.1 – Support Customer Interface Management** Singleview plays a significant role in activities for managing all communications between an organisation and potential or existing customers. **[BOD] eTOM 1.1.1.2 Customer Interface Management (entire section)** **[BOO] 3.3.1 Customer Information Management (entire section)**

[BOO] 3.3.5 Customer Service Representative Toolbox (entire section)

[CMC] Preface -> Product Overview (entire section)

[CWB] Class & Data Tool (entire section)

[CWB] Fact Tool (entire section)

[CWB] Scripting Tool (entire section)

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Not used for this process element.

Optional

Not used for this process element

Interactions

Not used for this process element

4.1.1.2 Level 4: Undertake Customer Contacts Trend Analysis (1.1.1.1.1.2) – Mapping Details

Process Identifier: 1.1.1.1.1.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.1.2 – Undertake Customer Contacts Trend Analysis**
Brief Description Undertake trend analysis on customer contacts, e.g. type, frequency, duration, outcome. **AM** *Note: All customer interaction is recorded in cases for which there is a set of standard reports. The same information can also be extracted to BI for further analysis.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)**
Extended Description Not used for this process element
Explanatory Reserved for future use.
Mandatory Reserved for future use.
Optional Reserved for future use.
Interactions Reserved for future use.

4.1.1.3 Level 3: Support Customer Interface Management (1.1.1.1.1) – TM Forum Assessor Scores

1.1.1.1.1- Support Customer Interface Management	
Grouping of Implied Tasks	**Score**
Ensure Customer Interface Capability (1.1.1.1.1.1)	*100%*
Undertake Customer Contacts Trend Analysis (1.1.1.1.1.2)	*100%*
Total score for Parent Level 3 Process	**5**

4.1.2 Level 3: Support Order Handling (1.1.1.1.2) – Mapping Details

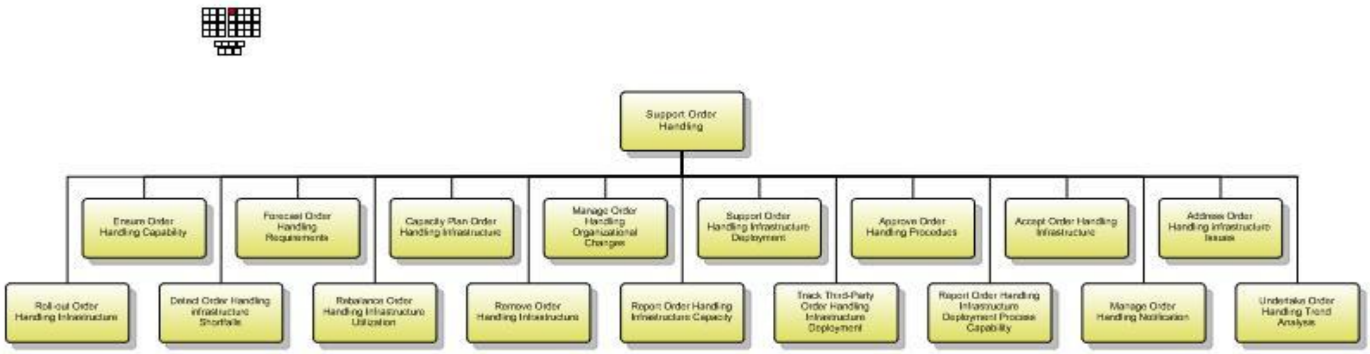


Figure 4.3 Support Order Handling decomposition into level 4 processes

Process Identifier: 1.1.1.1.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that new and/or modified Order Handling related infrastructure is deployed effectively, and to ensure that Order Handling processes can operate effectively.

Extended Description

The purpose of the Support Order Handling processes is twofold – to ensure that new and/or modified Order Handling related infrastructure is deployed effectively, and to ensure that Order Handling processes can operate effectively.

For the Order Handling processes the role of the Support Order Handling processes is to make sure that there is sufficient process capacity and capability (for example information, materials, systems and resources) so that the Order Handling processes can operate effectively.Examples are information on how to process orders for specific product offerings, information needed to carry out designs, materials needed to confirm customer order requests, systems needed to validate product offering availability.

The responsibilities of these processes include, but are not limited to:

· forecasting at an operational level customer order handling volume requirements;

· the capacity planning associated with the deployment of new and/or modified customer order handling infrastructure;

· establishment and monitoring of organizational arrangements to support deployment and operation of new and/or modified customer order handling infrastructure;

· creation, deployment, modification and/or upgrading of customer order handling infrastructure deployment support tools (including Customer Inventory and Product Offer Inventory) and processes for new and/or modified customer order handling infrastructure;

· authoring, reviewing and approving operational procedures developed by Marketing & Offer Management processes prior to customer order handling infrastructure deployment;

· the testing and acceptance of new and/or modified customer order handling infrastructure as part of the handover procedure from the Marketing & Offer Management processes to Operations;

· detecting customer order handling infrastructure operational limitations and/or deployment incompatibilities and providing requirements to address these aspects to Marketing & Offer Management processes;

· co-ordination and roll-out, in accordance with approved plans, of the approved new and/or modified customer order handling infrastructure;

· monitoring capacity utilization of deployed customer order handling infrastructure to provide early detection of potential customer order handling infrastructure shortfalls;

· reconfiguration and re-arrangement of under-utilized deployed customer order handling infrastructure;

· managing recovery and/or removal of obsolete or unviable customer order handling infrastructure;

· reporting on deployed customer order handling infrastructure capacity;

· Tracking and monitoring of the customer order handling infrastructure deployment processes and costs (including where customer order handling infrastructure is deployed and managed by third parties),

· reporting on the capability of the customer order handling infrastructure deployment processes; and

· establishing and managing customer order handling notification facilities and lists to support the Order Handling notification and reporting processes

The processes undertake trend analysis on order handling, such as time taken to complete a customer order, frequency and type of Order Handling process issues involved, and cancelled orders.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.2.1 Level 4: Ensure Order Handling Capability (1.1.1.1.2.1) – Mapping Details

Process Identifier: 1.1.1.1.2.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.1 – Ensure Order Handling Capability**
Brief Description Ensure that there is capability (for example, information, materials, systems and resource) so that the Customer Interface Management processes can operate effectively when a contact with a customer occurs. Examples are information on how to handle unusual requests based on temporary situations, systems needed to accept and track customer contacts, requests for the provisioning of additional resources where it has been identified that current levels will impact on timely contact handling. These processes are responsible for implementing generic and specific changes to customer interfaces. This support could be in updating agent scripts, IVR announcements, Web pages, etc. Customer Interface Support processes keep up to date all information concerning customers. **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.2 Level 4: Forecast Order Handling Requirements (1.1.1.1.2.3) – Mapping Details

Process Identifier: 1.1.1.1.2.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.2.3 - Forecast Order Handling Requirements
Brief Description Forecasting at an operational level customer order handling volume requirements; **AM** *Note: Singleview facilitates forecasting by acting as the repository of current and past customer orders and associated sales order cases from which the information can be transferred into BI where it can exploited for forecasting.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.3 Level 4: Capacity Plan Order Handling Infrastructure (1.1.1.1.2.4) – Mapping Details

Process Identifier: 1.1.1.1.2.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.2.4 - Capacity Plan Order Handling Infrastructure
Brief Description Capacity planning associated with the deployment of new and/or modified customer order handling infrastructure; *Note: It is assumed that this process is focused on infrastructure planning and therefore not applicable to Singleview.* **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.4 Level 4: Manage Order Handling Organizational Changes (1.1.1.1.2.5) – Mapping Details

Process Identifier: 1.1.1.1.2.5

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.2.5 - Manage Order Handling Organizational Changes
Brief Description Establishment and monitoring of organizational arrangements to support deployment and operation of new and/or modified customer order handling infrastructure; **AM** *Note: Singleview case management allows the definition of workgroups to whom activities are assigned as part of order handling workflow.* **[BOO] 3.3.13 Case Management (entire section)** **[PD] 6.2 Workflow (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.5 Level 4: Support Order Handling Infrastructure Deployment (1.1.1.1.2.6) – Mapping Details

Process Identifier: 1.1.1.1.2.6

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.6 - Support Order Handling Infrastructure Deployment**
Brief Description Creation, deployment, modification and/or upgrading of customer order handling infrastructure deployment support tools (including Customer Inventory and Product Offer Inventory) and processes for new and/or modified customer order handling infrastructure; **AM** *Note: Singleview is the master repository of both Product Catalogue (Product Offer Inventory) and Product Instances (Customer Inventory).* *Processes for customer order handling are defined as workflows associated with cases of type sales order.* **[AO] Convergent Billing Data Model → Product Data Model (entire section)** **[CBO] Product Definitions and Product Instances** Each time the user assigns a product definition to a customer, they create a unique product instance; no two product instances are the same. A product instance can therefore be considered as a specific and unique combination of services, equipment, and tariffs offered to a customer based on the framework provided by the corresponding product definition. Creating a product instance offers a number of benefits: •By creating a unique product instance each time one is required, the original product definition is preserved. •The product instance can be tailored (within the constraints imposed by the product definition) to meet a customer's requirements. •Modifications made to the product definition are included in each new product instance. •Product definition components referenced by product instances are updated in the product instance when modifications to those components are made in the product definition.

[PD] 6.2 Workflow (entire section)

[CWB] Workflow Tool (entire section)

Extended Description

Not used for this process element

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.2.6 Level 4: Approve Order Handling Procedures (1.1.1.1.2.7) – Mapping Details

Process Identifier: 1.1.1.1.2.7

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.7 - Approve Order Handling Procedures**
Brief Description Authoring, reviewing and approving operational procedures developed by Marketing & Offer Management processes prior to customer order handling infrastructure deployment; *Note: This is assumed to be primarily a Business Analysis function and therefore outside the scope of Singleview.* **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.7 Level 4: Accept Order Handling Infrastructure (1.1.1.1.2.8) – Mapping Details

Process Identifier: 1.1.1.1.2.8

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.8 - Accept Order Handling Infrastructure**
Brief Description Testing and acceptance of new and/or modified customer order handling infrastructure as part of the handover procedure from the Marketing & Offer Management processes to Operations; *Note: This is assumed to be a Validation Team function and outside of the scope of Singleview other than that Singleview supports both production and non-production environments.* **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.8 Level 4: Address Order Handling infrastructure Issues (1.1.1.1.2.9) – Mapping Details

Process Identifier: 1.1.1.1.2.9

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.9 - Address Order Handling infrastructure Issues**
Brief Description Detecting customer order handling infrastructure operational limitations and/or deployment incompatibilities and providing requirements to address these aspects to Marketing & Offer Management processes; **AM** *Note: Singleview facilitates continual service improvement by providing insight into the operational effectiveness of Order Handling. Actions within workflows that are frequent source of failure or SLA breach (escalation) can be identified and analysed to determine requirements for improvements.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.7.2 Fallout Management (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.9 Level 4: Roll-out Order Handling Infrastructure (1.1.1.1.2.10) – Mapping Details

Process Identifier: 1.1.1.1.2.10

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.10 - Roll-out Order Handling Infrastructure**
Brief Description Co-ordination and roll-out, in accordance with approved plans, of the approved new and/or modified customer order handling infrastructure; *Note: This is assumed to be a Project Management/Engineering function and outside of the scope of Singleview.* **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.10 Level 4: Detect Order Handling infrastructure Shortfalls (1.1.1.1.2.11) – Mapping Details

Process Identifier: 1.1.1.1.2.11

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.2.11 - Detect Order Handling infrastructure Shortfalls
Brief Description Monitoring capacity utilization of deployed customer order handling infrastructure to provide early detection of potential customer order handling infrastructure shortfalls; **AM** *Note: Singleview supports capacity monitoring by acting as the repository of current and past customer orders and associated sales order cases from which the load information can be derived, this can be supplemented with fallout information and transferred into BI where it can analysed to attempt and identify potential shortfalls.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.7.2 Fallout Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.11 Level 4: Rebalance Order Handling Infrastructure Utilization (1.1.1.1.2.12) – Mapping Details

Process Identifier: 1.1.1.1.2.12

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.12 - Rebalance Order Handling Infrastructure Utilization**
Brief Description Reconfiguration and re-arrangement of under-utilized deployed customer order handling infrastructure; *Note: This is assumed to be Project Management, Engineering and Resource Management activities and outside the scope of Singleview.*
Extended Description Not used for this process element
Explanatory Reserved for future use.
Mandatory Reserved for future use.
Optional Reserved for future use.
Interactions Reserved for future use.

4.1.2.12 Level 4: Remove Order Handling Infrastructure (1.1.1.1.2.13) – Mapping Details

Process Identifier: 1.1.1.1.2.13

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.13 - Remove Order Handling Infrastructure**
Brief Description Managing recovery and/or removal of obsolete or unviable customer order handling infrastructure; *Note: This is assumed to be Project Management, Engineering and Resource Management activities and outside the scope of Singleview.* **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.13 Level 4: Report Order Handling Infrastructure Capacity (1.1.1.1.2.14) – Mapping Details

Process Identifier: 1.1.1.1.2.14

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.14 - Report Order Handling Infrastructure Capacity**
Brief Description Reporting on deployed customer order handling infrastructure capacity; **AM** *Note: Singleview supports reporting by acting as the repository of current and past customer orders and associated sales order cases from which the load information can be derived, this can be supplemented with fallout information and transferred into BI.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.14 Level 4: Track Third-Party Order Handling Infrastructure Deployment (1.1.1.1.2.15) – Mapping Details

Process Identifier: 1.1.1.1.2.15

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.15 - Track Third-Party Order Handling Infrastructure Deployment**
Brief Description Tracking and monitoring of the customer order handling infrastructure deployment processes and costs (including where customer order handling infrastructure is deployed and managed by third parties) **AM** *Note: Singleview supports management of 3rd parties involved in Order Handling by acting as the repository of current and past customer orders and associated sales order cases from which the number of actions assigned to 3rd parties and the speed and success with which they were completed can be determined, typically offline in BI.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.7.2 Fallout Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.15 Level 4: Report Order Handling Infrastructure Deployment Process Capability (1.1.1.1.2.16) – Mapping Details

Process Identifier: 1.1.1.1.2.16

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.16 - Report Order Handling Infrastructure Deployment Process Capability**
Brief Description Reporting on the capability of the customer order handling infrastructure deployment processes; Note: It is assumed that this is a Project Management activity and outside the scope of Singleview. **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.16 Level 4: Manage Order Handling Notification (1.1.1.1.2.17) – Mapping Details

Process Identifier: 1.1.1.1.2.17

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.17 - Manage Order Handling Notification**
Brief Description Establishing and managing customer order handling notification facilities and lists to support the Order Handling notification and reporting processes **AM** *Note: The configuration of workflows associated with sales order case types includes the definition of what notifications are sent to which parties and when in the workflow.* **[PD] 6.2 Workflow (entire section)** **[CWB] Notification Tool (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.17 Level 4: Undertake Order Handling Trend Analysis (1.1.1.1.2.18) – Mapping Details

Process Identifier: 1.1.1.1.2.18

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.2.18 - Undertake Order Handling Trend Analysis**
Brief Description Undertake trend analysis on order handling, such as time taken to complete a customer order, frequency and type of Order Handling process issues involved, and cancelled orders. **AM** *Note: Singleview supports trend analysis of Order Handling by acting as the repository of current and past customer orders and associated sales order cases from which the key metrics can be obtained and analysed, typically offline in BI.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.7.2 Fallout Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.2.18 Level 3: Support Order Handling (1.1.1.1.2) – TM Forum Assessor Scores

1.1.1.1.2 - Support Order Handling	
Grouping of Implied Tasks	**Score**
Ensure Order Handling Capability (1.1.1.1.2.1)	*N/A*
Forecast Order Handling Requirements (1.1.1.1.2.3)	*100%*
Capacity Plan Order Handling Infrastructure (1.1.1.1.2.4)	*0%*
Manage Order Handling Organizational Changes (1.1.1.1.2.5)	*100%*
Support Order Handling Infrastructure Deployment (1.1.1.1.2.6)	*100%*
Approve Order Handling Procedures (1.1.1.1.2.7)	*0%*
Accept Order Handling Infrastructure (1.1.1.1.2.8)	*0%*
Address Order Handling infrastructure Issues (1.1.1.1.2.9)	*100%*
Roll-out Order Handling Infrastructure (1.1.1.1.2.10)	*0%*
Detect Order Handling infrastructure Shortfalls (1.1.1.1.2.11)	*100%*
Rebalance Order Handling Infrastructure Utilization (1.1.1.1.2.12)	*0%*
Remove Order Handling Infrastructure (1.1.1.1.2.13)	*0%*
Report Order Handling Infrastructure Capacity (1.1.1.1.2.14)	*100%*
Track Third-Party Order Handling Infrastructure Deployment (1.1.1.1.2.15)	*50%*
Report Order Handling Infrastructure Deployment Process Capability (1.1.1.1.2.16)	*0%*
Manage Order Handling Notification (1.1.1.1.2.17)	*100%*
Total score for Parent Level 3 Process	**4**

4.1.3 Level 3: Support Problem Handling (1.1.1.1.3) – Mapping details

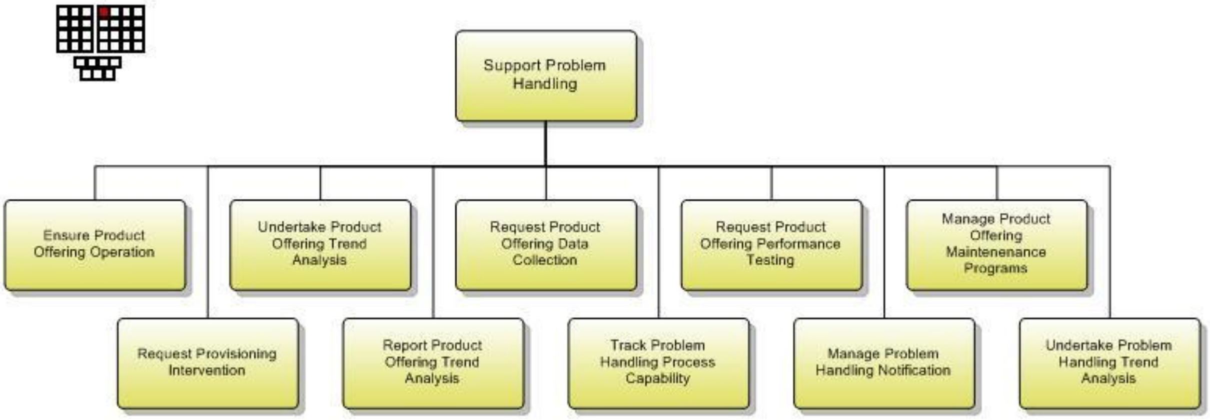


Figure 4.4 Support Problem Handling decomposition into level 4 processes

Process Identifier: 1.1.1.1.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Assist Problem Handling processes by proactively undertaking statistically driven preventative and scheduled purchased product offering maintenance activities and monitoring, managing and reporting on the capability of the Problem Handling processes.

Extended Description

The responsibilities of the Support Problem Handling processes are twofold - assist Problem Handling processes by proactively undertaking statistically driven preventative and scheduled purchased product offering maintenance activities and monitoring, managing and reporting on the capability of the Problem Handling processes.

These processes are responsible for ensuring that the purchased product offerings are working effectively and efficiently.

Responsibilities of these processes include, but are not limited to:

· Extracting and analyzing, including undertaking trend analysis, historical and current customer problem reports and performance reports to identify potential customer purchased product offerings requiring proactive maintenance and/or replacement;

· Requesting scheduling of additional customer purchased product offering data collection to assist in the analysis activity;

· Requesting scheduling of customer purchased product offering performance testing to assist in analysis activity;

· Developing and managing customer purchased product offering proactive maintenance programs;

· Requesting customer provisioning activity to prevent anticipated customer problems associated with purchased product offerings identified in the analysis activities;

· Reporting outcomes of trend analysis to Market & Offer Management processes to influence new and/or modified customer product offering development;

· Tracking and monitoring of the Problem Handling processes and associated costs (including where customer infrastructure is deployed and managed by third parties), and reporting on the capability of the Problem Handling processes; and

· Establishing and managing customer problem notification facilities and lists to support the Problem Handling notification and reporting processes

These processes undertake trend analysis on problem handling.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.3.1 Level 4: Ensure Product Offering Operation (1.1.1.1.3.1) – Mapping Details

Process Identifier: 1.1.1.1.3.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.3.1 – Ensure Product Offering Operation**
Brief Description Ensure that the purchased product offerings are working effectively and efficiently. **AM** *Note: Whilst Singleview does not perform explicit service assurance activities the categorization of and information collected with Cases does provide information that can analysed to provide insight into call drivers.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Extended Description** Not used for this process element. **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.2 Level 4: Undertake Product Offering Trend Analysis (1.1.1.1.3.2) – Mapping Details

Process Identifier: 1.1.1.1.3.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.3.2 - Undertake Product Offering Trend Analysis**
Brief Description Extracting and analyzing, including undertaking trend analysis, historical and current customer problem reports and performance reports to identify potential customer purchased product offerings requiring proactive maintenance and/or replacement; **AM** *Note: Singleview Cases is one of the repositories of information relating to problem reports which can be extracted and combined with other potential sources such as trouble ticketing and network probes for analysis typically on a BI platform.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.3 Level 4: Request Product Offering Data Collection (1.1.1.1.3.3) – Mapping Details

Process Identifier: 1.1.1.1.3.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.3.3 – Request Product Offering Data Collection**
Brief Description Requesting scheduling of additional customer purchased product offering data collection to assist in the analysis activity; *Note: This is assumed to relate to scheduling of engineering activities relating to data collection from the network and therefore considered out of scope for Singleview.* **Extended Description** Not used for this process element. **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.4 Level 4: Request Product Offering Performance Testing (1.1.1.1.3.4) – Mapping Details

Process Identifier: 1.1.1.1.3.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.3.4 - Request Product Offering Performance Testing
Brief Description Requesting scheduling of customer purchased product offering performance testing to assist in analysis activity; *Note: This is assumed to relate to scheduling of engineering activities relating to performance testing of the network and therefore considered out of scope for Singleview.* **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.5 Level 4: Manage Product Offering Maintenance Programs (1.1.1.1.3.5) – Mapping Details

Process Identifier: 1.1.1.1.3.5

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.3.5 – Manage Product Offering Maintenance Programs**
Brief Description Developing and managing customer purchased product offering proactive maintenance prog; *Note: This is assumed to relate to network management activities and assumed out of scope for Singleview.* **Extended Description** Not used for this process element. **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.6 Level 4: Request Provisioning Intervention (1.1.1.1.3.6) – Mapping Details

Process Identifier: 1.1.1.1.3.6

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.3.6 - Request Provisioning Intervention**
Brief Description Requesting customer provisioning activity to prevent anticipated customer problems associated with purchased product offerings identified in the analysis activities; **AM** *Note: It is important to avoid introducing inconsistencies between the master repository of purchased product offerings and the network and therefore unless the changes are low level network changes they should be initiated in Singleview. Singleview provides two ways to request provisioning activities - If the number of customers and purchased product offerings are small then the provisioning requests can be entered via the CSR UI; if the volumes are high then the corresponding APIs can be invoked from a bulk script* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.7.2 Fallout Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.7 Level 4: Report Product Offering Trend Analysis (1.1.1.1.3.7) – Mapping Details

Process Identifier: 1.1.1.1.3.7

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.3.7 – Report Product Offering Trend Analysis**
Brief Description Reporting outcomes of trend analysis to Market & Offer Management processes to influence new and/or modified customer product offering development; *Note: Whilst Singleview is an important source of information into Business Intelligence this process is assumed to relate to activities further downstream and therefore out of scope for Singleview.* **Extended Description** Not used for this process element. **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.8 Level 4: Track Problem Handling Process Capability (1.1.1.1.3.8) – Mapping Details

Process Identifier: 1.1.1.1.3.8

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.3.8 - Track Problem Handling Process Capability**
Brief Description Tracking and monitoring of the Problem Handling processes and associated costs (including where customer infrastructure is deployed and managed by third parties), and reporting on the capability of the Problem Handling processes; *Note: This is assumed to relate to Continuous Improvement within Service Management organization and therefore out of scope for Singleview.* **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.9 Level 4: Manage Problem Handling Notification (1.1.1.1.3.9) – Mapping Details

Process Identifier: 1.1.1.1.3.9

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.3.9 – Manage Problem Handling Notification**
Brief Description Establishing and managing customer problem notification facilities and lists to support the Problem Handling notification and reporting processes **AM** *Note: Singleview is the primary system for interactions with customers and holds the organisational hierarchy and contact information. It can be integrated with southbound trouble ticketing systems to receive notice of problems and to notify customers by means of creating cases with actions for outbound calls and/or notification by SMS/e-mail.* **[BOO] 3.3.1 Customer Information Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **[CWB] Notification Tool (entire section)** **[CMC] Part 14 eMail Integration (entire section)** **Extended Description** Not used for this process element. **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.10 Level 4: Undertake Problem Handling Trend Analysis (1.1.1.1.3.10) – Mapping Details

Process Identifier: 1.1.1.1.3.10

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.3.10 - Undertake Problem Handling Trend Analysis**
Brief Description These processes undertake trend analysis on problem handling. **AM** *Note: Singleview is a source of information that can be extracted into the analysis process.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.3.11 Level 3: Support Problem Handling (1.1.1.1.3) – TM Forum Assessor Scores

1.1.1.1.3 - Support Problem Handling	
Grouping of Implied Tasks	**Score**
Ensure Product Offering Operation (1.1.1.1.3.1)	*100%*
Undertake Product Offering Trend Analysis (1.1.1.1.3.2)	*100%*
Request Product Offering Data Collection (1.1.1.1.3.3)	*0%*
Request Product Offering Performance Testing (1.1.1.1.3.4)	*0%*
Manage Product Offering Maintenance Programs (1.1.1.1.3.5)	*0%*
Request Provisioning Intervention (1.1.1.1.3.6)	*100%*
Report Product Offering Trend Analysis (1.1.1.1.3.7)	*0%*
Track Problem Handling Process Capability (1.1.1.1.3.8)	*0%*
Manage Problem Handling Notification (1.1.1.1.3.9)	*100%*
Undertake Problem Handling Trend Analysis (1.1.1.1.3.10)	*100%*
Total score for Parent Level 3 Process	**50% = 4**

4.1.4 Level 3: Support Retention & Loyalty (1.1.1.1.5) – Mapping details

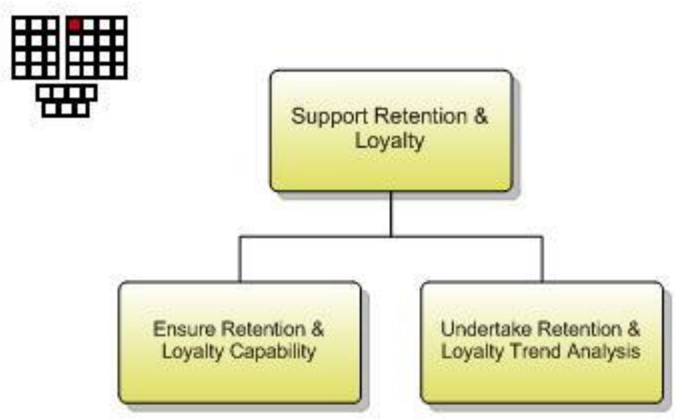


Figure 4.5 Support Retention & Loyalty decomposition into level 4 processes

Process Identifier: 1.1.1.1.5

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that all information, materials, systems and resources are available so that the Retention & Loyalty processes can be completed without delay, when a request is received from a customer

Extended Description

The purpose of the Support Retention & Loyalty processes is to make sure that there is capability (for example, information, materials, systems and resources) so that the Retention & Loyalty processes can operate effectively. Examples are information on current requests for analysis and collection of customer profile information, materials needed to analyze customer retention and loyalty information, systems needed to analyze customer retention and loyalty information, requests for the provisioning of additional resources where it has been identified that current levels will impact on timely retention and loyalty information collection and delivery.

These processes undertake trend analysis on retention and loyalty, including customer acquisitions and churn, and the effectiveness of loyalty schemes.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.4.1 Level 4: Ensure Retention & Loyalty Capability (1.1.1.1.5.1) – Mapping Details

Process Identifier: 1.1.1.1.5.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.5.1 – Ensure Retention & Loyalty Capability**
Brief Description *Note: Text highlighted in turquoise are for example purposes only and not applicable.* Ensure that there is capability (for example, information, materials, systems and resources) so that the Retention & Loyalty processes can operate effectively. Examples are information on current requests for analysis and collection of customer profile information, materials needed to analyze customer retention and loyalty information, systems needed to analyze customer retention and loyalty information, requests for the provisioning of additional resources where it has been identified that current levels will impact on timely retention and loyalty information collection and delivery. **AM** *Note: Singleview acts as a repository of information and provides system functionality to support the Retention & Loyalty processes.* **[BOO] 3.3.4 Customer Contact Management, Retention & Loyalty (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **[BOD] eTOM 1.1.1.9 Retention and Loyalty (entire section)** **[CWB] Class & Data Tool (entire section)** **[CWB] Fact Tool (entire section)**
Extended Description Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.4.2 Level 4: Undertake Retention & Loyalty Trend Analysis (1.1.1.1.5.2) – Mapping Details

Process Identifier: 1.1.1.1.5.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.5.2 - Undertake Retention & Loyalty Trend Analysis
Brief Description Undertake trend analysis on retention and loyalty, including customer acquisitions and churn, and the effectiveness of loyalty schemes. **AM** *Note: Singleview supports both local analysis, for example triggers can alert CSR to a customer who is a churn risk, and extraction of information into BI.* **[BOO] 3.3.4 Customer Contact Management, Retention & Loyalty (entire section)** **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **[BOD] eTOM 1.1.1.9 Retention and Loyalty (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.4.3 Level 3: Support Retention & Loyalty (1.1.1.1.5) – TM Forum Assessor Scores

1.1.1.1.5 - Support Retention & Loyalty	
Grouping of Implied Tasks	**Score**
Ensure Retention & Loyalty Capability (1.1.1.1.5.1)	*100%*
Undertake Retention & Loyalty Trend Analysis (1.1.1.1.5.2)	*100%*
Total score for Parent Level 3 Process	**100% = 5**

4.1.5 Level 3: Support Marketing Fulfillment (1.1.1.1.6) – Out of Scope

NOTE: This Level 3 Process is out of scope and therefore only detailed for completeness.

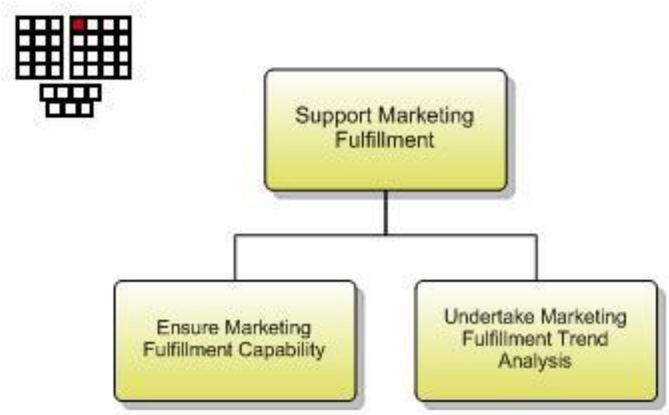


Figure 4.6 Support Marketing Fulfillment decomposition into level 4 processes

Process Identifier: 1.1.1.1.6

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that there is capability to support the expected demand for the Marketing Fulfillment Response processes so that they can operate effectively.

Extended Description

The purpose of the Support Marketing Fulfillment processes is to ensure that there is capability (for example, information, materials, systems and resources) so that the Marketing Fulfillment Response processes can operate effectively. These processes monitor planned Product Launches and current Marketing Fulfillment activity, then redistribute existing capability or enable new capability (people, facilities, infrastructure).

These processes undertake trend analysis on marketing, including problems occurring and launch effectiveness.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.5.1 Level 4: Ensure Marketing Fulfillment Capability (1.1.1.1.6.1) – Mapping Details

Process Identifier: 1.1.1.1.6.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.6.1 – Ensure Marketing Fulfillment Capability**
Brief Description Ensure that there is capability (for example, information, materials, systems and resources) so that the Marketing Fulfillment Response processes can operate effectively. Monitor planned Product Launches and current Marketing Fulfillment activity, then redistribute existing capability or enable new capability (people, facilities, infrastructure). **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.5.2 Level 4: Undertake Marketing Fulfillment Trend Analysis (1.1.1.1.6.2) – Mapping Details

Process Identifier: 1.1.1.1.6.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.6.2 - Undertake Marketing Fulfillment Trend Analysis**
Brief Description Undertake trend analysis on marketing, including problems occurring and launch effectiveness.
Extended Description Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.5.3 Level 3: Support Marketing Fulfillment (1.1.1.1.6) – TM Forum Assessor Scores

1.1.1.1.6 - Support Marketing Fulfillment	
Grouping of Implied Tasks	**Score**
Ensure Marketing Fulfillment Capability (1.1.1.1.6.1)	*N/A*
Undertake Marketing Fulfillment Trend Analysis (1.1.1.1.6.2)	*N/A*
Total score for Parent Level 3 Process	**0**

4.1.6 Level 3: Support Selling (1.1.1.1.7) – Out of Scope

NOTE: This Level 3 Process is out of scope and therefore only detailed for completeness.

Figure 4.7 Support Selling decomposition into level 4 processes

Process Identifier: 1.1.1.1.7

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Administer and manage the operation of the various sales channels and to ensure that there is capability (for example, information, materials, systems and resources) to support the Selling processes

Extended Description

The purpose of the Support Selling processes is twofold - to administer and manage the operation of the various sales channels and to ensure that there is capability (for example, information, materials, systems and resources) to support the Selling processes so that they can operate effectively.

These processes monitor current selling trends, and are responsible for the optimization and/or redistribution of existing sales channel capability or for enabling new capability (people, facilities, infrastructure). These processes undertake trend analysis on selling, including problems, successes, profit and loss

Support Selling processes deal with the administration of the Selling processes and the effectiveness of the channels to support new and existing products, as well as existing and potential customers. The processes ensure the effectiveness of the sales staff and channels both in terms of skill sets available, but also in terms of demand forecasting and management of utilization. These processes are also responsible for the administration and management of sales channel incentive, compensation and reward schemes, and for assessing the performance and effectiveness of sales channels.

Other marketing processes, such as Manage Campaign and Product Marketing Communications & Promotion, are responsible for determining the appropriate selling route or channel, and the required selling method and mechanism for specific market segments and channels, by product or product family, e.g., face-to-face contact, telemarketing, etc. Support Selling processes are responsible for ensuring that the sales channels are capable of implementing the required selling method and have the necessary skills and capacity to support the anticipated volumes and type of product in each market segment. These processes are responsible for providing feedback on the performance and effectiveness information as required to other marketing processes.

Sales Channels managed by these processes include retail storefronts, e.g. a third-party retailer or an enterprise's own storefront, various web sites or ISPs, B2B marketplaces or direct relationships with external parties, distributors for that product family, account teams, outbound calling teams, direct sales teams, etc.

The Support Selling processes are responsible for the collection and administration of sales lead s and the associated probabilities, and for the distribution of leads to the appropriate sales channels. Leads are collected from many processes both customer facing processes and back-end processes. This process is responsible to ensure that processes are operating to collect leads wherever they arise, for the management of leads, and for the matching of the lead to the appropriate sales channel. These processes are responsible for distributing the lead into the appropriate sales channel.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.7 Level 3: Support Customer QoS/SLA (1.1.1.1.8) – Out of Scope

NOTE: This Level 3 Process is out of scope and is therefore only detailed for completeness.

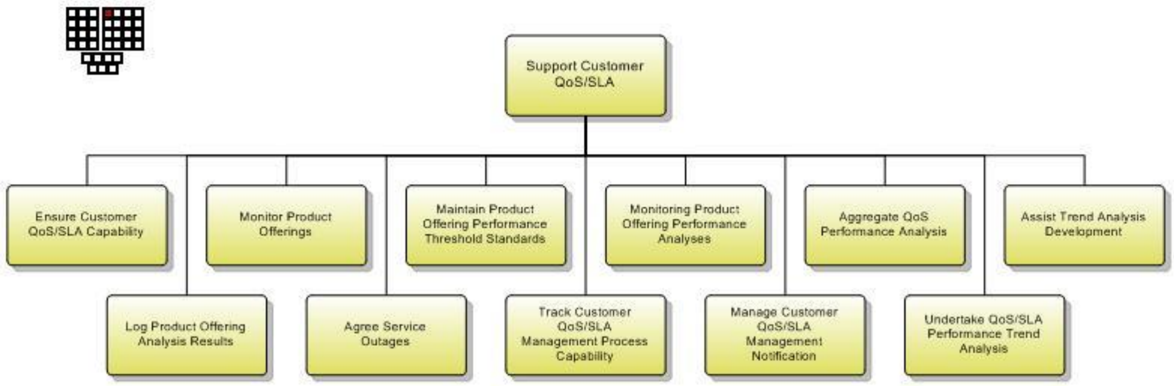


Figure 4.8 Support Customer QoS/SLA decomposition into level 4 processes

Process Identifier: 1.1.1.1.8

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Support Customer QoS/SLA Management processes by proactively monitoring and assessing the performance of purchased product offerings as a group against agreed QoS/SLA parameters, and monitoring, managing and reporting on the capability of the Customer QoS/SLA Management processes.

Extended Description

The responsibilities of the Support Customer QoS/SLA Management processes are twofold - support Customer QoS/SLA Management processes by proactively monitoring and assessing the performance of purchased product offerings as a group against agreed QoS/SLA parameters, and monitoring, managing and reporting on the capability of the Customer QoS/SLA Management processes.

Proactive management is undertaken using a range of performance parameters, whether technical, time, economic or process related.

The responsibilities of the processes include, but are not limited to:

· Undertaking proactive monitoring regimes of groups of similar purchased product offerings as required to ensure ongoing performance within agreed parameters over time;

· Developing and maintaining, in the product offering repository, acceptable and/or commercially agreed performance threshold standards for purchased product offerings to support the Customer QoS/SLA Management processes;

· Undertaking trend analysis, and producing reports, of the QoS performance of groups of like purchased product offerings to identify any longer term deterioration;

· Monitoring and analyzing the purchased product offering performance analyses produced by the Customer QoS/SLA Management processes to identify problems that may be applicable to purchased product offerings as a whole;

· Aggregate analysis of QoS performance across groups of customers or aggregate analysis of SLA types;

· Sourcing details relating to purchased product offerings performance and analysis from the product offering inventory to assist in the development of trend analyses;

· Logging the results of the analysis into the product offering inventory repository;· Establishing and managing facilities to inform customers of, and negotiate agreement for, planned service outages;

· Tracking and monitoring of the Customer QoS/SLA Management processes and associated costs, and reporting on the capability of the Customer QoS/SLA Management processes;

· Establishing and managing customer notification facilities and lists to support the Customer QoS/SLA Management notification and reporting processes; and

· Supporting the Support Customer QoS/SLA Management process.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.8 Level 3: Manage Campaign (1.1.1.1.9) – Out of Scope

NOTE: This Level 3 Process is out of scope and is therefore only detailed for completeness.

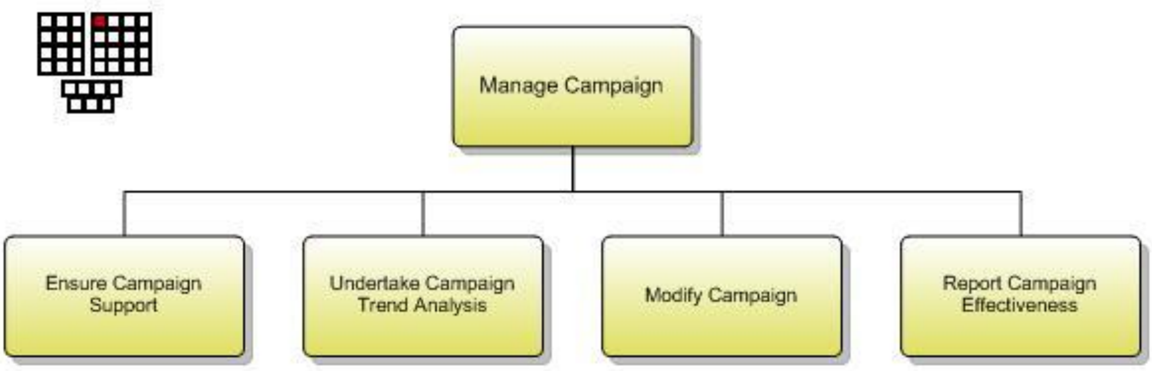


Figure 4.9 Manage Campaign decomposition into level 4 processes

Process Identifier: 1.1.1.1.9

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Manage individual marketing campaigns developed by Product Marketing Communications & Promotion processes

Extended Description

The purpose of the Manage Campaign processes is to manage individual Marketing Campaigns developed by Product Marketing Communications & Promotion processes. These processes monitor and undertake trend analysis on the effectiveness of the campaigns, make modifications and report results. Manage Campaign processes ensure that Marketing Fulfillment Response is staffed, trained and equipped appropriately to support the specific campaign, whether direct mail, TV ad, etc.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.9 Level 3: Manage Customer Inventory (1.1.1.1.10) – Mapping details

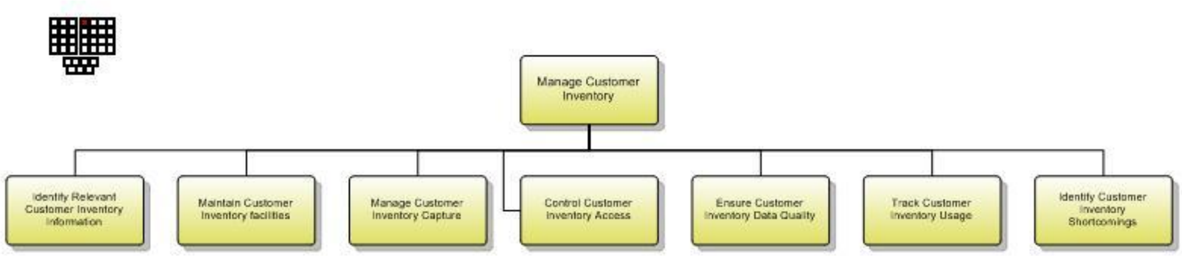


Figure 4.10 Manage Customer Inventory decomposition into level 4 processes

Process Identifier: 1.1.1.1.10

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Establish, manage and administer the enterprise's customer inventory, as embodied in the Customer Inventory Database, and monitor and report on the usage and access to the customer inventory, and the quality of the data maintained in it.

Extended Description

The purpose of the Manage Customer Inventory processes are twofold - establish, manage and administer the enterprise's customer inventory, as embodied in the Customer Inventory Database, and monitor and report on the usage and access to the customer inventory, and the quality of the data maintained in it.

The customer inventory maintains records of all customers, their interactions with the enterprise, any contracts established, and any other customer related- information, required to support CRM and other processes.

Responsibilities of these processes include, but are not limited to:

· Identifying the inventory-relevant information requirements to be captured for customers ;

· Identifying, establishing and maintaining customer inventory repository facilities;

· Establishing and managing the customer inventory management and information capture processes;

· Managing the registration and access control processes that enable processes to create, modify, update, delete and/or download customer data to and from the customer inventory;

· Ensuring the customer inventory repository accurately captures and records all identified customer details, through use of automated or manual audits;

· Tracking and monitoring of the usage of, and access to, the customer inventory repository and associated costs, and reporting on the findings; and

· Identifying any technical driven shortcomings of the customer inventory repository, and providing input to Resource Development & Management processes to rectify these issues.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.9.1 Level 4: Identify Relevant Customer Inventory Information (1.1.1.1.10.1) – Mapping Details

Process Identifier: 1.1.1.1.10.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.10.1 - Identify Relevant Customer Inventory Information
Brief Description Identifying the inventory-relevant information requirements to be captured for customers ; **AM** *Note: Singleview supports this by providing an extensible data model that can be used during analysis to drive out requirements and then implement new and extended classes and facts and in which screens information is captured/modified/displayed.* **[CMC] Part 3 Contacts and Customers (entire section)** **[CWB] Class and Data Tool (entire section)** **[CWB] Fact Tool (entire section)** **[CWB] Interface Design Tool (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.9.2 Level 4: Maintain Customer Inventory facilities (1.1.1.1.10.2) – Mapping Details

Process Identifier: 1.1.1.1.10.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.10.2 - Maintain Customer Inventory facilities
Brief Description Identifying, establishing and maintaining customer inventory repository facilities; **AM** *Note: Singleview provides and maintain the Customer database but establishing and maintaining supporting infrastructure such as premises, servers and networks is out of the scope of the solution.* **[AO] Overview -> Three Tier Architecture -> Tier 3 (entire section)** **[AO] Overview -> Oracle Database in Singleview** **[CBO] Customer Care -> Recording and Maintaining Customer Details** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.9.3 Level 4: Manage Customer Inventory Capture (1.1.1.1.10.3) – Mapping Details

Process Identifier: 1.1.1.1.10.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.10.3 - Manage Customer Inventory Capture
Brief Description Establishing and managing the customer inventory management and information capture processes; **AM** *Note: Singleview supports this by providing an extensible data model that can be used during analysis to drive out requirements and then implement new and extended classes and facts and in which screens information is captured/modified/displayed.* [CMC] Part 3 Contacts and Customers (entire section) [CWB] Class and Data Tool (entire section) [CWB] Fact Tool (entire section) [CWB] Interface Design Tool (entire section) **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.9.4 Level 4: Control Customer Inventory Access (1.1.1.1.10.4) – Mapping Details

Process Identifier: 1.1.1.1.10.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.10.4 - Control Customer Inventory Access
Brief Description Managing the registration and access control processes that enable processes to create, modify, update, delete and/or download customer data to and from the customer inventory; **AM** *Note: Singleview has a comprehensive security model via which it is possible to administer :* • *Users who can access Singleview* • *Tasks a user can perform* • *Data a user can access and the level of access to that data* *This includes pseudo-users representing customer self-access* [AO] Singleview Security Model (entire section) **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.9.5 Level 4: Ensure Customer Inventory Data Quality (1.1.1.1.10.5) – Mapping Details

Process Identifier: 1.1.1.1.10.5

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.10.5 - Ensure Customer Inventory Data Quality**
Brief Description Ensuring the customer inventory repository accurately captures and records all identified customer details, through use of automated or manual audits. Monitoring and reporting on the quality of the data maintained in the inventory. The customer inventory maintains records of all customers, their interactions with the enterprise, any contracts established, and any other customer related-information, required to support CRM and other processes. **AM** *Note: Singleview applies validation to data capture at point of entry. There is also a batch utility, the Data Validation Process (DVP) that can be run at regular intervals to verify the ongoing integrity of customer inventory data. The extensible Singleview data model includes records of all contacts and customers, all interactions, all contracts and any requirements for additional Facts.* **[CMC] Part 2 Cases (entire section)** **[CMC] Part 3 Contacts and Customers (entire section)** **[SAG] Database Validation (entire section)** **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Not used for this process element. **Optional** Not used for this process element

Interactions
Not used for this process element

4.1.9.6 Level 4: Track Customer Inventory Usage (1.1.1.1.10.6) – Mapping Details

Process Identifier: 1.1.1.1.10.6

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.10.6 - Track Customer Inventory Usage
Brief Description Tracking and monitoring of the usage of, and access to, the customer inventory repository and associated costs, and reporting on the findings **AM** *Note: This can be achieved at two levels. Case Management provides a business level insight into which customers have been accessed for what purpose. At the database level different levels of auditing can be configured to record information about parties who made changes to a table, when the changes were made, and what the record being changed looked like before the change.* **[CBO] Customer Care -> Viewing Historical Data Records** By creating and saving historical records, Convergent Billing can track when changes were made to a record and to view a record as it was at a specific time. Depending on a user's access privileges, it may also be possible to change the historical record (that is, to backdate changes). **[BOO] 3.3.13 Case Management (entire section)** **[SAG] Database Table Auditing (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use.

Interactions
Reserved for future use.

4.1.9.7 Level 4: Identify Customer Inventory Shortcomings (1.1.1.1.10.7) – Mapping Details

Process Identifier: 1.1.1.1.10.7

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.10.7 - Identify Customer Inventory Shortcomings**
Brief Description Identifying any technical driven shortcomings of the customer inventory repository, and providing input to Resource Development & Management processes to rectify these issues. **AM** All attributes required for a specific Customer Data Model are typically mapped to the pre-defined Singleview data model. Whenever such mapping is not possible Singleview data model can be extended to address these shortcoming, capturing and storing whatever profile information is required. This can be completed by the service provider via configuration without the need to code. Singleview provides a set of tools (Class and Data tools) to analyze the current Customer Model and identify shortcomings. The information retrieved with these tools and their export functionality is used to communicate with Resource Development & Management processes. **[PD] 4.1.1 Customer Care GUI – Back Office** (sections about Service provider screen modifications and Data validation (field, form and database level) **[BOO] 3.3.1 Customer Information Management** **[CBCFG] Sections about Entity Validation, Attribute types and Reference types** **[CWB] Class and Data Tool, Fact Tool** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.9.8 Level 3: Manage Customer Inventory (1.1.1.1.10) – TM Forum Assessor Scores

1.1.1.1.10 - Manage Customer Inventory	
Grouping of Implied Tasks	**Score**
Identify Relevant Customer Inventory Information (1.1.1.1.10.1)	*100%*
Maintain Customer Inventory facilities (1.1.1.1.10.2)	*50%*
Manage Customer Inventory Capture (1.1.1.1.10.3)	*100%*
Control Customer Inventory Access (1.1.1.1.10.4)	*100%*
Ensure Customer Inventory Data Quality (1.1.1.1.10.5)	*100%*
Track Customer Inventory Usage (1.1.1.1.10.6)	*75%*
Identify Customer Inventory Shortcomings (1.1.1.1.10.7)	*100%*
Total score for Parent Level 3 Process	**625/700 = 75% = 4.8**

4.1.10 Level 3: Manage Product Offering Inventory (1.1.1.1.11) – Mapping details

Figure 4.11 Manage Product Offering Inventory decomposition into level 4 processes

Process Identifier: 1.1.1.1.11

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Establish, manage and administer the enterprise's product offering inventory, as embodied in the Product Offering Inventory Database, and monitor and report on the usage and access to the product offering inventory, and the quality of the data maintained in it.

Extended Description

The purpose of the Manage Product Offering Inventory processes are twofold - establish, manage and administer the enterprise's product offering inventory, as embodied in the Product Offering Inventory Database, and monitor and report on the usage and access to the product offering inventory, and the quality of the data maintained in it.

The product offering inventory maintains records of all product offerings, their interactions with the enterprise, and any other product offering related- information, required to support CRM and other processes.

The product offering inventory is also responsible for maintaining the association between customers and purchased product offering instances, created as a result of the Order Handling processes.

Responsibilities of these processes include, but are not limited to:

· Identifying the inventory-relevant information requirements to be captured for product offerings ;

· Identifying, establishing and maintaining product offering inventory repository facilities;

· Establishing and managing the product offering inventory management and information capture processes;

· Managing the registration and access control processes that enable processes to create, modify, update, delete and/or download product offering data to and from the product offering inventory;

· Ensuring the product offering inventory repository accurately captures and records all identified product offering details, through use of automated or manual audits;

· Tracking and monitoring of the usage of, and access to, the product offering inventory repository and associated costs, and reporting on the findings; and

· Identifying any technical driven shortcomings of the product offering inventory repository, and providing input to Resource Development & Management processes to rectify these issues.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.10.1 Level 4: Identify Relevant Product Offering Inventory Information (1.1.1.1.11.1) – Mapping Details

Process Identifier: 1.1.1.1.11.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.11.1 - Identify Relevant Product Offering Inventory Information**
Brief Description Identifying the inventory-relevant information requirements to be captured for product offerings **AM** *Note: Singleview supports this by providing an extensible data model that can be used during analysis to drive out requirements and then implement new and extended classes and facts and in which screens information is captured/modified/displayed.* **[CMC] Part 4 Products (entire section)** **[CWB] Class and Data Tool (entire section)** **[CWB] Fact Tool (entire section)** **[CWB] Interface Design Tool (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.10.2 Level 4: Maintain Product Offering Inventory facilities (1.1.1.1.11.2) – Mapping Details

Process Identifier: 1.1.1.1.11.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

<table>
<tr><th>Level 4 PROCESS MAPPING DETAILS
1.1.1.1.11.2- Maintain Product Offering Inventory Facilities</th></tr>
<tr><td>Brief Description

Identifying, establishing and maintaining product offering inventory repository facilities; AM

Note: Singleview provides a complete repository for managing the product holdings of customers including the offers purchased, the resultant product instances and the associated services and equipment (resources), however establishing and maintaining supporting infrastructure such as premises, servers and networks is out of the scope of the solution.

[CBO] Customer Care -> Assigning Products and Services to a Customer (entire section)

[CBO] Customer Care -> Recording, Maintaining, and Allocating Equipment (entire section)

Note: Any shortcomings in the Product Offering Inventory that are identified can be addressed through Singleview’s extensible data model that can be used during analysis to drive out requirements and then implement new and extended classes and facts and in which screens information is captured/modified/displayed.

[CMC] Part 3 Contacts and Customers (entire section)

[CWB] Class and Data Tool (entire section)

[CWB] Fact Tool (entire section)

[CWB] Interface Design Tool (entire section)

Extended Description

Not used for this process element

Explanatory

Reserved for future use.

Mandatory</td></tr>
</table>

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.10.3 Level 4: Manage Product Offering Inventory Capture (1.1.1.1.11.3) – Mapping Details

Process Identifier: 1.1.1.1.11.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.11.3 - Manage Product Offering Inventory Capture
Brief Description Establishing and managing the product offering inventory management and information capture processes; **AM** *Note: Singleview supports this by providing an extensible data model that can be used during analysis to drive out requirements and then implement new and extended classes and facts and in which screens information is captured/modified/displayed.* **[CMC] Part 3 Contacts and Customers (entire section)** **[CMC] Part 4 Products (entire section)** **[CWB] Class and Data Tool (entire section)** **[CWB] Fact Tool (entire section)** **[CWB] Interface Design Tool (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use **Optional** Reserved for future use.

Interactions

Reserved for future use.

4.1.10.4 Level 4: Control Product Offering Inventory Access (1.1.1.1.11.4) – Mapping Details

Process Identifier: 1.1.1.1.11.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.11.4 - Control Product Offering Inventory Access**
Brief Description Managing the registration and access control processes that enable processes to create, modify, update, delete and/or download product offering data to and from the product offering inventory **AM** *Note: Singleview has a comprehensive security model via which it is possible to administer :* • *Users who can access Singleview* • *Tasks a user can perform* • *Data a user can access and the level of access to that data* *This includes pseudo users representing customer self-access* [AO] Singleview Security Model (entire section) **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.1.10.5 Level 4: Ensure Product Offering Inventory Data Quality (1.1.1.1.11.5) – Mapping Details

Process Identifier: 1.1.1.1.11.5

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.11.5 - Ensure Product Offering Inventory Data Quality
Brief Description Ensuring the product offering inventory repository accurately captures and records all identified product offering details, through use of automated or manual audits. Monitoring and reporting on the quality of the data maintained in the inventory. The product offering inventory maintains records of all product offerings, their interactions with the enterprise, and any other product offering related- information, required to support CRM and other processes. The product offering inventory is also responsible for maintaining the association between customers and purchased product offering instances, created as a result of the Order Handling processes. **AM** *Note: Singleview applies validation to data capture at point of entry. There is also a batch utility, the Data Validation Process (DVP) that can be run at regular intervals to verify the ongoing integrity of product inventory data. The extensible Singleview data model includes records of all interactions as cases which for orders are associated with sales order cases which are in turn related to orders which are in turn related to the resultant product instances.* **[CMC] Part 2 Cases (entire section)** **[CMC] Part 4 Products (entire section)** **[SAG] Database Validation (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional**

Reserved for future use.

Interactions

Reserved for future use.

4.1.10.6 Level 4: Track Product Offering Inventory Usage (1.1.1.1.11.6) – Mapping Details

Process Identifier: 1.1.1.1.11.6

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.11.6 - Track Product Offering Inventory Usage**
Brief Description Tracking and monitoring of the usage of, and access to, the product offering inventory repository and associated costs, and reporting on the findings **AM** *Note: This can be achieved at two levels. Case Management provides a business level insight into which customers have been accessed for what purpose. At the database level different levels of auditing can be configured to record information about individuals who made changes to a table, when the changes were made, and what the record being changed looked like before the change.* **[CBO] Customer Care -> Viewing Historical Data Records** By creating and saving historical records, Convergent Billing can track when changes were made to a record and to view a record as it was at a specific time. Depending on a user's access privileges, it may also be possible to change the historical record (that is, to backdate changes). **[BOO] 3.3.13 Case Management (entire section)** **[SAG] Database Table Auditing (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use.

Interactions
Reserved for future use.

4.1.10.7 Level 4: Identify Product Offering Inventory Shortcomings (1.1.1.1.11.7) – Mapping Details

Process Identifier: 1.1.1.1.11.7

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.11.7 - Identify Product Offering Inventory Shortcomings
Brief Description Identifying any technical driven shortcomings of the product offering inventory repository, and providing input to Resource Development & Management processes to rectify these issues. **AM** Singleview provides a Product Model based on the concepts of Base Products, Companion Products, Service Types and Derived Attributes tables. This pre-defined structure provides an extensible number of fields that can be used to address gaps to achieve the desired product model. Singleview provides a set of tools (Class and Data tools) to analyze the current Product Model and identify shortcomings. The information retrieved with these tools and their export functionality is used to communicate with Resource Development & Management processes. **[PD] 4.2 Product modelling** **[BOO] 3.7.1 Catalog Management** **[CFG] - Configuration Fundamentals Guide for Singleview 8.0** **[Product Model slide]** **[CWB] Class and Data Tool, Fact Tool** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use.

Interactions
Reserved for future use.

4.1.10.8 Level 3: Manage Product Offering Inventory (1.1.1.1.11) – TM Forum Assessor Scores

1.1.1.1.11 - Manage Product Offering Inventory	
Grouping of Implied Tasks	**Score**
Identify Relevant Product Offering Inventory Information (1.1.1.1.11.1)	*100%*
Maintain Product Offering Inventory facilities (1.1.1.1.11.2)	*50%*
Manage Product Offering Inventory Capture (1.1.1.1.11.3)	*100%*
Control Product Offering Inventory Access (1.1.1.1.11.4)	*100%*
Ensure Product Offering Inventory Data Quality (1.1.1.1.11.5)	*100%*
Track Product Offering Inventory Usage (1.1.1.1.11.6)	*75%*
Identify Product Offering Inventory Shortcomings (1.1.1.1.11.7)	*100%*
Total score for Parent Level 3 Process	**625/700 = 75% = 4.8**

4.1.11 Level 3: Manage Sales Inventory (1.1.1.1.12) – Out of Scope

NOTE: This Level 3 Process is out of scope and therefore only detailed for completeness.

Figure 4.12 Manage Sales Inventory decomposition into level 4 processes

Process Identifier: 1.1.1.1.12

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Establish, manage and administer the enterprise's inventory of sales prospects, actual sales, channel management and sales commissions, as embodied in the Sales Inventory Database, and monitor and report on the usage and access to the sales inventory, and the quality of the data maintained in it.

Extended Description

The purpose of the Manage Sales Inventory processes are twofold - establish, manage and administer the enterprise's inventory of sales prospects, actual sales, channel management and sales commissions, as embodied in the Sales Inventory Database, and monitor and report on the usage and access to the sales inventory, and the quality of the data maintained in it.

The sales inventory maintains records of all sales, sales prospects and sales leads, sales channel activity, marketing campaign targets and performance, sales commissions and any other sales related-information, required to support both the Support Selling and the Selling processes.

The sales inventory is also responsible for maintaining the association between customers and sales instances, created as a result of the Selling processes.

Responsibilities of these processes include, but are not limited to:

· Identifying and storing the inventory-relevant information requirements to be captured for sales processes and sales commission management ;

· Identifying, establishing and maintaining sales inventory repository facilities;

· Establishing and managing the sales inventory management and information capture processes;

· Managing the registration and access control processes that enable processes to create, modify, update, delete and/or download sales data to and from the sales inventory;

· Ensuring the sales inventory repository accurately captures and records all identified sales details, through use of automated or manual audits;

· Tracking and monitoring of the usage of, and access to, the sales inventory repository and associated costs, and reporting on the findings; and

· Identifying any technical driven shortcomings of the sales inventory repository, and providing input to Resource Development & Management processes to rectify these issues.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.12 Level 3: Support Bill Invoice Management (1.1.1.1.13) – Mapping details

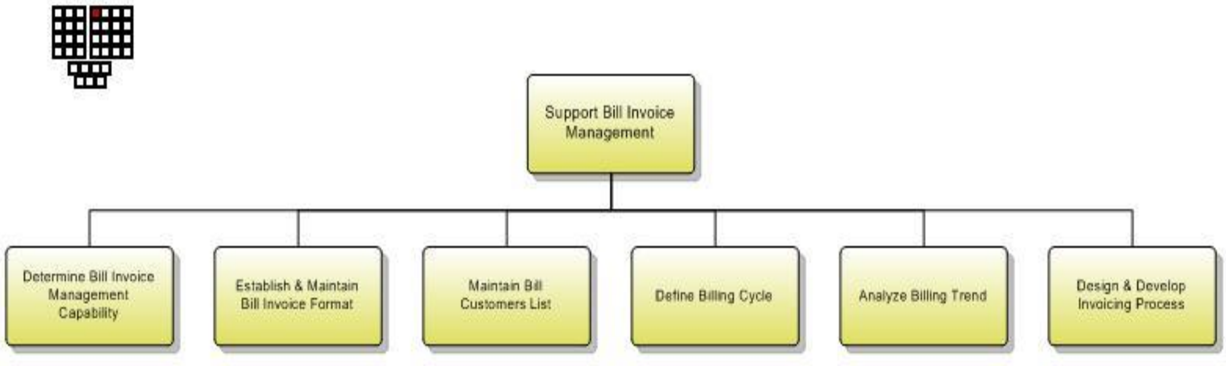


Figure 4.13 Support Bill Invoice Management decomposition into level 4 processes

Process Identifier: 1.1.1.1.13

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that all information, materials, systems and resources are available so that the Bill Invoice Management processes can be completed without delay.

Extended Description

The purpose of the Support Bill Invoice Management processes is to make sure that there is capability (for example, information, materials, systems and resources) so that the Bill Invoice Management processes can operate effectively. Examples are information needed to generate invoices like taxes, charges, prices, etc., information needed to deliver bills to customers such as address formats and post/zip codes structures, systems needed to create bills, requests for provisioning of additional resources where it has been identified that current levels will impact on timely bill preparation.

Where a commercial agreement has been established with a customer to present a billing invoice in a particular customer specific format, these processes are responsible for establishing and maintain the customer specific billing invoice formats, and any interaction with specific customers to modify the format, and design and development of the Service Provider’s invoicing process.

These processes maintain lists of customers who are eligible for receiving bills in electronic format, and maintain the form of electronic format to be used on a customer basis.

Support Bill Invoice Management processes define the billing cycles and respective dates according to cash flow needs as established by Financial Management processes.

These processes undertake trend analysis on invoice generation, production and distribution issues, including volume per billing cylce.

Explanatory

The "Support Bill Invoicing Management"is responsible for the "lists of customers who are eligible for receiving bills in electronic format", not responsible for list of customers receiving bills, there is a difference.

Mandatory

The purpose of the Support Bill Invoice Management processes is to make sure that there is capability (for example, information, materials, systems and resources) so that the Bill Invoice Management processes can operate effectively.

Where a commercial agreement has been established with a customer to present a billing invoice in a particular customer specific format, these processes are responsible for establishing and maintain the customer specific billing invoice formats, and any interaction with specific customers to modify the format, and design and development of the Service Provider’s invoicing process.

These processes maintain lists of customers who are eligible for receiving bills in electronic format, and maintain the form of electronic format to be used on a customer basis.

Optional

Examples are information needed to generate invoices like taxes, charges, prices, etc., information needed to deliver bills to customers such as address formats and post/zip codes structures, systems needed to create bills, requests for provisioning of additional resources where it has been identified that current levels will impact on timely bill preparation.

Interactions

Not used for this process element.

4.1.12.1 Level 4: Determine Bill Invoice Management Capability (1.1.1.1.13.1) – Mapping Details

Process Identifier: 1.1.1.1.13.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.13.1 - Determine Bill Invoice Management Capability
Brief Description Make sure that there is capability so that the Bill Invoice Management processes can operate effectively.
Extended Description The purpose of the Determine Bill Invoice Management Capability process is to make sure that there is capability (for example, information, materials, systems and resources) so that the Bill Invoice Management processes can operate effectively. Examples are information needed to generate invoices like taxes, charges, prices, etc., information needed to deliver bills to customers such as address formats and post/zip codes structures, systems needed to create bills, requests for provisioning of additional resources where it has been identified that current levels will impact on timely bill preparation
Explanatory Examples are information needed to generate invoices like taxes, charges, prices, etc., information needed to deliver bills to customers such as address formats and post/zip codes structures, systems needed to create bills, requests for provisioning of additional resources where it has been identified that current levels will impact on timely bill preparation
Mandatory *Note: Text highlighted in turquoise are for example purposes only and not applicable.* The purpose of the Determine Bill Invoice Management Capability process is to make sure that there is capability (for example, information, materials, systems and resources) so that the Bill Invoice Management processes can operate effectively. **AM** *Note: Excluding materials (assumed to be such things as stationery), and resources (assumed to be billing operations staff). Singleview is a data repository and provider of system functionality to support the Bill Invoice Management processes.*

[AO] Billing Architecture (complete section)

[BOO] 3.3.9 Bill Format/Render in Singleview (complete section)

[BOO] 3.3.10 Billing Account Management (complete section)

[BOO] 3.3.12 Bill Calculation (complete section)

[BOD] eTOM 1.1.1.10 Bill Invoice Management (complete section)

Optional

Not used for this process element

Interactions

Not used for this process element

4.1.12.2 Level 4: Establish & Maintain Bill Invoice Format (1.1.1.1.13.2) – Mapping Details

Process Identifier: 1.1.1.1.13.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.13.2 - Establish & Maintain Bill Invoice Format
Brief Description Establish and maintain the customer bill invoice formats, and any interaction with specific customers to modify the format. **Extended Description** The purpose of the Establish & Maintain Bill Invoice Format process is to establish and maintain the customer bill invoice formats to be used on a customer basis, and any interaction with specific customers to modify the format, where a commercial agreement has been established with a customer to present a billing invoice in a particular customer specific format. The bill invoice format should comprise electronic form, paper from or etc. **Explanatory** Not used for this process element **Mandatory** The purpose of the Establish & Maintain Bill Invoice Format process is to establish and maintain the customer bill invoice formats to be used on a customer basis, and any interaction with specific customers to modify the format, where a commercial agreement has been established with a customer to present a billing invoice in a particular customer specific format. The bill invoice format should comprise electronic form, paper form or etc. **AM** *Note: Singleview supports both the establishment and maintenance of formats and the assignment of formats to customers.* **[AO] Billing Architecture -> Invoice Generation Process (IGP)** Templates Templates control the appearance of information displayed to the customer, and play a significant role in processing the data that is displayed on customer documents. Any suitable text-based page description language can be used to create templates. Templates can also be created using the Singleview Invoice Design Tool. The tool uses two files, structure and

layout, that manage configuration and design of the document and produce the final template.
The structure file contains information about what can be included in the document layout (for example, fonts or colours). The layout file describes the contents and format of the document (for example, customer details displayed first, and service summary section printed in bold).
The Invoice Design Tool can produce TEX and XML-based templates. IDTTeX can be used to generate postscript, AFP, TEX, or Text format document images.

[BOO] 3.3.10 Billing Account Management

· Complete management of customer billing accounts including:

- Account type (e.g. debtor, deposit, loyalty or pre-paid)
- Billing address.
- Setting of credit limits.
- **Invoice format and media options.**
- Assignment to billing cycles.

Optional

Not used for this process element

Interactions

Not used for this process element

4.1.12.3 Level 4: Maintain Bill Customers List (1.1.1.1.13.3) – Mapping Details

Process Identifier: 1.1.1.1.13.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.13.3 - Maintain Bill Customers List
Brief Description Maintain lists of customers who are eligible for receiving bills. **Extended Description** The Maintain Bill Customers List process is to maintain lists of customers who are eligible for receiving bills. The multiple customer lists may exist for different usage, for example, customer list for receiving electronic bills, customer list for receiving paper bills. The process is responsible for adding a customer into the list and removing a customer from the list and maintaining delivery addresses of customers in the list. **Explanatory** This process activity is used to maintain a list of customer. This is needed information for Bill Invoice Management process to deliver bills to customers. **Mandatory** The Maintain Bill Customers List process is to maintain lists of customers who are eligible for receiving bills. The multiple customer lists may exist for different usage, for example, customer list for receiving electronic bills, customer list for receiving paper bills. The process is responsible for adding a customer into the list and removing a customer from the list and maintaining delivery addresses of customers in the list. **AM** *Note: Singleview implements Bill Customers List as part of Billing Account Management.* **[BOO] 3.3.10 Billing Account Management** · Complete management of customer billing accounts including: • Account type (e.g. debtor, deposit, loyalty or pre-paid) • **Billing address.** • Setting of credit limits.

- **Invoice format and media options.**
- Assignment to billing cycles.

· **[PD] 4.1.1 Customer Care GUI – Back Office**

· […] Customer and Account Model

· Each customer can have many accounts used for different purposes, for example, invoice account, prepaid account, and deposit account. For each level in a customer hierarchy it is possible to define **if an invoice is to be produced or a statement or no billing output**. How this is set will control how Singleview uses an account associated with a customer, as if the invoice is at a higher point in the customer hierarchy charges roll up to that higher level.

· For example, residential customers usually require one invoice for all services and equipment, whereas a corporate customer may require an invoice for the head office and statements sent to each branch office.

Optional

Not used for this process element

Interactions

Not used for this process element

4.1.12.4 Level 4: Define Billing Cycle (1.1.1.1.13.4) – Mapping Details

Process Identifier: 1.1.1.1.13.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.13.4 - Define Billing Cycle
Brief Description Define the billing cycles and respective dates according to cash flow needs as established by Financial Management processes. **Extended Description** The purpose of the Define Billing Cycle process is to define the billing cycles and respective dates according to cash flow needs as established by Financial Management processes. **Explanatory** Not used for this process element **Mandatory** The purpose of the Define Billing Cycle process is to define the billing cycles and respective dates according to cash flow needs as established by Financial Management processes. **AM** *Note: In Singleview Billing cycles are defined as Schedules which can be defined to execute at any frequency from daily to annual. Billing Account Management is used to assign customers to cycles.* **[AO] Billing Architecture -> Bill Runs (entire section)** **[BOO] 3.3.10 Billing Account Management** · Complete management of customer billing accounts including: • Account type (e.g. debtor, deposit, loyalty or pre-paid) • Billing address. • Setting of credit limits. • Invoice format and media options. • **Assignment to billing cycles.**

Optional

Not used for this process element

Interactions

Not used for this process element

4.1.12.5 Level 4: Analyze Billing Trend (1.1.1.1.13.5) – Mapping Details

Process Identifier: 1.1.1.1.13.5

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.13.5 - Analyze Billing Trend
Brief Description Undertake trend analysis on invoice generation, production and distribution issues. **Extended Description** The purpose of Analyze Billing Trend process is to analyse trend on invoice generation, production and distribution issues, including volume per billing cycle. These analysis results may be utilized to improve the operational efficiency of Bill Invoice Management processes, reduce operational costs and enhance customer experience. **Explanatory** Not used for this process element **Mandatory** The purpose of Analyze Billing Trend process is to analyse trend on invoice generation, production and distribution issues, including volume per billing cycle. **AM** *Note: Singleview maintains extensive statistics on billing processing, both the bill run and the server processes executing it that can be used to assess and continuously improve bill invoice management processes.* **[CBO] Billing and Finance -> Bill Runs** Statistical information for each billing operation is recorded, including the success or failure of the operation and its duration. For bill runs processing multiple customers, the statistical information is recorded for each operation and summarised for the overall bill run **[CBO] Billing and Finance -> Monitoring Server Processes (entire section)**

Optional

Not used for this process element

Interactions

These analysis results may be utilized to improve the operational efficiency of Bill Invoice Management processes, reduce operational costs and enhance customer experience.

4.1.12.6 Level 4: Design & Develop Invoicing Process (1.1.1.1.13.6) – Mapping Details

Process Identifier: 1.1.1.1.13.6

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.13.6 - Design & Develop Invoicing Process**
Brief Description Design and develop the Service Provider's invoicing process. **Extended Description** The purpose of Design & Develop Invoicing Process process is to design and develop the invoicing process according to Service Provider's requirements. The billing invoice processes may include electronic/physical invoice format design, electronic invoice distribution, physical invoice production and invoice distribution and etc. Service Provider would orchestrate the relevant processes to manage and control the bill invoice production and distribution in efficiency. **Explanatory** The billing invoice processes may include electronic/physical invoice format design, electronic invoice distribution, physical invoice production and invoice distribution and etc. **Mandatory** The purpose of Design & Develop Invoicing Process process is to design and develop the invoicing process according to Service Provider's requirements. Service Provider would orchestrate the relevant processes to manage and control the bill invoice production and distribution in efficiency. **AM** *Note: Singleview invoice processing is broken down into a number of discrete steps that can be individually scheduled including linking to/dependencies with other entries in the Operational Schedule. It is therefore possible to configure the processing to be optimal for the Service Provider's circumstances.* **[AO] Billing Architecture -> Bill Runs (entire section)** **[CBO] Billing and Finance -> Controlling Server Processes (entire section)**

Optional

Not used for this process element

Interactions

Service Provider would orchestrate the relevant processes to manage and control the bill invoice production and distribution in efficiency.

4.1.12.7 Level 3: Support Bill Invoice Management (1.1.1.1.13) – TM Forum Assessor Scores

1.1.1.1.13 - Support Bill Invoice Management	
Grouping of Implied Tasks	**Score**
Determine Bill Invoice Management Capability (1.1.1.1.13.1)	*100%*
Establish & Maintain Bill Invoice Format (1.1.1.1.13.2)	*100%*
Maintain Bill Customers List (1.1.1.1.13.3)	*100%*
Define Billing Cycle (1.1.1.1.13.4)	*100%*
Analyze Billing Trend (1.1.1.1.13.5)	*100%*
Design & Develop Invoicing Process (1.1.1.1.13.6)	*100%*
Total score for Parent Level 3 Process	**600/600 = 100% = 5**

4.1.13 Support Bill Payments & Receivables Management (1.1.1.1.14) – Mapping details

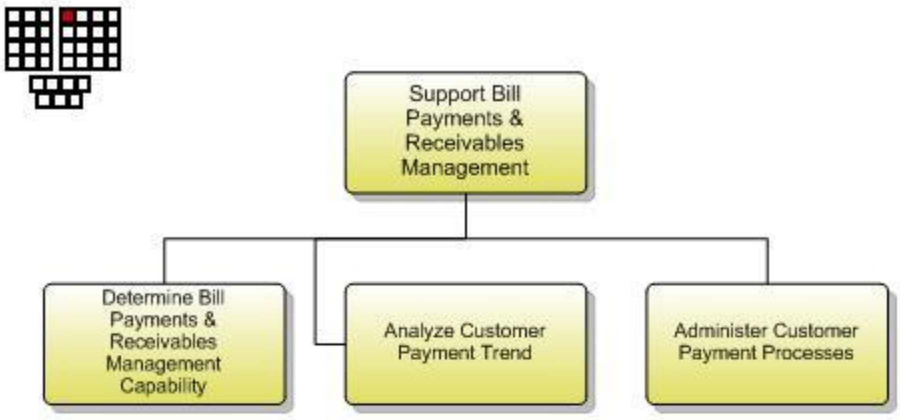


Figure 4.14 Support Bill Payments & Receivables Management decomposition into level 4 processes

Process Identifier: 1.1.1.1.14

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that all information and systems are available so that the Bill Payments & Receivables Management processes can be completed without delay.

Extended Description

The purpose of the Support Bill Payments & Receivables Management processes is to make sure that there is capability (for example, established collection channels, information and systems) so that the Bill Payments & Receivables Management processes can operate effectively. Examples are collection channels capable of processing customer bill payments, information on payments done by customers, systems needed to process the payments and make the customer bill account balance.

In addition these processes are responsible for establishing, managing and, if required, operating the various payment processes that the Service Provider chooses to establish.

These processes undertake trend analysis on customer billing debts, alerting when pre-determined thresholds are tended to be exceeded.

Explanatory

The payment processes should be established before operation.

Mandatory

The purpose of the Support Bill Payments & Receivables Management processes is to make sure that there is capability (for example, established collection channels, information and systems) so that the Bill Payments & Receivables Management processes can operate effectively. Examples are collection channels capable of processing customer bill payments, information on payments done by customers, systems needed to process the payments and make the customer bill account balance.

In addition these processes are responsible for establishing, managing and, if required, operating the various payment processes that the Service Provider chooses to establish.

Optional

These processes undertake trend analysis on customer billing debts, alerting when pre-determined thresholds are tended to be exceeded.

Interactions

Not used for this process element.

4.1.13.1 Level 4: Determine Bill Payments & Receivables Management Capability (1.1.1.1.14.1) – Mapping Details

Process Identifier: 1.1.1.1.14.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.14.1 - Determine Bill Payments & Receivables Management Capability
Brief Description Make sure that there is capability that the Bill Payments & Receivables Management processes can operate effectively. **Extended Description** The purpose of Determine Bill Payments & Receivables Management Capability process is to make sure that there is capability (for example, established collection channels, information and systems) so that the Bill Payments & Receivables Management processes can operate effectively. Examples are collection channels capable of processing customer bill payments, information on payments done by customers, systems needed to process the payments and make the customer bill account balance. **Explanatory** Examples are collection channels capable of processing customer bill payments, information on payments done by customers, systems needed to process the payments and make the customer bill account balance. **Mandatory** The purpose of Determine Bill Payments & Receivables Management Capability process is to make sure that there is capability (for example, established collection channels, information and systems) so that the Bill Payments & Receivables Management processes can operate effectively.**AM** *Note: Singleview supports bill payments through multiple channels, both as batch and individual payments.* **[BOO] 3.3.7 Receivables Management (entire section)**

Optional

Not used for this process element

Interactions

Not used for this process element

4.1.13.2 Level 4: Analyze Customer Payment Trend (1.1.1.1.14.2) – Mapping Details

Process Identifier: 1.1.1.1.14.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.14.2 - Analyze Customer Payment Trend**
Brief Description Analyse trend on customer billing debts, alerting when pre-determined thresholds are tended to be exceeded.
Extended Description The purpose of Analyze Customer Payment Trend process is to analyse trend on customer billing debts, alerting when pre-determined thresholds are tended to be exceeded. The analysis results may be utilized to guide developing billing debt policies to reduce or avoid loss of enterprise incomes.
Explanatory Not used for this process element
Mandatory The purpose of Analyze Customer Payment Trend process is to analyse trend on customer billing debts, alerting when pre-determined thresholds are tended to be exceeded.**AM** *Note: Singleview can initiate processing, including scheduled events in the future, every time an account balance is updated. Typically this is used to drive the traditional collections chase paths but it can also be used for real time actions for example reacting to credit limit thresholds or payment reversal.* **[BOO] 3.3.11 Collection Management (entire section)**
Optional Not used for this process element

Interactions

The analysis results may be utilized to guide developing billing debt policies to reduce or avoid loss of enterprise incomes.

4.1.13.3 Level 4: Administer Customer Payment Processes (1.1.1.1.14.3) – Mapping Details

Process Identifier: 1.1.1.1.14.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.14.3 - Administer Customer Payment Processes**
Brief Description Establish, manage and, if required, operate the various payment processes that the Service Provider chooses to establish **Extended Description** The purpose of Administer Customer Payment Processes process is to establish, manage and operate the payment processes chosen by Service Provider. The customer payment processes may be according to the local policies (e.g. national law) and rules decided by Service Provider. For example, business customers pay bills in different channel comparing to personal customers. This process is also responsible for updating/revising the payment processes on demand. **Explanatory** The process "Administer Customer Payment Processes" is to manage customer payment processes, not to manage payment. The payment processes should be established before operation. For example, business customers pay bills in different channel comparing to personal customers. This is why this process is not under "Manage Customer Payments". **Mandatory** The purpose of Administer Customer Payment Processes process is to establish, manage and operate the payment processes chosen by Service Provider. The customer payment processes may be according to the local policies (e.g. national law) and rules decided by Service Provider. This process is also responsible for updating/revising the payment processes on demand. *Note: This is assumed to be a Business Analysis activity and therefore out of scope for Singleview.* **Optional** Not used for this process element

Interactions
Not used for this process element

4.1.13.4 Level 3: Support Bill Payments & Receivables Management (1.1.1.1.14) – TM Forum Assessor Scores

1.1.1.1.14 - Support Bill Payments & Receivables Management	
Grouping of Implied Tasks	**Score**
Determine Bill Payments & Receivables Management Capability (1.1.1.1.14.1)	*100%*
Analyze Customer Payment Trend (1.1.1.1.14.2)	*100%*
Administer Customer Payment Processes (1.1.1.1.14.3)	*0%*
Total score for Parent Level 3 Process	**200/300 = 67% = 4.3**

4.1.14 Support Bill Inquiry Handling (1.1.1.1.15) – Mapping details

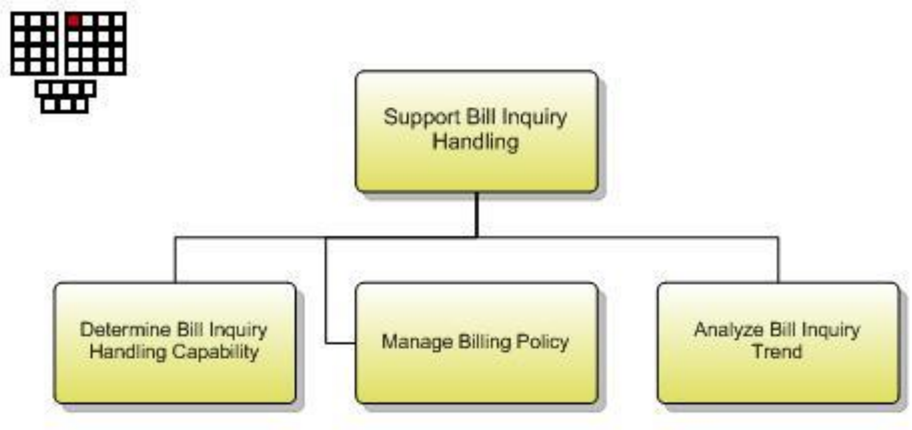


Figure 4.15 Support Bill Inquiry Handling decomposition into level 4 processes

Process Identifier: 1.1.1.1.15

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that all information, systems and resources are available so that the Bill Inquiry Handling processes can be completed without delay.

Extended Description

The purpose of the Support Bill Inquiry Handling processes is to make sure that there is capability (for example, information, systems and resources) so that the Bill Inquiry Handling processes can operate effectively. Examples are information on how to respond to current billing issues being raised by customers, systems needed to create customer bill inquiry and complaint reports, requests for provisioning of additional resources where it has been identified that current levels will impact on timely billing complaint handling.

These processes are responsible for managing billing policies associated with customer billing dispute settlements.

These processes undertake trend analysis on billing queries and complaints.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.1.14.1 Level 4: Determine Bill Inquiry Handling Capability (1.1.1.1.15.1) – Mapping Details

Process Identifier: 1.1.1.1.15.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.15.1 - Determine Bill Inquiry Handling Capability**
Brief Description Make sure that there is capability so that the Bill Inquiry Handling processes can operate effectively. **Extended Description** The purpose of the Determine Bill Inquiry Handling Capability processes is to make sure that there is capability (for example, information, systems and resources) so that the Bill Inquiry Handling processes can operate effectively. Examples are information on how to respond to current billing issues being raised by customers, systems needed to create customer bill inquiry and complaint reports, requests for provisioning of additional resources where it has been identified that current levels will impact on timely billing complaint handling. **Explanatory** Examples are information on how to respond to current billing issues being raised by customers, systems needed to create customer bill inquiry and complaint reports, requests for provisioning of additional resources where it has been identified that current levels will impact on timely billing complaint handling. **Mandatory** *Note: Text highlighted in turquoise are for example purposes only and not applicable.* The purpose of the Determine Bill Inquiry Handling Capability processes is to make sure that there is capability (for example, information, systems and resources) so that the Bill Inquiry Handling processes can operate effectively. **AM** *Note: Singleview provides configurable functionality for supporting bill inquiry processes including disputes and adjustments.* [BOO] 3.3.8 Billing Inquiry, Dispute & Adjustment Management (entire section) [BOD] eTOM 1.1.1 Customer Relationship Management -> eTOM 1.1.1.12 Bill Enquiry Handling

(entire section)

Optional

Not used for this process element

Interactions

Not used for this process element

4.1.14.2 Level 4: Manage Billing Policy (1.1.1.1.15.2) – Mapping Details

Process Identifier: 1.1.1.1.15.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.1.15.2 - Manage Billing Policy
Brief Description Manage billing policies associated with customer billing dispute settlements. **Extended Description** The purpose of Manage Billing Policy process is to manage billing policies associated with customer billing dispute settlements. The process is responsible for creating a new billing policy, deleting and modifying an existing billing policy. It is also responsible for associating the specific customer billing dispute to suitable billing policy to guide SP to settle billing dispute. **Explanatory** Not used for this process element **Mandatory** The purpose of Manage Billing Policy process is to manage billing policies associated with customer billing dispute settlements. The process is responsible for creating a new billing policy, deleting and modifying an existing billing policy. It is also responsible for associating the specific customer billing dispute to suitable billing policy to guide SP to settle billing dispute. **AM** *Note: Whilst this is primarily a Business Analysis activity the resultant changes in policy and process must be reflected in the supporting systems. Singleview supports this via a set of configuration tools to define/amend screen flow and invocation of business rules.* **[CMC] Part 9 Issues -> Issue Configuration -> Billing Enquiry (entire section)** **[CMC] Part 9 Issues -> Issue Configuration -> Invoice Dispute (entire section)**

Optional Not used for this process element   **Interactions** Not used for this process element

4.1.14.3 Level 4: Analyze Bill Inquiry Trend (1.1.1.1.15.3) – Mapping Details

Process Identifier: 1.1.1.1.15.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.1.15.3 - Analyze Bill Inquiry Trend**
Brief Description Undertake trend analysis on billing queries and complaints. **Extended Description** The purpose of Analyze Bill Inquiry Trend process is to analyse trend on billing queries and complaints. The analysis results may be utilized to guide SP to develop or adjust billing policy. **Explanatory** Not used for this process element **Mandatory** The purpose of Analyze Bill Inquiry Trend process is to analyse trend on billing queries and complaints. **AM** *Note: Singleview is the master repository of all information relating to bill inquiry/disputes. This information can be analysed locally or extracted to BI for analysis there.* **[BOO] 3.3.13 Case Management (entire section)** **[BOD] Singleview reports (XML)**

Total Disputes	Provides a summary of outstanding disputes. **Security** All disputes are included in this report, regardless of security groups. **Remarks** This report assists in understanding the magnitude and type of outstanding disputes, and retrieves all disputes open at the current date-time.

[BOO] 3.8 Integration Infrastructure (entire section)

Optional

Not used for this process element

Interactions

The analysis results may be utilized to guide SP to develop or adjust billing policy.

4.1.14.4 Level 3: Support Bill Enquiry Handling (1.1.1.1.15) – TM Forum Assessor Scores

1.1.1.1.15 - Support Bill Enquiry Handling	
Grouping of Implied Tasks	**Score**
Determine Bill Inquiry Handling Capability (1.1.1.1.15.1)	*100%*
Manage Billing Policy (1.1.1.1.15.2)	*50%*
Analyze Bill Inquiry Trend (1.1.1.1.15.3)	*100%*
Total score for Parent Level 3 Process	**250/300 = 83.3% = 4.7**

4.1.15 Supporting Evidence References (Works Cited)

AO	Singleview 8.0 Architecture Overview, documentation for release 8.00.04, d-sv-aov.zip
BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
BOO	CSG Baseline Offering Overview, Baseline Offering Overview.pdf
CBO	Overview for Singleview Convergent Billing v8.00, d-cb-ovr.zip
CMC	Configuration Guide for Singleview Customer Management v8.00, d-cm-cfg.zip
CWB	Configuration Workbench Tools Guide for Singleview Process Engine v8.00, d-pe-cwt.zip
PD	Singleview Version 8.00 PRODUCT DESCRIPTION, Singleview_v8_00_product_description-final.pdf
SAG	System Administration Guide for Singleview v8.00, d-sv-sag.zip

4.1.16 Level 2: CRM Support & Readiness (1.1.1.1) – Conformance Results

Table 4.1 Level 2: CRM Support & Readiness (1.1.1.1) – Conformance Results

1.1.1.1.1 - CRM Support & Readiness	
Level 3 Processes	**Score**
1.1.1.1.1 - Support Customer Interface Management	5
1.1.1.1.2 - Support Order Handling	4
1.1.1.1.3 - Support Problem Handling	4
1.1.1.1.5 - Support Retention & Loyalty	5
1.1.1.1.6 - Support Marketing Fulfillment	0
1.1.1.1.7 - Support Selling	0
1.1.1.1.8 - Support Customer QoS/SLA	0
1.1.1.1.9 - Manage Campaign	0
1.1.1.1.10 - Manage Customer Inventory	4.8
1.1.1.1.11 - Manage Product Offering Inventory	4.8
1.1.1.1.12 - Manage Sales Inventory	0
1.1.1.1.13 - Support Bill Invoice Management	5
1.1.1.1.14 - Support Bill Payments & Receivables Management	4.3
1.1.1.1.15 - Support Bill Inquiry Handling	4.7

4.2 Level 2: Customer Interface Management (1.1.1.2)

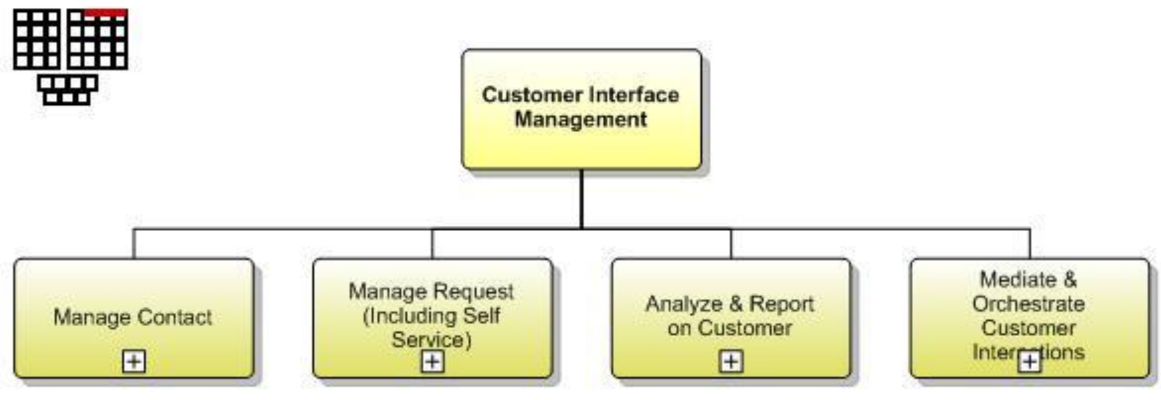


Figure 4.16 Customer Interface Management decomposition into level 3 processes

Process Identifier: 1.1.1.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Managing all interfaces between the enterprise and potential and existing customers.

Extended Description

Customer Interface Management processes are responsible for managing all interfaces between the enterprise and potential and existing customers. They deal with contact management, understanding the reason for contact, directing customer contacts to the appropriate process, contact closure, exception management, contact results analysis and reporting. CRM contact may be related to one or several of Service Fulfillment, Service Assurance (service quality management and trouble or problem management) and Billing related customer enquiries or contacts.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.2.1 Level 3: Manage Contact (1.1.1.2.1) – Mapping Details

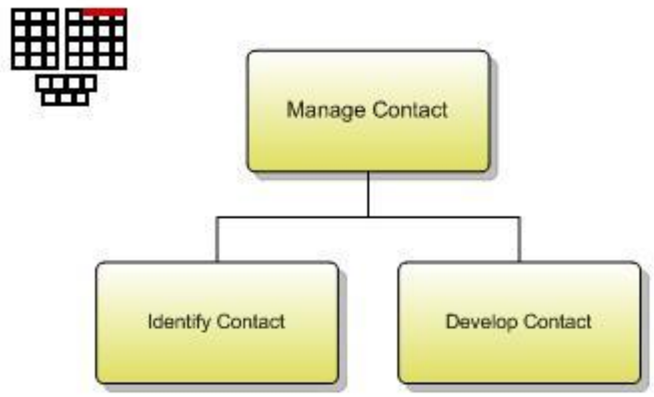


Figure 4.17 Manage Contact decomposition into level 4 processes

Process Identifier: 1.1.1.2.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Manage all contacts between potential or existing customers and the enterprise

Extended Description

The purpose of this process is to manage all contacts between potential or existing customers and the enterprise. It deals with the identification of the contact, its development, enhancement and update

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.2.1.1 Level 4: Identify Contact (1.1.1.2.1.1) – Mapping Details

Process Identifier: 1.1.1.2.1.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.2.1.1– Identify Contact
Brief Description deals with the identification of the contact **Extended Description** Not used for this process element **Explanatory** This could be an individual as a consumer, or part of a business organization (small, medium or corporate) as defined by customer segmentation prevalent in the organization **Mandatory** Verify the individual / entity (organization) responsible for making contact **AM** *Note: manual activities in this process are related to performing the actual dialog with the customer to verify the information stored within the system with this presented by the party in question* **[BOD] eTOM 1.1.1.2.1 – Manage Contact** **Singleview Contacts and Customers** Singleview captures information (for example, date of birth, addresses, contact numbers, and security questions) in the **Contact** view about the person who is authorised to speak on behalf of a customer account. […] Singleview's **Contact** view enables a CSR to verify a contact at the beginning of an interaction and to ensure that they are authorised to speak on behalf of the customer account.

Optional

Not used for this process element

Interactions

Not used for this process element

4.2.1.2 Level 4: Develop Contact (1.1.1.2.1.2) – Mapping Details

Process Identifier: 1.1.1.2.1.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.2.1.2– Develop Contact**
Brief Description deals with development, enhancement and update of the contact **Extended Description** Not used for this process element **Explanatory** For a new customer contact, this will include capturing mandatory details which could be subject to validation. **Mandatory** Expand the detail attributes of the contact **AM** *Note: manual activities in this process are related to data entry.* **[BOD] eTOM 1.1.1.2.1 – Manage Contact** **Singleview Contacts and Customers** The CSR can access the customer details, view the customer's products, and easily navigate to open cases associated with the customer's account. Issues and orders can be added […]. [PD] 7.16.1 Business Model Menu […] *Validation Tool* The Validation Tool provides the facilities for ensuring that values entered into Customer Management for a specified field or group of fields are valid (that is, the data meets previously specified conditions). Messages can also be specified for display to the user when entered data does not meet these conditions. [PD] 6.1.1 Contact

[…]An unlimited number of contact types can be defined to suit the organisation's business, and the screen layouts used by the CSR can be configured to reflect the information that is required for each different type of contact. For example, the organisation may want to capture business and personal email addresses for a business contact, but not for a residential contact.

Optional

Not used for this process element

Interactions

Not used for this process element

4.2.1.3 Level 3: Manage Contact (1.1.1.2.1) – TM Forum Assessor Scores

1.1.1.2.1 Manage Contact	
Grouping of Implied Tasks	**Score**
Identify Contact (1.1.1.2.1.1)	*100%*
Develop Contact (1.1.1.2.1.2)	*100%*
Total score for Parent Level 3 Process	**200/200 = 100% = 5**

4.2.2 Level 3: Manage Request (Including Self Service) (1.1.1.2.2) – Mapping Details

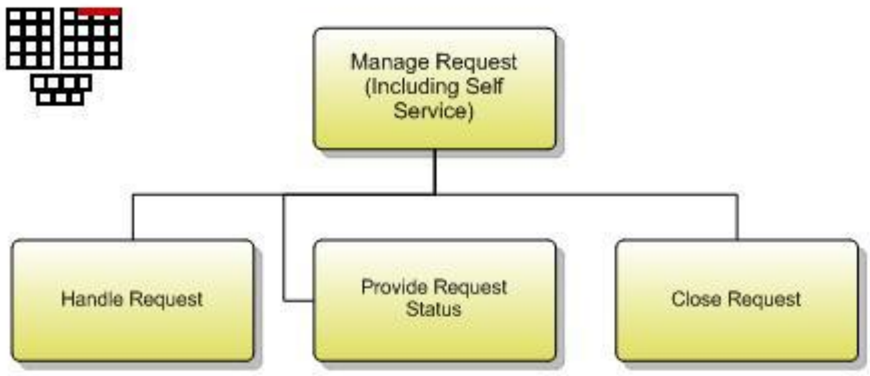


Figure 4.18 Manage Request (Including Self Service) decomposition into level 4 processes

Process Identifier: 1.1.1.2.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Manage all requests (inbound and outbound) made by potential and existing customers

Extended Description

The purpose of this process is to manage all requests (inbound and outbound) made by potential and existing customers. It receives the request and either enables its originator to automatically fulfill it, or identifies and activates the opportune process to accomplish the request; it manages the status of the request and is able to provide status information at any moment in which the request is active; it formally closes the request when all related activities have been terminated.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.2.2.1 Level 4: Handle Request (1.1.1.2.2.1) – Mapping Details

Process Identifier: 1.1.1.2.2.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.2.2.1– Handle Request**
Brief Description receives the request and either enables its originator to automatically fulfill it, or identifies and activates the opportune process to accomplish the request **Extended Description** Not used for this process element **Explanatory** Handle a request to make changes This could be a request to change to enable customer/ subscriber, to start or stop making use of specific products and services **Mandatory** receives the request and either enables its originator to automatically fulfill it, or identifies and activates the opportune process to accomplish the request. Determine type of stakeholder request **AM** *Note: type of the stakeholder request is determined manually* **[PD] 6.1.2 Case** When a contact communicates with the organisation, a new case is created. A case records the details of the communication, which may include a number of different items including sales orders, payments, or inquiries raised. These items are referred to as issues […] **[BOD] eTOM 1.1.1.2.2 – Manage Request** **Singleview Issues** An issue is a record of a topic raised by a customer during an interaction that requires some form of resolution. This may occur during a call or as part of a follow-up activity. Each issue must be associated with a case, and multiple issues can be associated with a single case. Issues are classified by **type**, with the following advantages:

- It clearly states the reason for the customer interaction.
- Different screen layouts are displayed to the CSR based on the issue type, which simplifies their task in gathering appropriate information and finding a resolution.

Singleview Actions

Tasks carried out to resolve the issue for the customer are called actions. Actions manage workflows, […]. Actions are defined to support an organisation's business processes, which may involve:

- […]Assigning actions to the relevant division[…]

Optional

Not used for this process element

Interactions

where relevant, identifies and activates the opportune process to accomplish the request

4.2.2.2 Level 4: Provide Request Status (1.1.1.2.2.2) – Mapping Details

Process Identifier: 1.1.1.2.2.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.2.2.2 – Provide Request Status**
Brief Description manages the status of the request and is able to provide status information at any moment in which the request is active **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** manages the status of the request and is able to provide status information at any moment in which the request is active. Track business events using the request status; each of which is governed by rules, followed by a set of actions to reach the next status **A** **[BOD] eTOM 1.1.1.2.1 – Manage Contact** ***<u>Singleview Cases:</u>*** […]If the customer calls back later, a CSR can retrieve the case and have immediate access to all the issues previously raised, and visibility of their current status. **[BOD] eTOM 1.1.1.2.2 – Manage Request** ***<u>Singleview Actions:</u>*** […]Actions are defined to support the enterprises' business processes, which may involve: • […] escalating incomplete actions to ensure the due date is met, and • notifying supervisors of open action status.

Optional

Not used for this process element

Interactions

Not used for this process element

4.2.2.3 Level 4: Close Request (1.1.1.2.2.3) – Mapping Details

Process Identifier: 1.1.1.2.2.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.2.2.3 – Close Request**
Brief Description formally closes the request when all related activities have been terminated **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** formally closes the request when all related activities have been terminated **AM** *Note: Manual support mark covers situations when a CSR updates the status of an issue/action.* **[BOD] eTOM 1.1.1.2.1 – Manage Contact** ***Singleview Cases:*** **[…]** A case remains open until all issues/actions in the case are resolved and/or all sales orders associated with the case have been processed. **Optional** Not used for this process element **Interactions** Not used for this process element

4.2.2.4 Level 3: Manage Request (Including Self Service) (1.1.1.2.2) – TM Forum Assessor Scores

1.1.1.2.2 - Manage Request (Including Self Service)	
Grouping of Implied Tasks	**Score**
Handle Request (1.1.1.2.2.1)	*100%*
Provide Request Status (1.1.1.2.2.2)	*100%*
Close Request (1.1.1.2.2.3)	*100%*
Total score for Parent Level 3 Process	**100% = 5**

4.2.3 Level 3: Analyze & Report on Customer (1.1.1.2.3) – Mapping Details

Analyze & Report on Customer decomposition into level 4 processes

Process Identifier: 1.1.1.2.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Perform all necessary analysis on closed requests and on customer contacts and generate related reports

Extended Description

The purpose of this process is to perform all necessary analysis on closed (completed or unfulfilled) requests and on customer contacts and it generates related reports, to be utilized for process improvement activities, proactive problems prevention, up-sell opportunities definition, etc.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.2.3.1 Level 4: Analyze Customer Requests & Contacts (1.1.1.2.3.1) – Mapping Details

Process Identifier: 1.1.1.2.3.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.2.3.1 – Analyze Customer Requests & Contacts**
Brief Description perform all necessary analysis on closed (completed or unfulfilled) requests and on customer contacts **Extended Description** Not used for this process element **Explanatory** Not used for this process element. **Mandatory** perform all necessary analysis on closed (completed or unfulfilled) requests and on customer contacts **AM** *Note 1: manual activity is the running of ad-hoc reports, including the specification of criteria.* *Note 2: All customer interaction is recorded in cases for which there is a set of standard reports. The same information can also be extracted to BI for further analysis.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **[BOD] eTOM 1.1.1.2.3 – Analyze and Report on Customer** Singleview case information is an excellent source for downstream analysis on customer communications, and can be used for generating reports [...] Singleview provides functions to support this type of analysis, including complex searching and core reports that are delivered as standard.

[…]

Singleview has the following standard customer care reports:

- CM Issue Type by Customer Type […]
- CM Issue trend […]
- CM Case by User

Optional

Not used for this process element

Interactions

Not used for this process element

4.2.3.2 Level 4: Report Customer Requests & Contacts (1.1.1.2.3.2) – Mapping Details

Process Identifier: 1.1.1.2.3.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.2.3.2 - Report Customer Requests & Contacts**
Brief Description generates related reports, to be utilized for process improvement activities, proactive problems prevention, up-sell opportunities definition, etc. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** generates related reports, to be utilized for process improvement activities, proactive problems prevention, up-sell opportunities definition, etc. **AM** *Note 1: manual activity is the running of ad-hoc reports, including the specification of criteria.* *Note 2: All customer interaction is recorded in cases for which there is a set of standard reports. The same information can also be extracted to BI for further analysis.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **[BOD] eTOM 1.1.1.2.3 – Analyze and Report on Customer** Singleview provides functions to support this type of analysis, including complex searching and core reports that are delivered as standard. [...]**Complex Searches** This complex search function allows the user to build a complex search by selecting fields, operators, and values. […]

Search results can be exported directly to Microsoft Excel or other applications that accept CSV files, enabling further manipulation and graphical analysis. Searches can be saved and run as often as required by selecting the saved search feature.

Reports

Singleview includes a set of core reports covering the customer lifecycle.[…] Reports can be scheduled to run at a specified time, or on demand. If scheduled, one or more tasks are created (depending on the schedule parameters), and the report is then generated at the scheduled time.

Optional

Not used for this process element

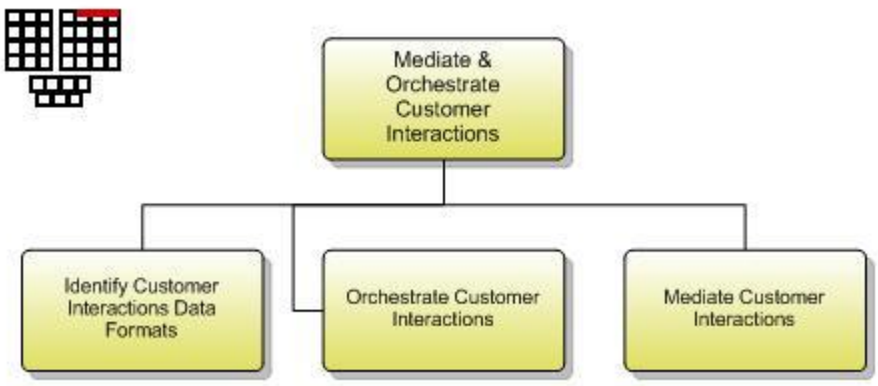
Interactions

Not used for this process element

4.2.3.3 Level 3: Analyze & Report on Customer (1.1.1.2.3) – TM Forum Assessor Scores

1.1.1.2.3 Analyze & Report on Customer	
Grouping of Implied Tasks	**Score**
Analyze Customer Requests & Contacts (1.1.1.2.3.1)	*100%*
Report Customer Requests & Contacts (1.1.1.2.3.2)	*100%*
Total score for Parent Level 3 Process	**200/200 = 100% = 5**

4.2.4 Level 3: Mediate & Orchestrate Customer Interactions (1.1.1.2.4) – Mapping Details



Mediate & Orchestrate Customer Interactions decomposition into level 4 processes

Process Identifier: 1.1.1.2.4

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that transaction message structure and interactions conform to agreed, externally defined standards used by the enterprise and its customers

Extended Description

The purpose of the Mediate & Orchestrate Customer Interactions is to ensure that transaction message structure and interactions conform to agreed, externally defined standards used by the enterprise and its customers. Increasingly transactions with external parties (e.g. customers using RosettaNet or Web Services standards) will need to conform to message and data formats defined by third parties or third party organizations. Based on the specific transaction type and involved external party, this conformance will require the identification of the necessary data formats to be sent externally, and conversion of externally received messages into the required internal enterprise formats. In addition, interactions with external parties may require that messages and transactions need to be undertaken with defined and agreed orchestration for message exchange. The actual agreement between the parties to use specific interaction standards is part of the Support Customer Interface Management and Support Selling L3s.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.2.4.1 Level 4: Identify Customer Interactions Data Formats (1.1.1.2.4.1) – Mapping Details

Process Identifier: 1.1.1.2.4.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.2.4.1 – Identify Customer Interactions Data Formats**
Brief Description Performs identification of the necessary data formats to be sent externally. Increasingly transactions with external parties (e.g. customers using RosettaNet or Web Services standards) will need to conform to message and data formats defined by third parties or third party organizations. The actual agreement between the parties to use specific interaction standards is part of the Support Customer Interface Management and Support Selling L3s. **Extended Description** Not used for this process element **Explanatory** Increasingly transactions with external parties (e.g. customers using RosettaNet or Web Services standards) will need to conform to message and data formats defined by third parties or third party organizations. **Mandatory** Performs identification of the necessary data formats to be sent externally. **M** *Note: the nature of this process requires analysis performed by enterprise architects with expert knowledge of enterprise data models. Singleview support this process by exposing SID-conformant interfaces.* **[BOD] eTOM 1.1.1.2.4 – Mediate and Orchestrate Customer Interactions** […] Singleview external definitions are used to map the data models of external systems to the Singleview data model. External definitions define the structure of fields that must be supplied to or from a remote system, and how they map to Singleview objects and their fields.

Optional

Not used for this process element

Interactions

The actual agreement between the parties to use specific interaction standards is part of the Support Customer Interface Management and Support Selling L3s.

4.2.4.2 Level 4: Orchestrate Customer Interactions (1.1.1.2.4.2) – Mapping Details

Process Identifier: 1.1.1.2.4.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.2.4.2 - Orchestrate Customer Interactions**
Brief Description Where required, orchestrates interactions with external parties so that messages and transactions are undertaken with defined and agreed orchestration for message **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Where required, orchestrates interactions with external parties **A** **[BOD] eTOM 1.1.1.2.4 – Mediate and Orchestrate Customer Interactions** **[…]** Singleview interacts with external systems using web services and external definitions config to record the agreed management/handling. **[…]**The Singleview Web Services Adapter, a Java adapter for handling outbound and inbound SOAP requests, provides access to all Singleview functions, including the composite business functions available for OSS integration. **[PD] 6.2 Workflow (entire section)** **Optional** Not used for this process element **Interactions** messages and transactions are undertaken with defined and agreed orchestration for message exchange.

4.2.4.3 Level 4: Mediate Customer Interactions (1.1.1.2.4.3) – Mapping Details

Process Identifier: 1.1.1.2.4.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.2.4.3 - Mediate Customer Interactions**
Brief Description Manages conversion of externally received messages into the required internal enterprise formats, based on the specific transaction type and involved external party. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Manages conversion of externally received messages into the required internal enterprise formats, based on the specific transaction type and involved external party. **AM** *Note: the nature of this process requires analysis performed by enterprise architects with expert knowledge of enterprise data models. Singleview support this process by exposing SID-conformant interfaces.* **[BOD] eTOM 1.1.1.2.4 – Mediate and Orchestrate Customer Interactions** Singleview external definitions are used to map the data models of external systems to the Singleview data model. External definitions define the structure of fields that must be supplied to or from a remote system, and how they map to Singleview objects and their fields **Optional** Not used for this process element **Interactions** Not used for this process element

4.2.4.4 Level 3: Mediate & Orchestrate Customer Interactions (1.1.1.2.4) – TM Forum Assessor Scores

1.1.1.2.4 Mediate & Orchestrate Customer Interactions	
Grouping of Implied Tasks	**Score**
Identify Customer Interactions Data Formats (1.1.1.2.4.1)	*100%*
Orchestrate Customer Interactions (1.1.1.2.4.2)	*100%*
Mediate Customer Interactions (1.1.1.2.4.3)	*100%*
Total score for Parent Level 3 Process	**300/300 = 100% = 5**

4.2.5 Supporting Evidence References (Works Cited)

BOD BSS Baseline Offering for Mobile Operators v1.0, bod.zip

BOO BSS Baseline Offering Overview, Baseline Offering Overview.pdf

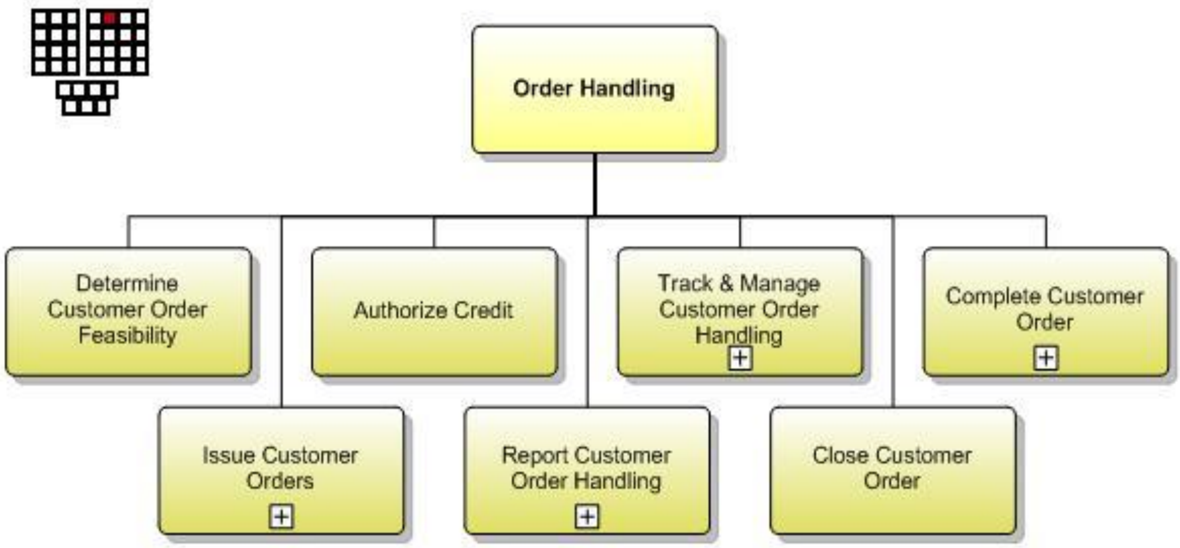
PD Singleview Version 8.00 PRODUCT DESCRIPTION, Singleview_v8_00_product_description-final.pdf

4.2.6 Level 2: Customer Interface Management (1.1.1.2) – Conformance Results

Table 4.2 Level 2: Customer Interface Management (1.1.1.2) – Conformance Results

1.1.1.2 - Customer Interface Management	
Level 3 Processes	**Score**
1.1.1.2.1 - Manage Contact	5
1.1.1.2.2 - Manage Request (Including Self Service)	5
1.1.1.2.3 - Analyze & Report on Customer	5
1.1.1.2.4 - Mediate & Orchestrate Customer Interactions	5

4.3 L2: Order Handling (1.1.1.5)



Order Handling decomposition into level 3 processes

Process Identifier: 1.1.1.5

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Responsible for accepting and issuing orders.

Extended Description

Order Handling processes are responsible for accepting and issuing orders. They deal with pre-order feasibility determination, credit authorization, order issuance, order status and tracking, customer update on order activities and customer notification on order completion. Responsibilities of the Order Handling processes include, but are not limited to:

· Issuing new customer orders, modifying open customer orders or canceling open customer orders;

· Verifying whether specific non-standard offerings sought by customers are feasible and supportable;

· Checking the credit worthiness of customers as part of the customer order process;

· Testing the completed offering to ensure it is working correctly;

· Updating of the Customer Inventory Database to reflect that the specific product offering has been allocated, modified or cancelled;

· Assigning and tracking customer provisioning activities;

· Managing customer provisioning jeopardy conditions; and

· Reporting progress on customer orders to customer and other processes.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.1 Level 3: Determine Customer Order Feasibility (1.1.1.5.1) – Mapping Details

Process Identifier: 1.1.1.5.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

4.3.1.1 Level 3: Determine Customer Order Feasibility (1.1.1.5.1) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

Level 3 PROCESS MAPPING DETAILS 1.1.1.5.1 – Determine Customer Order Feasibility
Brief Description Check the availability and/or the feasibility of providing and supporting standard and customized product offerings where specified to a customer. **Extended Description** The purpose of the Determine Customer Order Feasibility process is to check the availability and/or the feasibility of providing and supporting standard and customized product offerings where specified as part of the standard product offering process flow, to a customer. **AM** *Note: Singleview has a multi-step Sales Order Capture Process that filters offers based upon customer attributes and has integration hooks for interaction with credit vetting and serviceability services.* *The process is data driven off the product catalogue defining hierarchical offers and what elements of the hierarchy are mandatory/optional/compatible/mutually exclusive.* *The latter stages of the process support personalisation of the order.* These processes invoke requests to SM&O provisioning processes to determine the availability and supportability of product offerings to a customer. **AM** *Note: Singleview can invoke External Applications in this case typically an OSS application to validate serviceability at an address or geographic location. Web based CSR GUI also supports hyperlinks, for example to bring the CSR to a Coverage Map.* These processes are also responsible for determining whether the offering can be supported by other CRM processes. *Note: Singleview ensures that the order can be supported by downstream process elements – Issue*

Customer Orders: by applying filters and compatibility criteria ensures that only appropriate orders are issued; Issue Service Orders: by verifying serviceability ensures that activation is feasible; Issue Resource Orders: by reserving resources ensures that fulfillment is feasible; billing (availability of billing cycle, support of desired bill media); Retention & Loyalty (e.g. enforcing terms and conditions) etc.

[BOD] eTOM 1.1.1.5 Order Handling -> eTOM 1.1.1.5.1 – Determine Customer Order Feasibility

Singleview has the following functionality:

- Checks eligibility of an order against the customer inventory database (for example, a prerequisite for ordering a new product may be holding a specific existing product).

- When the customer management presentation layer is used, CSRs can quickly select products for a customer order. Product filters are available to enable filtering of product information, and provide a list of potential products for customers.

A customer entity must exist before the product order process can commence. The first default field for filtering available products is customer type, enabling the CSR to select only product options for that customer segment.

- If another presentation layer or channel is used (for example, web self-care), this functionality is supported using integration on the same API.

- When a base product is selected, it can be added to the order by clicking on the product, then Step 2 Offer in the grid. Mandatory components of the selected product are automatically added to the order. Optional product components can then be added to the order by selecting the required items, including services, companion products, and/or facility groups.

- Checks availability of resources to fulfill the order (for example, SIM cards and MSISDNs). By default, CSRs can only select inventory items from the Singleview internal inventory system.

- Equipment reservation is possible when a customer requests an equipment item but is not ready to activate the associated service. Reserving equipment prevents it from being assigned to other sales orders, unless a booking expiry date has been reached. If the order is not completed immediately, the inventory item does not need to be selected again when the order is resumed.

- Order line items may consist of the following:

  - Serialised tangible items such as mobile handsets (which have an IMEI as a serial number) or modems (which may have an MAC as a serial number)

  - Non-serialised physical items (for example, phone accessories and cables)

  - Serialised virtual/intangible items (for example, phone numbers (MSISDN, IMSI))

  - Non-serialised intangible items such as rate plans or pricing options (for example, caller ID, roaming capability)

Orders may include items from one or all of these categories, and Singleview checks the inventory for availability. For serialised items, the order usually needs to pick a specific item with a specific serial number (for example, a phone number or SIM card).

- Enforcement of terms and conditions (for example, three months to run on a contract).

[AO] Convergent Billing Data Model -> Product Data Model ->Figure 24 Convergent Billing Product Offer Data Model

[CBO] Administration -> Transaction Engine (TRE) – Figure 21

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.1.2 Level 3: Determine Customer Order Feasibility (1.1.1.5.1) – TM Forum Assessor Scores

1.1.1.5.1 – Determine Customer Order Feasibility	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.3.2 Level 3: Authorize Credit (1.1.1.5.2) – Mapping Details

Process Identifier: 1.1.1.5.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

4.3.2.1 Level 3: Authorize Credit (1.1.1.5.2) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

Level 3 PROCESS MAPPING DETAILS **1.1.1.5.2 – Authorize Credit**
Brief Description Assess a customer's credit worthiness in support of managing customer risk and company exposure to bad debt **Extended Description** The purpose of the Authorize Credit processes is to assess a customer's credit worthiness in support of managing customer risk and company exposure to bad debt. This process is responsible for initiating customer credit checks and for authorizing credit and credit terms in accordance with established enterprise risk and policy guidelines **AM** *Note: Singleview can both use locally held information and/or invoke External Applications in this case typically an internal blacklist/whitelist or an application hosted by a Credit Agency, for example Decision Navigator from Equifax. Result of vetting is recorded against prospect/customer as a Credit Class which is then actioned by downstream steps in Sales Order Capture.* **[BOD] eTOM 1.1.1.5 -> eTOM 1.1.1.5.2 – Authorize Credit** For prospects, the process is usually limited to checking if there is any record of the prospect, and the assessment of credit worthiness is delegated to a third party credit bureau using real-time integration. When the customer details are entered, a request is automatically triggered to a credit agency system, and the associated credit check is completed before an order is processed. For existing customers, the available credit history can often be sufficient in assessing credit worthiness, so third party input is not required. For example, a customer who has settled their first three invoices in full and on time can purchase international roaming without being required to provide a security payment. Singleview is the master repository of receivables and collections information and is well placed to implement required credit management policy. **[CBO] Administration -> Transaction Engine (TRE) – Figure 21**

Explanatory

Reserved for future use.

MandatoryReserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.2.2 Level 3: Authorize Credit (1.1.1.5.2) – TM Forum Assessor Scores

1.1.1.5.2 – Authorize Credit	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.3.3 Level 3: Track & Manage Customer Order Handling (1.1.1.5.4) – Mapping Details

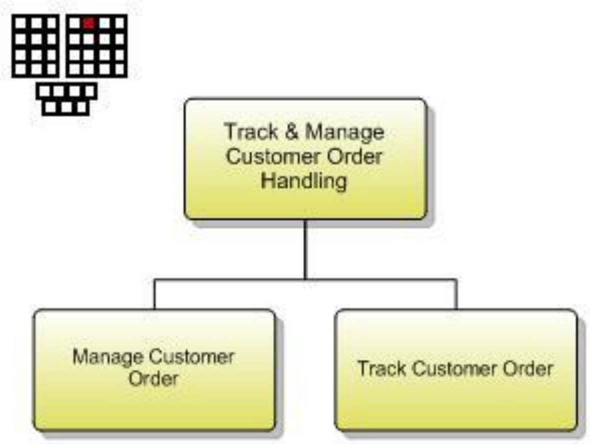


Figure 4.19 Track & Manage Customer Order Handling decomposition into level 4 processes

Process Identifier: 1.1.1.5.4

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure customer provisioning activities are assigned, managed and tracked efficiently to meet the agreed committed availability date

Extended Description

The objective of the Track & Manage Customer Order Handling processes is to ensure customer provisioning activities are assigned, managed and tracked efficiently to meet the agreed committed availability date.

Responsibilities of these processes include, but are not limited to:

· Scheduling, assigning and coordinating customer provisioning related activities;

· Generating the respective service order creation request(s) to Issue Service Orders based on specific customer orders;

· Escalating status of customer orders in accordance with local policy;

· Undertaking necessary tracking of the execution process;

· Adding additional information to an existing customer order;

· Modifying information in an existing customer order;

· Modifying the customer order status;

· Canceling a customer order when the initiating sales request is cancelled;

· Monitoring the jeopardy status of customer orders, and escalating customer orders as necessary; and

· Indicating completion of a customer order by modifying the customer order status.

Note that some specific product components may be delivered directly by suppliers/partners. In these cases the Track & Manage Customer Order Handling process is responsible for initiating requests, through S/P Requisition Management for the delivery by the supplier/partner of the specific product components.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.3.1 Level 4: Manage Customer Order (1.1.1.5.4.1) – Mapping Details

Process Identifier: 1.1.1.5.4.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.5.4.1 – Manage Customer Order**
Brief Description Schedule, assign and coordinate customer provisioning related activities. **AM** *Note: A Case is associated with every Sales Order and the associated workflow defines the actions (both automated and manual) that need to be carried out. Additional actions can be manually added to the Case.* Generate the respective service order creation request(s) to Issue Service Orders based on specific customer orders. **A** *Note: Derived Attributes are used to hold the information used by actions in the workflow to decompose Customer Order into Service Orders which are then issued using Singleview capability to invoke external applications and recorded in the workflow.* Escalate status of customer orders in accordance with local policy. **A** *Note: Standard Singleview case management functionality allows definition of monitoring and escalation policy for workflows.* Add additional information to an existing customer order. Modify information in an existing customer order. Cancel a customer order when the initiating sales request is cancelled. **AM** *Note: An order may be amended or cancelled up to the point where fulfillment is underway. Beyond this point the resultant product instances must be manipulated.* If some specific product components are delivered directly by suppliers/partners, initiate requests, through S/P Requisition Management, for the delivery by the supplier/partner of the specific product components. **AM** *Note: An Action in the Sales Order Case workflow can relate to a supplier/partner and can be either automated where Singleview invokes an application hosted by a Supplier/Partner or action can be assigned to a specific workgroup for manual handling.* **[BOD] eTOM 1.1.1.5 Order Handling -> eTOM 1.1.1.5.4 – Track and Manage Customer Order Handling** Singleview performs the following tasks: • Schedules and coordinates the required customer provisioning-related activities.

- Generates the service order creation request(s).
- Issues service orders based on the customer order.
- Captures and stores order details, regardless of the originating sales channel.

If the customer wants to add/remove products, services, or features, the sales order can be updated after it is created, and before it is submitted to fulfilment and billing, or cancelled. If the sales order has a status of Accepted or Cancelled, it cannot be updated using this procedure. A product update must be done.

Sales orders can be cancelled if do not have an Accepted status.

[CBO] Administration -> Transaction Engine (TRE) Figure 21

[BOO] 3.3.13 Case Management (entire section)

[AO] Convergent Billing Data Model -> Convergent Billing Fundamentals -> Customisation of Components -> Derived Attributes (entire section)

Extended Description

Not used for this process element.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.3.2 Level 4: Track Customer Order (1.1.1.5.4.2) – Mapping Details

Process Identifier: 1.1.1.5.4.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.5.4.2 - Track Customer Order
Brief Description Undertake necessary tracking of the execution process. Modify the customer order status. Monitor the jeopardy status of customer orders, escalating customer orders as necessary. **A** *Note: In Singleview, it is the status of the case and its issues and actions that is modified and not the status of the order.* **[BOD] eTOM 1.1.1.5 Order Handling -> eTOM 1.1.1.5.4 – Track and Manage Customer Order Handling** Customer orders are raised in Singleview cases, so the following case management functionality of assigning workgroups, and notifying and escalating applies: • The execution process is tracked. • The customer can be updated triggering any of the customer interaction channels (for example, sending an email or SMS to keep the customer informed of progress). When submitting an order, an action can be created to track the order to completion. Singleview can then close this action when the order is processed. The escalation of an action can notify a work group if the order is not completed within a reasonable amount of time. This enables a CSR to check the order and fix any problems. **[BOO] 3.3.13 Case Management (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory**

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.3.3 Level 3: Track & Manage Customer Order Handling (1.1.1.5.4) – TM Forum Assessor Scores

1.1.1.5.4 - Track & Manage Customer Order Handling	
Grouping of Implied Tasks	**Score**
Manage Customer Order (1.1.1.5.4.1)	*100%*
Track Customer Order (1.1.1.5.4.2)	*100%*
Total score for Parent Level 3 Process	**200/200 = 100% = 5**

4.3.4 Level 3: Complete Customer Order (1.1.1.5.5) – Mapping Details

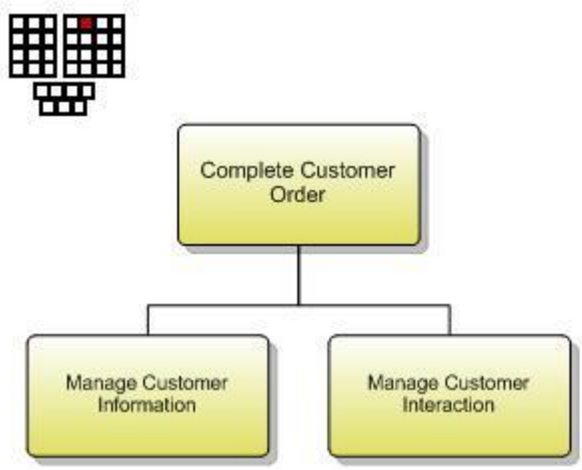


Figure 4.20 Complete Customer Order decomposition into level 4 processes

Process Identifier: 1.1.1.5.5

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Manage customer information and interactions after customer contracts or associated service orders have been finalized and during the order completion phase

Extended Description

The purpose of the Complete Customer Order processes is to manage customer information and interactions after customer contracts or associated service orders have been finalized and during the order completion phase. The customer may participate in commissioning or end-to-end testing and then satisfactory delivery. The customer is trained in the functionality and benefits of the solution. These processes are responsible for ensuring that any customer information required by other CRM processes is updated as part of the customer order completion.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.4.1 Level 4: Manage Customer Information (1.1.1.5.5.1) – Mapping Details

Process Identifier: 1.1.1.5.5.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

<table>
<tr><th>Level 4 PROCESS MAPPING DETAILS
1.1.1.5.5.1 – Manage Customer Information</th></tr>
<tr><td>Brief Description

Manage customer information after customer contracts or associated service orders have been finalized and during the order completion phase. Ensure that any customer information required by other CRM processes is updated as part of the customer order completion. AM

[BOD] eTOM 1.1.1.5 Order Handling -> eTOM 1.1.1.5.5 – Complete Customer Order

Singleview ensures that customer information required by other CRM processes is updated as part of the customer order completion. For example, billing is enabled when the order is successfully completed.
Partial orders may occur if the order entry or order management processes cause errors, preventing the order from being completed.
The following are examples:
• The customer did not have any identification available during the validation of the customer information, and the order could not be completed.
• The customer completed order entry, but no payment could be collected from the customer. This is a form of incomplete order.
• The customer failed a credit check, and the customer order for postpaid services is delayed. This is a form of stalled order.
• Provisioning of the service failed, and the order is partially completed. This is a form of stalled order.
• A package shipped to the customer is returned as an undeliverable, and the order is partially completed. This is a form of stalled order.

Incomplete orders are saved as Pending so that the order information is available if the customer returns. However, if they do not return within a specified period of time, the order may be considered invalid and should be cancelled or removed from the system.

Stalled orders usually require manual intervention to correct the error and resume the order process. CSRs are notified of stalled orders or can search for them. When the stalled order is located, the CSR can correct any mistakes and ensure the order process is resumed.

When the order is validated, it can be submitted, triggering creation of a product instance and associated components. The status of the order is updated to Accepted, and the details of the order</td></tr>
</table>

cannot be changed.

Extended Description

Not used for this process element.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.4.2 Level 4: Manage Customer Interaction (1.1.1.5.5.2) – Mapping Details

Process Identifier: 1.1.1.5.5.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.5.5.2 - Manage Customer Interaction**
Brief Description Coordinate customer participation in commissioning or end-to-end testing and satisfactory delivery. Train the customer on the functionality and benefits of the solution. **AM** *Note: Singleview case management provides the general workflow capability used to track and manage customer order handling activities. The features include assign actions, setting reminders, defining notification and escalations, as required. In this case workgroups can be created for commissioning and training teams and actions assigned to them.* **[BOO] 3.3.13 Case Management (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.3.4.3 Level 3: Complete Customer Order (1.1.1.5.5) – TM Forum Assessor Scores

1.1.1.5.5 - Complete Customer Order	
Grouping of Implied Tasks	**Score**
Manage Customer Information (1.1.1.5.5.1)	*100%*
Manage Customer Interaction (1.1.1.5.5.2)	*50%*
Total score for Parent Level 3 Process	**150/200 = 75% = 4.5**

4.3.5 Level 3: Issue Customer Orders (1.1.1.5.6) – Mapping Details

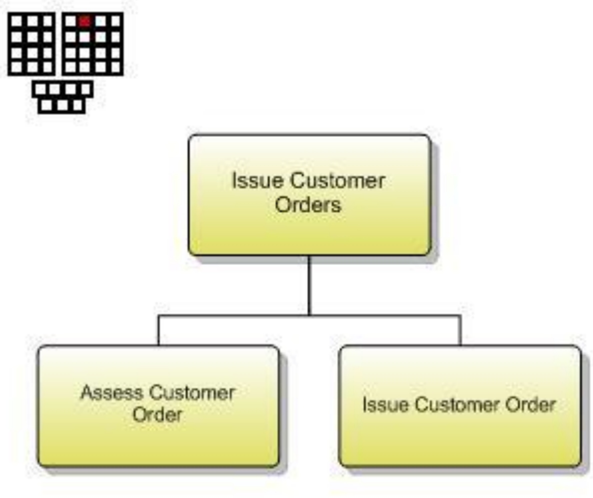


Figure 4.21 Issue Customer Orders decomposition into level 4 processes

Process Identifier: 1.1.1.5.6

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Issue correct and complete customer orders

Extended Description

The purpose of the Issue Customer Orders processes is to issue correct and complete customer orders. These processes ensure that all necessary information about the Customer Order (for example, type of product, install address, special requirements, etc.) is available. The customer orders may be required to satisfy pertinent customer requests from the Selling processes (in particular taking into account the purchase order from Negotiate Sales), may arise as a result of requests for customer provisioning activity to satisfy customer problem restoration activities, may arise to alleviate customer performance issues. These processes assess the information contained in the customer order relating to the sales request or initiating customer process request to determine the associated customer orders that need to be issued. The issued customer order may require a feasibility assessment, may require new provisioning activities, may require a change to a previously issued customer order, or may require cancellation of a previously initiated customer order. The customer order may also relate to the cancellation of previously purchased specific services. Where, the initiating request for a purchased product offering has a standard customer order this process is responsible for issuing the customer order, and for creating a record of the relevant initiating sales request and the associated customer order. Where the initiating request for a purchased product offering has special or unusual requirements, and a specific feasibility assessment has been previously undertaken, this process is responsible for issuing the customer order, and for creating a record of the relevant initiating request information and the associated customer order. Where the initiating request for a purchased product offering has special or unusual requirements, and a specific feasibility assessment has not been previously undertaken, this process marks the issued customer order as requiring special handling, and passes management for further processing to the Track & Manage Customer Order Handling process. The orchestration, if required, and tracking of the customer order progress is the responsibility of the Track & Manage Customer Order Handling

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.5.1 Level 4: Assess Customer Order (1.1.1.5.6.1) – Mapping Details

Process Identifier: 1.1.1.5.6.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

LEVEL 4 PROCESS MAPPING DETAILS **1.1.1.5.6.1 – Assess Customer Order**
Brief Description Assess the information contained in the customer order relating to the sales request or initiating customer process request to determine the associated customer orders that need to be issued. AM *Note: Actions defined within the workflow associated with the Sales Order Case can either trigger automated assessment using data held in derived attributes associated with the offers that have been ordered or manual assessment by assigning to a specific workgroup. The actual assessment of complex orders is carried out manually outside of Singleview which merely indicates that the assessment needs to take place and assigns to suitable resource to carry out.* The issued customer order may require a feasibility assessment, may require new provisioning activities, may require a change to a previously issued customer order, or may require cancellation of a previously initiated customer order. AM *Note: Derived attributes hold the information required to decompose the order and to embellish the workflow with additional issues and actions, for example service orders to issue to provisioning. Previously issued customer orders may be changed or cancelled provided that fulfillment has not commenced, in which case the resultant product instances must be modified. There is no automated identification of previously issued orders to modify/cancel, this must be determined manually.* The customer order may also relate to the cancellation of previously purchased specific services. **AM** *Note: If Service Orders have not been issued and they are in progress then the Sales Order can be cancelled. Once the Service Orders are issued then it is the resulting Product instance that is cancelled using a new Case of Type "Product Update". Likewise an "Order" to cancel an existing product instance is categorized as a Case of Type "Product Update" rather than Sales Order.* **[AO] Convergent Billing Data Model -> Convergent Billing Fundamentals -> Customisation of Components -> Derived Attributes (entire section)** **[AO] Product Data Model -> Product Definition (entire section)** **[BOO] 3.3.13 Case Management (entire section)** **[NPC]Note with Product Cancellation screen shot**

Extended Description

Not used for this process element.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.5.2 Level 4: Issue Customer Order (1.1.1.5.6.2) – Mapping Details

Process Identifier: 1.1.1.5.6.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.5.6.2 - Issue Customer Order
Brief Description Issue a customer order, creating a record of the relevant initiating sales request and the associated customer order. **AM** *Note: From the information captured during the sales order steps a case of type Sales Order is created and associated with a PE object of class Order.* Where the initiating request for a purchased product offering has special or unusual requirements, if a specific feasibility assessment has been previously undertaken, create a record of the relevant initiating request information. **AM** *Note: The Case associated with the Sales Order can be manually embellished to add new issues and actions relating to special or unusual requirements and previously undertaken actions can be recorded either as free text notes or as actions that are completed as soon as entered.* If a specific feasibility assessment has not been previously undertaken, mark the issued customer order as requiring special handling. **AM** *Note: Additional issues and actions can be added to the sales order case*. *Whilst the need for special handling can be recorded in the workflow for the sales order case there is no marking of the order object.* **[BOD] eTOM 1.1.1.2 Customer Interface Management -> eTOM 1.1.1.2.1 Manage Contact** In Singleview, whenever a contact communicates with an organisation, a new case is created. A case records details of a single interaction with a contact. A case may include a number of different items (issues) that were described during an interaction with a contact, including **sales orders**, payments, or enquiries. Follow-up interactions on previous cases can be included in a new case, or managed as additions to an original case. **[AO] Process Engine Fundamentals -> Process Engine Data Model Entities** Process Engine is based on a configurable data model that reflects business objects it can create and manipulate (for example, Cases, Issues, or Actions). The Process Engine data model can be

extended to cover data managed by other systems. Therefore, Process Engine can view and manipulate Convergent Billing entities (for example, customers, Accounts, Products, and Facility Groups).

Classes, objects, and facts are the configuration entities required for configuring Process Engine. Classes contain objects and facts. An object is an instance within a class, equivalent to a database record or row. A fact is a data item recorded about an object within a class, and is equivalent to a column in a database table

[BOD] eTOM 1.1.1.2 Customer Interface Management -> eTOM 1.1.1.2.2 Manage Request (Including Self Service)

Singleview Actions

Tasks carried out to resolve the issue for the customer are called actions. Actions manage workflows, and provide a history of events associated with a customer. They may involve something as simple as sending out information to the customer, or be a complex procedure requiring further investigation to resolve a service issue. Actions are defined to support an organisation's business processes, which may involve:

- Assigning actions to the relevant division
- Providing a duration and due date for actions to be completed
- Escalating incomplete actions to ensure the due date is met
- Notifying supervisors of open action status.

Several actions, known as action groups, can be grouped. Action groups consist of manageable sets of related activities involved in complex business processes

Extended Description

Not used for this process element

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.5.3 Level 3: Issue Customer Orders (1.1.1.5.6) – TM Forum Assessor Scores

1.1.1.5.6 - Issue Customer Orders	
Grouping of Implied Tasks	**Score**
Assess Customer Order (1.1.1.5.6.1)	*100%*
Issue Customer Order (1.1.1.5.6.2)	*100%*
Total score for Parent Level 3 Process	**200/200 = 100% = 5**

4.3.6 Level 3: Report Customer Order Handling (1.1.1.5.7) – Mapping Details

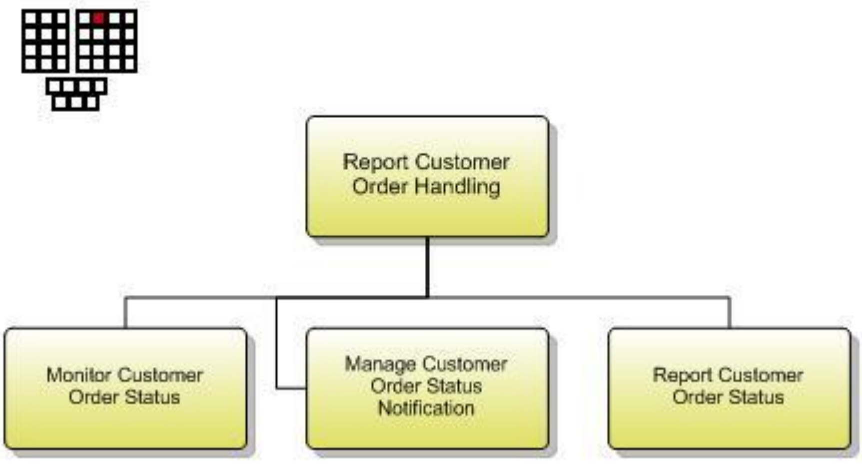


Figure 4.22 Report Customer Order Handling decomposition into level 4 processes

Process Identifier: 1.1.1.5.7

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Monitor the status of customer orders, provide notifications of any changes and provide management reports.

Extended Description

The objective of the Report Customer Order Handling processes is to monitor the status of customer orders, provide notifications of any changes and provide management reports. These processes are responsible for continuously monitoring the status of customer orders and managing notifications to processes and other parties registered to receive notifications of any status changes. Notification lists are managed and maintained by the Support Order Handling processes. These processes record, analyze and assess the customer order status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Order Handling process. These specialized summaries could be specific reports required by specific customers.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.6.1 Level 4: Monitor Customer Order Status (1.1.1.5.7.1) – Mapping Details

Process Identifier: 1.1.1.5.7.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.5.7.1 – Monitor Customer Order Status
Brief Description Continuously monitor the status of customer orders. **A** *Note: Singleview case management provides the general workflow capability used to track and manage sales order cases associated with customer orders.* **[BOD] eTOM 1.1.1.5 Order Handling -> eTOM 1.1.1.5.4 – Track and Manage Customer Order Handling** Customer orders are raised in Singleview cases, so the following case management functionality of assigning workgroups, and notifying and escalating applies: • The execution process is tracked. When submitting an order, an action can be created to track the order to completion. Singleview can then close this action when the order is processed. The escalation of an action can notify a work group if the order is not completed within a reasonable amount of time. This enables a CSR to check the order and fix any problems. **[BOO] 3.3.13 Case Management (entire section)**
Extended Description Not used for this process element.
Explanatory Reserved for future use.
Mandatory Reserved for future use.

Optional Reserved for future use.   **Interactions** Reserved for future use.

4.3.6.2 Level 4: Manage Customer Order Status Notification (1.1.1.5.7.2) – Mapping Details

Process Identifier: 1.1.1.5.7.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.5.7.2 - Manage Customer Order Status Notification**
Brief Description Manage notifications to processes and other parties registered to receive notifications of any status changes. **A** *Note: Singleview case management provides the general workflow capability used to manage notifications relating to sales order cases associated with customer orders.* **[BOD] eTOM 1.1.1.5 Order Handling -> eTOM 1.1.1.5.4 – Track and Manage Customer Order Handling** Customer orders are raised in Singleview cases, so the following case management functionality of assigning workgroups, and notifying and escalating applies: • The execution process is tracked. • The customer can be updated triggering any of the customer interaction channels (for example, sending an email or SMS to keep the customer informed of progress). When submitting an order, an action can be created to track the order to completion. Singleview can then close this action when the order is processed. The escalation of an action can notify a work group if the order is not completed within a reasonable amount of time. This enables a CSR to check the order and fix any problems. **[BOO] 3.3.13 Case Management (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.6.3 Level 4: Report Customer Order Status (1.1.1.5.7.3) – Mapping Details

Process Identifier: 1.1.1.5.7.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.5.7.3 - Report Customer Order Status**
Brief Description Record, analyze and assess the customer order status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Order Handling process, including specific reports required by specific customers. **AM** *Note: Singleview case management provides reports on:* • *Action by User* • *Action Classification Detail* • *Actions by Workgroup* • *Campaign Status* • *Case by user* • *Issue trend* • *Issue Type by Customer Type,* *which can be run for sales order cases either automatically scheduled on manually ad-hoc.* **[BOD] eTOM 1.1.1.5.7 – Report Customer Order Handling** Customer orders are raised as cases, so all case management functionality is available, including status monitoring, notifications, and reports. **[BOO] 3.3.13 Case Management (entire section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory**

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.6.4 Level 3: Report Customer Order Handling (1.1.1.5.7) – TM Forum Assessor Scores

1.1.1.5.7 - Report Customer Order Handling	
Grouping of Implied Tasks	**Score**
Monitor Customer Order Status (1.1.1.5.7.1)	*100%*
Manage Customer Order Status Notification (1.1.1.5.7.2)	*100%*
Report Customer Order Status (1.1.1.5.7.3)	*100%*
Total score for Parent Level 3 Process	**300/300 = 100% = 5**

4.3.7 Level 3: Close Customer Order (1.1.1.5.8) – Mapping Details

Process Identifier: 1.1.1.5.8

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

4.3.7.1 Level 3: Close Customer Bill Inquiry Report (1.1.1.5.8) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

Level 3 PROCESS MAPPING DETAILS 1.1.1.5.8 – Close Customer Order
Brief Description Close a customer order when the customer provisioning activities have been completed. Monitor the status of all open customer orders, and recognize that a customer order is ready to be closed when the status is changed to completed.
Extended Description The objective of the Close Customer Order processes is to close a customer order when the customer provisioning activities have been completed. These processes monitor the status of all open customer orders, and recognize that a customer order is ready to be closed when the status is changed to completed. **AM** *Note: Sales order cases remain open and active until all actions and issues associated with them have been resolved. Actions can be resolved either automatically, for example upon receipt of notification of completion of a previously issued service order, or manually for example when a member of workgroup completes their assigned work.* **[BOD] eTOM 1.1.1.5 Order Handling -> eTOM 1.1.1.5.8 – Close Customer Order** When the customer provisioning activities have been completed Singleview closes the customer order. **[BOO] 3.3.13 Case Management (entire section)**
Explanatory Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.3.7.2 Level 3: Close Customer Order (1.1.1.5.8) – TM Forum Assessor Scores

1.1.1.5.8 Close Customer Order	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.3.8 Supporting Evidence References (Works Cited)

AO	Singleview 8.0 Architecture Overview, documentation for release 8.00.04, d-sv-aov.zip
BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
BOO	CSG Baseline Offering Overview, Baseline Offering Overview.pdf
CBO	Overview for Singleview Convergent Billing v8.00, d-cb-ovr.zip
NPC	Note with Product Cancellation screenshot, Product Cancellation.pdf

4.3.9 Level 2: Order Handling (1.1.1.5) – Conformance Results

Table 4.3 Level 2: Order Handling (1.1.1.5) – Conformance Results

1.1.1.5 - Order Handling	
Level 3 Processes	**Score**
1.1.1.5.1 - Determine Customer Order Feasibility	5
1.1.1.5.2 - Authorize Credit	5
1.1.1.5.4 - Track & Manage Customer Order Handling	5
1.1.1.5.5 - Complete Customer Order	4.5
1.1.1.5.6 - Issue Customer Orders	5
1.1.1.5.7 - Report Customer Order Handling	5
1.1.1.5.8 - Close Customer Order	5

4.4 Problem Handling (1.1.1.6)

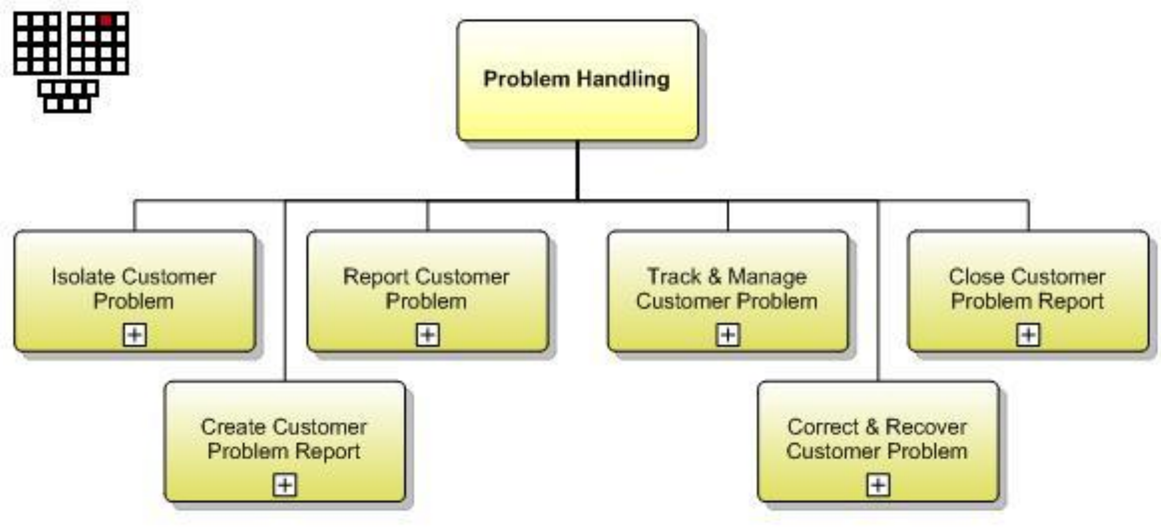


Figure 4.23 Problem Handling decomposition into level 3 processes

Process Identifier: 1.1.1.6

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Responsible for receiving trouble reports from customers, resolving them to the customer's satisfaction and providing meaningful status on repair and/or restoration activity to the customer.

Extended Description

Problem Handling processes are responsible for the management of problems reported by customers and associated with purchased product offerings. The objective of these processes is to receive reports from customers, resolving them to the customer's satisfaction and providing meaningful status on repair and/or recovery activity to the customer. They are also responsible for customer contact and support in relation to any customer-affecting problems detected by other processes or through analysis, including proactively informing the customer and resolving these specific problems to the customer's satisfaction.

Responsibilities of the Problem Handling processes include, but are not limited to:

· Capturing, analyzing, managing and reporting on customer reported problems associated with purchased product offerings;

· Initiating and managing customer problem reports;

· Correcting customer problems;

· Reporting progress on customer problem reports to customer and other processes;

· Assigning & tracking customer problem recovery activities; and

· Managing customer problem jeopardy conditions.

Problem Handling processes perform analysis, decide on the appropriate actions/responses and carry them out with the intent of restoring normal operation on specific purchased product offerings.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.4.1 Level 3: Isolate Customer Problem (1.1.1.6.1) – Out of Scope

NOTE: This Level 3 Process is out of scope and is therefore only detailed for completeness.

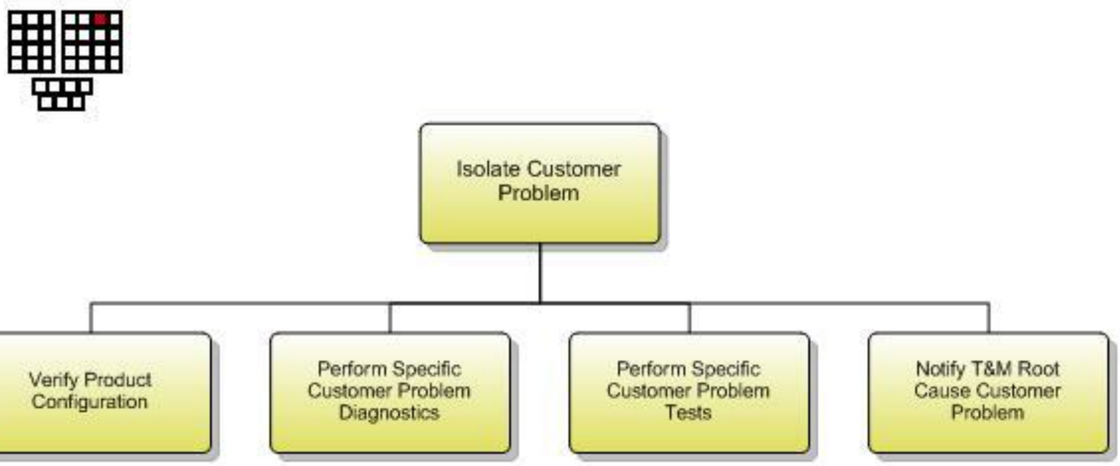


Figure 4.24 Isolate Customer Problem decomposition into level 4 processes

Process Identifier: 1.1.1.6.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Identify the root cause of the customer problem.

Extended Description

The purpose of the Isolate Customer Problem processes is to identify the root cause of the customer problem. The responsibilities of these processes include, but are not limited to:

· Verifying whether the customer is using the purchased product offering correctly; and

· Performing diagnostics based on the customer provided information to determine whether the root cause of the customer problem is linked to the underlying services.

The Isolate Customer Problem processes will make the results of the root cause analysis available to other processes. The Isolate Customer Problem processes will update open customer problem report, as required during the assessment, and when the root cause has been identified.

The Isolate Customer Problem processes will notify the Track & Manage Customer Problem processes when the analysis is complete.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.4.2 Level 3: Report Customer Problem (1.1.1.6.2) – Out of Scope

NOTE: This Level 3 Process is out of scope and is therefore only detailed for completeness.

Figure 4.25 Report Customer Problem decomposition into level 4 processes

Process Identifier: 1.1.1.6.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Monitor the status of customer problem reports, provide notifications of any changes and provide management reports

Extended Description

The objective of the Report Customer Problem processes is to monitor the status of customer problem reports, provide notifications of any changes and provide management reports. These processes are responsible for continuously monitoring the status of customer problem reports and managing notifications to processes and other parties registered to receive notifications of any status changes. Notification lists are managed and maintained by the Support Problem Handling processes.These processes record, analyze and assess the customer problem report status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Problem Handling process. These specialized summaries could be creation of specific reports required by customers and/or other specific audiences. These processes will make the necessary reports about the problem that occurred, the root cause and the activities carried out for recovery of normal operation.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.4.3 Level 3: Track & Manage Customer Problem (1.1.1.6.3) – Mapping details

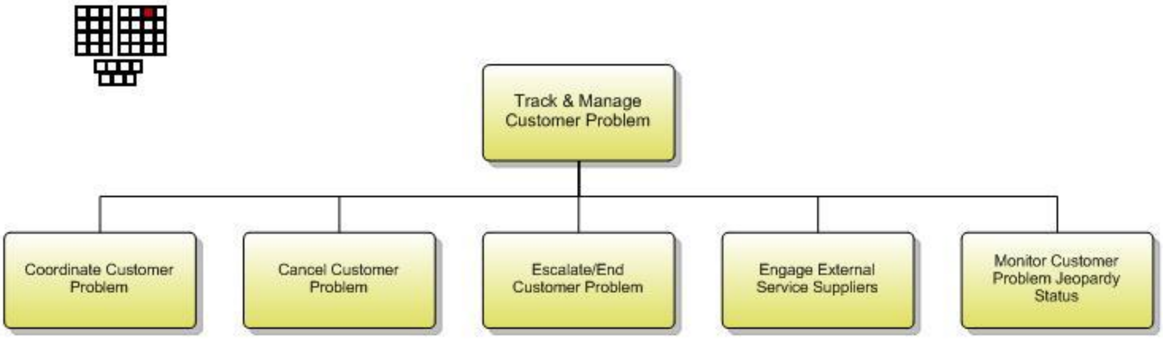


Figure 4.26 Manage & Track Customer Problem decomposition into level 4 processes

Process Identifier: 1.1.1.6.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that recovery activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open customer problem reports in jeopardy.

Extended Description

The purpose of the Track & Manage Customer Problem processes is to ensure that recovery activities are assigned, coordinated and tracked efficiently, and that escalation is invoked as required for any open customer problem reports in jeopardy. Responsibilities of these processes include, but are not limited to

· Scheduling, assigning and coordinating tracking any recovery activities, and any repair and restoration activities delegated to other processes;

· Generating the respective service trouble report creation request(s) to Create Service Trouble Report based on specific customer problem reports;

· Undertake necessary tracking of the execution progress;

· Modifying information in an existing customer problem report based on assignments;

· Modifying the customer problem report status;

· Canceling a customer problem report when the specific problem was related to an incorrect customer problem report; and

· Monitoring the jeopardy status of open customer problem reports, and escalating customer problem reports as necessary.

Note that some specific product and/or service components may be owned and managed by suppliers/partners. In these cases the Track & Manage Customer Problem process is responsible for initiating requests, through S/P Problem Reporting & Management processes for restoration and recovery by the supplier/partner of the specific service components. These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence. The Track & Manage Customer Problem processes will also inform the Close Customer Problem processes by modifying the customer problem report status to cleared when the customer problem has been resolved.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.4.3.1 Level 4: Coordinate Customer Problem (1.1.1.6.3.1) – Mapping Details

Process Identifier: 1.1.1.6.3.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.6.3.1 – Coordinate Customer Problem**
Brief Description This process coordinates all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence. It schedules, assigns and coordinates any recovery activities, and any repair and restoration activities delegated to other processes. It undertakes necessary tracking of the execution progress, modifies information in an existing Customer Problem Report based on assignments, and modifies the Customer Problem Report status. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Coordinates all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence. It schedules, assigns and coordinates any recovery activities, and any repair and restoration activities delegated to other processes. It undertakes necessary tracking of the execution progress, modifies information in an existing Customer Problem Report based on assignments, and modifies the Customer Problem Report status. **AM** *Note: Manual activities in this process cover the necessary analysis, decision making, and creation of appropriate actions in the Singleview case.* **[BOD]eTOM 1.1.1.6.3 – Track & Manage Customer Problem** Singleview case management provides the general workflow capability used to track and manage customer problem handling activities. The features include assign actions, setting reminders, defining notification and escalations, as required. **[BOO] 3.3.13 Case Management (entire section)**

Optional

Not used for this process element

Interactions

Not used for this process element

4.4.3.2 Level 4: Cancel Customer Problem (1.1.1.6.3.2) – Mapping Details

Process Identifier: 1.1.1.6.3.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.6.3.2 - Cancel Customer Problem**
Brief Description This process cancels a Customer Problem Report when the specific trouble was related to an incorrect customer problem report. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Cancels a Customer Problem Report when the specific trouble was related to an incorrect customer problem report. **AM** **[CMEUG] Business Concepts → Case** […] A case is **closed** only when **all issues and actions have been resolved**, and all orders associated with the case are submitted or cancelled. **[CMEUG] How Do I? → Provide Customer Support → Create a Troubleshooting Ticket** [...]If the problem is resolved during the call, in the *Resolution Summary* group, select: a. *Problem Resolved* check box. b. Cause of the problem in the *Root Cause* drop-down list [*e.g. Instructions*] Not used for this process element **Interactions** Not used for this process element

4.4.3.3 Level 4: Escalate/End Customer Problem (1.1.1.6.3.3) – Mapping Details

Process Identifier: 1.1.1.6.3.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.6.3.3 - Escalate/End Customer Problem
Brief Description Initiate escalation of customer problem reports as necessary **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Ensure that escalation is being invoked as required for any open customer problem reports in jeopardy. **AM** **[PD] 6.2.4 Escalation** 1. **6.2.4 Escalation** 2. Singleview helps service providers manage contractual or implied service agreements by ensuring that tasks are completed in the agreed timeframe. 3. Each task can be given an escalation policy that defines operations for the system to perform as deadlines approach. 4. Escalation operations may include reassignment of the task to a work group that provides second level support or a change in priority to ensure the task is handled more quickly. These escalations can be scheduled based on the due date of the task (for example, the first escalation may occur one day before the task is due to be finished). A service provider can be assured that vital tasks do not 'slip through the net', improving customer satisfaction, and removing the necessity for users to 'remember' to carry out a task.

Optional

Not used for this process element

Interactions

Not used for this process element

4.4.3.4 Level 4: Monitor Customer Problem Jeopardy Status (1.1.1.6.3.4) – Mapping Details

Process Identifier: 1.1.1.6.3.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.6.3.4 - Monitor Customer Problem Jeopardy Status
Brief Description Monitoring the jeopardy status of open customer problem reports **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Ensure that any open customer problem reports in jeopardy are identified and reported **A** **[PD] 6.2.4 Escalation** 5. **6.2.4 Escalation** 6. Singleview helps service providers manage contractual or implied service agreements by ensuring that tasks are completed in the agreed timeframe. 7. Each task can be given an escalation policy that defines operations for the system to perform as deadlines approach. 8. Escalation operations may include reassignment of the task to a work group that provides second level support or a change in priority to ensure the task is handled more quickly. These escalations can be scheduled based on the due date of the task (for example, the first escalation may occur one day before the task is due to be finished). A service provider can be assured that vital tasks do not 'slip through the net', improving customer

satisfaction, and removing the necessity for users to 'remember' to carry out a task.

[BOD] eTOM 1.1.1.2 Customer Interface Management → eTOM 1.1.1.2.3 Analyse and Report on Customer

[…]Singleview case information is an excellent source for downstream analysis on customer communications, and can be used for generating reports. This information can be classified using any number of data capture methods that an organisation requires, to extract useful data.
Analysis of data enables the following: […]

- Identifies problem areas.[…]
- Produces other actionable management reports.

Singleview provides functions to support this type of analysis, including complex searching and core reports that are delivered as standard.

Complex Searches

The complex search functionality is a valuable tool provided for users with the correct security profile to interrogate all data in the Singleview database.

Optional

Not used for this process element

Interactions

Not used for this process element

4.4.3.5 Level 3: Track & Manage Customer Problem (1.1.1.6.3) – TM Forum Assessor Scores

1.1.1.6.3 - Track & Manage Customer Problem	
Grouping of Implied Tasks	**Score**
Coordinate Customer Problem (1.1.1.6.3.1)	*100%*
Cancel Customer Problem (1.1.1.6.3.2)	*100%*
Escalate/End Customer Problem (1.1.1.6.3.3)	*100%*
Engage External Service Providers (1.1.2.4.6.7)	*100%*
Monitor Customer Problem Jeopardy Status (1.1.1.6.3.5)	*100%*
Total score for Parent Level 3 Process	**500/500 = 100% = 5**

4.4.4 Level 3: Close Customer Problem Report (1.1.1.6.4) – Mapping details

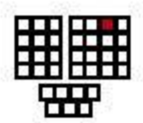


Figure 4.27 Close Customer Problem Report decomposition into level 4 processes

Process Identifier: 1.1.1.6.4

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that a problem affecting the customer is solved

Extended Description

The purpose of the Close Customer Problem Report processes is to close a customer problem report when the problem affecting the customer is solved. These processes are also responsible for possibly contacting the customer to inquire about the customer's satisfaction with resolution of the problem. These processes monitor the status of all open customer problem reports and recognize that a customer problem report is ready to be closed when the status is changed to cleared.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.4.4.1 Level 4: Contact Customer for Feedback (1.1.1.6.4.1) – Mapping Details

Process Identifier: 1.1.1.6.4.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.6.4.1 – Contact Customer for Feedback**
Brief Description This process is responsible for contacting the customer to inquire about the customer's satisfaction with resolution of the problem. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Contacts the customer (where appropriate) to inquire about the customer's satisfaction with resolution of the problem. **AM** *Note: A Case is associated with every Troubleshooting Issue and the associated workflow defines the actions (both automated and manual) that need to be carried out. Additional actions can be manually added to the Case.* **[BOD] eTOM 1.1.1.6 Problem Handling → eTOM 1.1.1.6.3 Track and Manage Customer Problem** Singleview case management provides the general workflow capability used to track and manage customer problem handling activities. The features include **assign actions, setting reminders**, defining notification and escalations, as required. **[BOD] eTOM 1.1.1.6 Problem Handling → eTOM 1.1.1.6.5 Create Customer Problem Report** [...] An action can be created from the Action tab, and clicking the **Get Next Action** button ensures that the issue is removed from the work queue and resolved within the defined SLA times. **[CMEUG] How Do I? →Manage Actions → Create a Follow Up Call Action (entire section)**

Optional

Not used for this process element

Interactions

Not used for this process element

4.4.4.2 Level 3: Close Customer Problem Report (1.1.1.6.4) – TM Forum Assessor Scores

1.1.1.6.4 - Close Customer Problem Report	
Grouping of Implied Tasks	**Score**
Contact Customer for Feedback (1.1.1.6.4.1)	
Total score for Parent Level 3 Process	**100% = 5**

4.4.5 Level 3: Create Customer Problem Report (1.1.1.6.5) – Mapping Details

Process Identifier: 1.1.1.6.5

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

4.4.5.1 Level 3: Create Customer Problem Report (1.1.1.6.5) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

Level 3 PROCESS MAPPING DETAILS **1.1.1.6.5 – Create Customer Problem Report**
Brief Description This process creates a new Customer Problem Report. **Extended Description** The objective of the Create Customer Problem Report process is to create a new customer problem report. A new customer problem report may be created as a result of customer contacts indicating a problem with their purchased product offerings or, at the request of analysis undertaken by other processes in the CRM or SM&O horizontal process layers, which detect a failure or degradation which may be impacting customers. These processes are responsible for capturing all the necessary customer information to be included in the new Customer Problem Report. **AM** *Note: Manual part of this process is related to data capture* **[BOD]eTOM 1.1.1.6.5 – Create Customer Problem Report** Singleview case management allows a new case to be created as a result of customer interactions (for example, customer inbound call, contact using self-care, inbound email or fax, and outbound call) indicating a problem with the product. It also supports the creation of cases from customer interaction across many channels and from other processes (for example, ITIL event management). All information about the customer, and that relating to the problem can be captured against the case. **Explanatory** Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.4.5.2 Level 3: Create Customer Problem Report (1.1.1.6.5) – TM Forum Assessor Scores

1.1.1.6.5 – Create Customer Problem Report	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.4.6 Level 3: Correct & Recover Customer Problem (1.1.1.6.6) – Out of Scope

NOTE: This Level 3 Process is out of scope and is therefore only detailed for completeness.

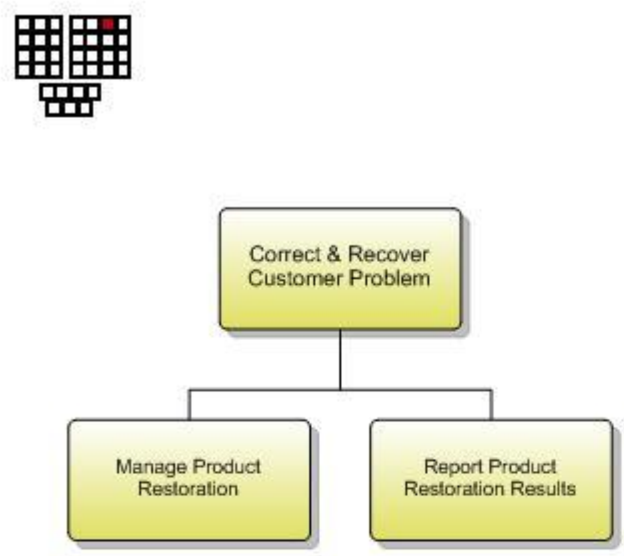


Figure 4.28 Correct & Recover Customer Problem decomposition into level 4 processes

Process Identifier: 1.1.1.6.6

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Restore the service to a normal operational state as efficiently as possible

Extended Description

The objective of the Correct & Recover Customer Problem processes is to restore the purchased product offerings to a normal operational state as efficiently as possible.Depending on the nature of the specific reported failure, or incorrect operation, of the purchased product offering these processes may possibly lead to:

· Educational interaction with the customer to ensure correct usage of the purchased facilities;

· Re-assessment of the customers needs and withdrawal, upgrade, renewal of the purchased product offerings;

· Requests for activities to be undertaken by other processes in the CRM process layer; or

· Identification that restorative activities need to be undertaken in the SM&O processes.

They will also report successful restoration of normal service operation, restoration through temporary work-arounds or an unsuccessful attempt at restoration to Track & Manage Customer Problem through updates to the associated customer problem report.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.4.7 Supporting Evidence References (Works Cited)

BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
BOO	CSG Baseline Offering Overview, Baseline Offering Overview.pdf
CMEUG	User Guide for Customer Management v8.00, d-cm-eug.zip
PD	Singleview Version 8.00 PRODUCT DESCRIPTION, Singleview_v8_00_product_description-final.pdf

4.4.8 Level 2: Problem Handling (1.1.1.6) – Conformance Results

Table 4.4 Level 2: Problem Handling (1.1.1.6) – Conformance Results

1.1.1.6 - Problem Handling	
Level 3 Processes	**Score**
1.1.1.6.1 - Isolate Customer Problem	0
1.1.1.6.2 - Report Customer Problem	0
1.1.1.6.3 - Track & Manage Customer Problem	5
1.1.1.6.4 - Close Customer Problem Report	5
1.1.1.6.5 - Create Customer Problem Report	5
1.1.1.6.6 - Correct & Recover Customer Problem	0
1.1.1.6.1 - Isolate Customer Problem	0

4.5 L2: Retention & Loyalty (1.1.1.9)

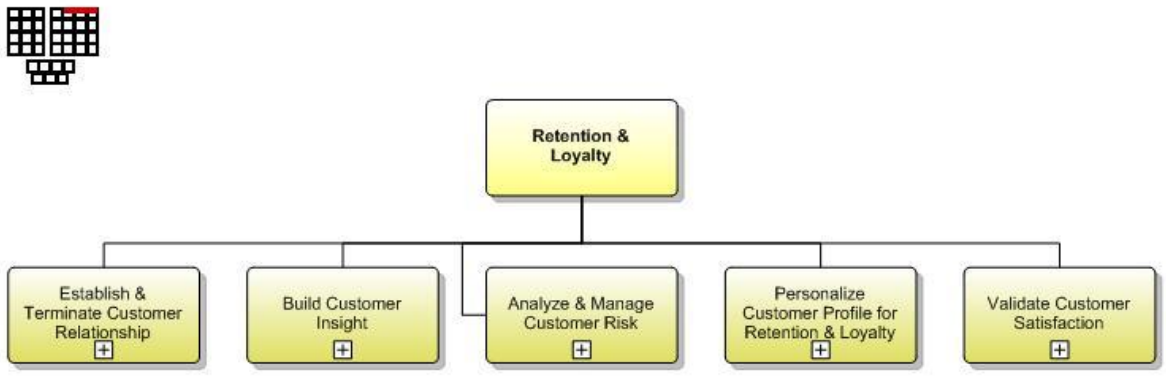


Figure 4.29 Retention & Loyalty decomposition into level 3 processes

Process Identifier: 1.1.1.9

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Manage all functionalities related to the retention of acquired customers, and the use of loyalty schemes in the potential acquisition of customers.

Extended Description

Retention & Loyalty processes deal with all functionalities related to the retention of acquired customers, and the use of loyalty schemes in the potential acquisition of customers. They establish a complete understanding of the needs of the customer, a determination of the value of the customer to the enterprise, determination of opportunities and risks for specific customers, etc. These processes collect and analyze data from all enterprise and customer contact.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.5.1 Level 3: Establish & Terminate Customer Relationship (1.1.1.9.1) – Mapping Details

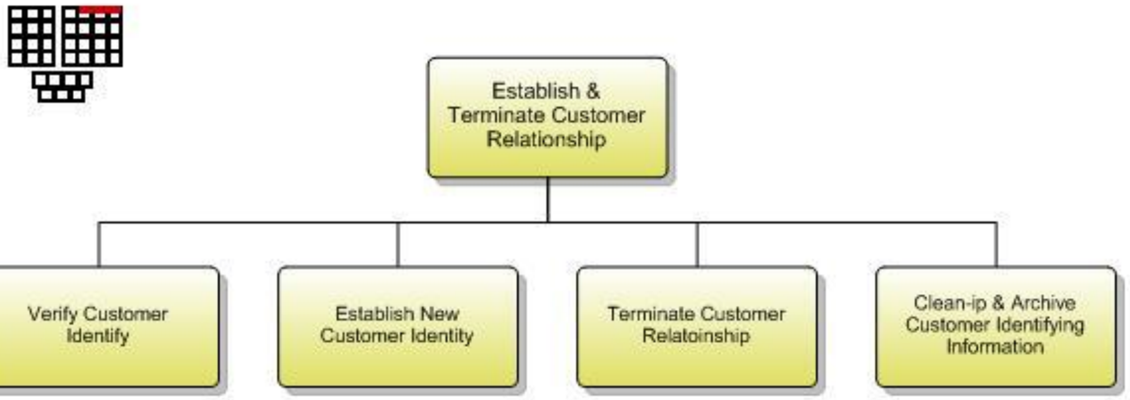


Figure 4.30 Establish & Terminate Customer Relationship decomposition into level 4 processes

Process Identifier: 1.1.1.9.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Verify the customer identity, manage the customer identity across the Enterprise, and manage termination as appropriate

Extended Description

The purpose of this process is to verify that the customer is who they claim they are. To ensure only one customer identity exists across the Enterprise, which can be referenced across the whole Enterprise and allows the customer to quickly and easily identify himself. The customer relationship is terminated only if actually appropriate, the wishes of the customer are complied with where possible, records are kept in case the relationship with the customer is re-established, legal and ethical requirements for customer information are complied with. Before establishing an identity for a new customer it is essential to check that the customer does not already have an Identity with the Enterprise. Establish and verify the Identity, issue a unique Identifier and Authentication information

Significant customer life-stage events or business decisions by the Service Provider cause one or both parties to terminate the relationship. The need for complete termination of relationships needs to be differentiated from just terminating all services. The principles behind this include the Service Provider ending a relationship only if the customer ceases to exist, or the customer is fraudulent, the Enterprise decides that it no longer wishes to do business with the customer

This process is also used to 'clean-up' duplicates of customer identifying information that may exist within the organization

Profile and preference information for terminated customer relationships is archived if acceptable to the customer. All relevant parties are informed of the ended relationship. Other processes are triggered to dismantle the customer solution and servicing arrangements as necessary.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.5.1.1 Level 4: Verify Customer Identify (1.1.1.9.1.1) – Mapping Details

Process Identifier: 1.1.1.9.1.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.9.1.1 – Verify Customer Identify**
Brief Description Verify that the customer is who they claim they are. To ensure only one customer identity exists across the Enterprise, which can be referenced across the whole Enterprise and allows the customer to quickly and easily identify himself. Before establishing an identity for a new customer it is essential to check that the customer does not already have an Identity with the Enterprise. For new customers, Establish New Customer Identify then deals this these. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Verify that the customer is who they claim they are, to ensure only one customer identity exists across the Enterprise, which can be referenced across the whole Enterprise and allows the customer to quickly and easily identify himself. Before establishing an identity for a new customer it is essential to check that the customer does not already have an Identity with the Enterprise. **AM** **[BOD] eTOM 1.1.1.9.1 Establish and Terminate Customer Relationship** Singleview provides the following functionality: • Captures and stores credentials that can be used to validate the customer's identity. • Provides extensive search capabilities to minimise the risk of creating duplicates, ensuring that only one customer identity exists. **Optional**

Not used for this process element **Interactions** For new customers, Establish New Customer Identify then deals this these.

4.5.1.2 Level 4: Establish New Customer Identity (1.1.1.9.1.2) – Mapping Details

Process Identifier: 1.1.1.9.1.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.9.1.2 – Establish New Customer Identity
Brief Description Issue a unique Identifier and Authentication information for a new customer without an existing identity. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Issue a unique Identifier and Authentication information for a new customer without an existing identity. **AM** *Note: Singleview maintains two unique identifiers, an internal "technical" identifier (numeric) and a human facing customer code.* **[BOD] eTOM 1.1.1.9.1 Establish and Terminate Customer Relationship** Singleview enables contacts to be created with a Prospect status. When a prospect is created, the CSR changes the status from Prospect to Contact, and then has the option of creating customer and account records. **Optional** Not used for this process element

Interactions

Not used for this process element

4.5.1.3 Level 4: Terminate Customer Relationship (1.1.1.9.1.3) – Mapping Details

Process Identifier: 1.1.1.9.1.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.9.1.3 – Terminate Customer Relationship**
Brief Description Terminates customer relationship. Significant customer life-stage events or business decisions by the Service Provider cause one or both parties to terminate the relationship. The customer relationship is terminated only if actually appropriate, the wishes of the customer are complied with where possible, records are kept in case the relationship with the customer is re-established, legal and ethical requirements for customer information are complied with. The need for complete termination of relationships needs to be differentiated from just terminating all services. The principles behind this include the Service Provider ending a relationship only if the customer ceases to exist, or the customer is fraudulent, the Enterprise decides that it no longer wishes to do business with the customer. **Extended Description** Not used for this process element **Explanatory** Significant customer life-stage events or business decisions by the Service Provider cause one or both parties to terminate the relationship. **Mandatory** Terminates customer relationship. The customer relationship is terminated only if actually appropriate, the wishes of the customer are complied with where possible, records are kept in case the relationship with the customer is re-established, legal and ethical requirements for customer information are complied with. The need for complete termination of relationships needs to be differentiated from just terminating all services. The principles behind this include the Service Provider ending a relationship only if the customer ceases to exist, or the customer is fraudulent, the Enterprise decides that it no longer wishes to do business with the customer. **AM** *Note: Singleview clearly distinguishes between termination of services and termination of the customer relationship, the two entities having completely separate sets of status code values.* **[BOD] eTOM 1.1.1.9.1 Establish and Terminate Customer Relationship**

The customer relationship is terminated if required, and the customer records can be retained in case the customer returns. However, this is dependent on customer approval. Singleview archives terminated profiles and preference information to comply with the data retention policy when a relationship is terminated. **Optional** Not used for this process element **Interactions** Not used for this process element

4.5.1.4 Level 4: Clean-up & Archive Customer Identifying Information (1.1.1.9.1.4) – Mapping Details

Process Identifier: 1.1.1.9.1.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.9.1.4 – Clean-up & Archive Customer Identifying Information**
Brief Description After termination, provides 'clean-up' duplicates of customer identifying information that may exist within the organization. Profile and preference information for terminated customer relationships is archived if acceptable to the customer. All relevant parties are informed of the ended relationship. Other processes are triggered to dismantle the customer solution and servicing arrangements as necessary. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** After termination, provides 'clean-up' duplicates of customer identifying information that may exist within the organization. Profile and preference information for terminated customer relationships is archived if acceptable to the customer. All relevant parties are informed of the ended relationship. **AM** *Note: The Case used to record termination of the relationship can have a document merge associated with one of the associated actions to produce any necessary letters.* **[BOD] eTOM 1.1.1.9.1 Establish and Terminate Customer Relationship** Singleview archives terminated profiles and preference information to comply with the data retention policy when a relationship is terminated. **[SAG] Database Archiving -> Archiving Overview** The terms 'archiving' and 'unarchiving' imply the exporting and restoring of data relating to specific

database entities, taken from one or more tables in the database. For example, the Convergent Billing customer entity contains information about the individual customer, customer hierarchy, people nominated as contacts, accounts involved, invoice details, and much more. The entity is made up of the base-level data (such as customer details) plus all dependent data, wherever it is stored in the database.

Archiving is therefore not synonymous with 'backup' and 'restore', which are generally carried out on one or more complete tables (if not the database), and are used to provide a means of recovering from any damage the database may suffer from hardware or software failure.

Archiving is more generally used to remove and archive database entities no longer required; for example, customers who have permanently closed their accounts or products no longer available. As data of this kind is archived, it can also be automatically purged from the database.

[CMC] Part 12 Document Merge
Document templates are created and maintained in the Convergent Billing **Template Definition** form. The following action types are configured to have a document template:

- Follow Up Letter
- Send Information
- Collateral Request.

When one of these actions is created and saved, the document is generated and stored in the database. If successful, the document ID is saved into the action so the document can be viewed at a later time.

Optional

Not used for this process element

Interactions

Other processes are triggered to dismantle the customer solution and servicing arrangements as necessary.

4.5.1.5 Level 3: Establish & Terminate Customer Relationship (1.1.1.9.1) – TM Forum Assessor Scores

1.1.1.9.1 Establish & Terminate Customer Relationship	
Grouping of Implied Tasks	**Score**
Verify Customer Identify (1.1.1.9.1.1)	*100%*
Establish New Customer Identity (1.1.1.9.1.2)	*100%*
Terminate Customer Relationship (1.1.1.9.1.3)	*100%*
Clean-up & Archive Customer Identifying Information (1.1.1.9.1.4)	*100%*
Total score for Parent Level 3 Process	**400/400 = 100% = 5**

4.5.2 Level 3: Build Customer Insight (1.1.1.9.2) – Mapping Details

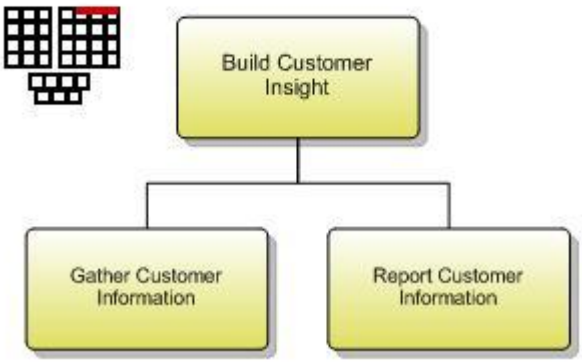


Figure 4.31 Build Customer Insight decomposition into level 4 processes

Process Identifier: 1.1.1.9.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that Service Provider and the customer feel confident that the relationship is founded on up-to-date, accurate and legally compliant information

Extended Description

The purpose of this process is to ensure that Service Provider and the customer feel confident that the relationship is founded on up-to-date, accurate and legally compliant information. The Service Provider will incorporate into the customer profile, all relevant information gathered through all contacts with the customer (usage pattern, demographics, life stage, household, community of interest, business direction). Customer and market information from other sources may be gathered, which will build a better understanding of the customer. Customer Information must be made available to any process that needs to access it. This customer information will be used to continually refine the means and style of interaction, and the solution sets and customer experience offered.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.5.2.1 Level 4: Gather Customer Information (1.1.1.9.2.1) – Mapping Details

Process Identifier: 1.1.1.9.2.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.9.2.1 – Gather Customer Information
Brief Description Incorporate into the customer profile, all relevant information gathered through all contacts with the customer (usage pattern, demographics, life stage, household, community of interest, business direction). Customer and market information from other sources may be gathered, which will build a better understanding of the customer. The purpose of this process is to ensure that Service Provider and the customer feel confident that the relationship is founded on up-to-date, accurate and legally compliant information. **AM** **[BOD] eTOM 1.1.1.9.2. – Build Customer Insight** Singleview's extensible data model makes it easy to capture customer-related information using a profile that can include usage patterns, demographical analysis, life stage, household, areas of interest, and business direction, and marketing information taken from other sources to build a more accurate and complete customer profile. **[CWB] Fact Tool** The Fact Tool is used to set up the data model by allowing the creation and maintenance of facts. **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use.

Optional Reserved for future use.   **Interactions** Reserved for future use.

4.5.2.2 Level 4: Report Customer Information (1.1.1.9.2.2) – Mapping Details

Process Identifier: 1.1.1.9.2.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.9.2.2 – Report Customer Information**
Brief Description Makes available Customer Information to any process that needs to access it. This customer information will be used to continually refine the means and style of interaction, and the solution sets and customer experience offered. **AM** *Note: Integration infrastructure allows information to be passed to external applications via SID compliant interfaces via a variety of mechanisms including real-time and batch.* **[BOD] eTOM 1.1.1.9.2. – Build Customer Insight** All customer Information retained in Singleview can be exposed and made available to other applications and processes. **[BOO] 3.8 Integration Infrastructure (complete section)** **Extended Description** Not used for this process element **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use.

Interactions

Reserved for future use.

4.5.2.3 Level 3: Build Customer Insight (1.1.1.9.2) – TM Forum Assessor Scores

1.1.1.9.2 - Build Customer Insight	
Grouping of Implied Tasks	**Score**
Gather Customer Information (1.1.1.9.2.1)	*100%*
Report Customer Information (1.1.1.9.2.2)	*100%*
Total score for Parent Level 3 Process	**200/200 = 100% = 5**

4.5.3 Level 3: Analyze & Manage Customer Risk (1.1.1.9.3) – Out of Scope

NOTE: This Level 3 Process is out of scope and is therefore only detailed for completeness.

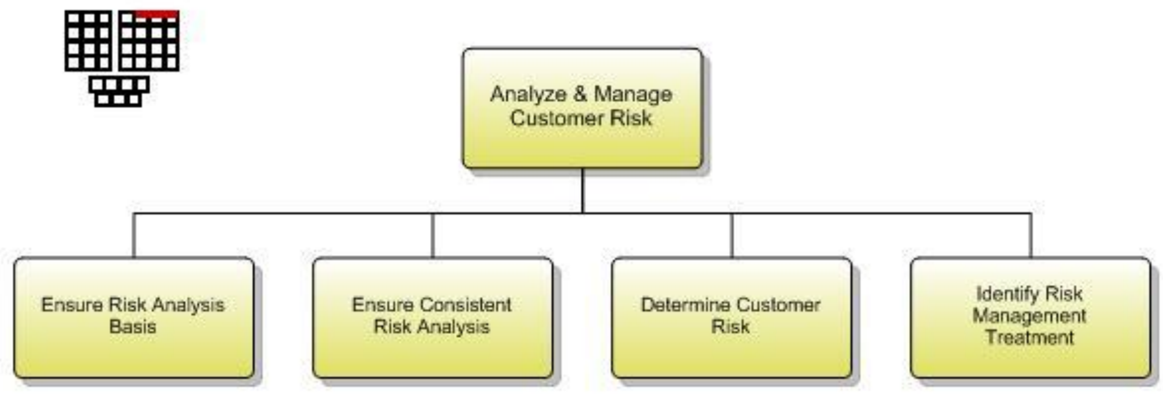


Figure 4.32 Analyze & Manage Customer Risk decomposition into level 4 processes

Process Identifier: 1.1.1.9.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that a consistent customer risk assessment is used across the Enterprise and ensure that risk analysis is based on information collected from all processes.

Extended Description

The purpose of this process is to ensure that risk analysis is based on information collected from all processes and that consistent risk assessment is used across the Enterprise. Its purpose is also to track and improve Operations, target and win the right customers and improves Sales Conversion rate. It determines the credit risk, fraud risk, influence risk, and churn risk. It identifies treatments to manage these risks and focuses on using customer information.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.5.4 Level 3: Personalize Customer Profile for Retention & Loyalty (1.1.1.9.4) – Mapping Details

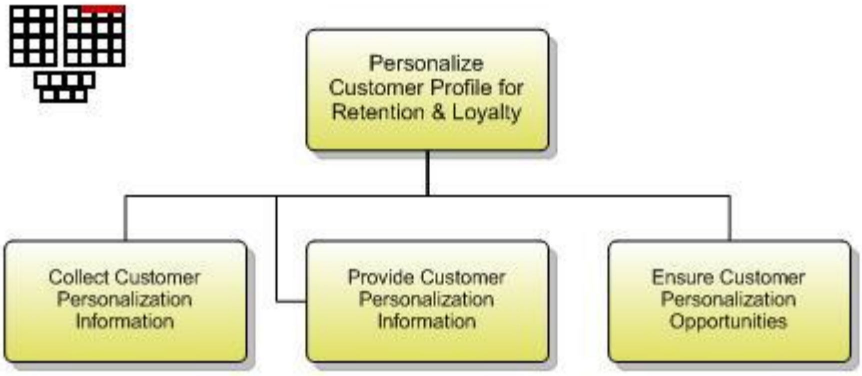


Figure 4.33 Personalize Customer Profile for Retention & Loyalty decomposition into level 4 processes

Process Identifier: 1.1.1.9.4

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Provide the personalization opportunities for customers that will encourage them not to switch to another Service Provider

Extended Description

The purpose of this process is to provide the personalization opportunities for customers that will encourage them not to switch to another Service Provider. Personalization allows delivery of services that more closely match the customer's need. Collection of Personalization Information also discourages switching since the customer would have to build up the same Personalized experience with the next Service Provider.

- Business Planning is essential to allow the Service Provider to match the customer's future retention needs and potential acquisition needs, rather than just continuing with today's known needs.

- Loyalty schemes allow tangible benefits to be offered to good customers in a mass-market.

- The process aims to ensure that all information is gathered and used to make the best decisions to retain those customers the Service Provider wants to retain, heighten satisfaction and maintain profitability.

This process provides a source of data for performing loyalty and retention marketing campaigns, for retaining existing customers, promoting customer loyalty, winning back customers who have left. It utilizes predictive modeling software to analyze an account, and to return relevant scores, such as: churn score, up-sell score, cross-sell score, bad debt score and customer lifetime value score. Moreover it utilizes scores for customer analysis and marketing campaign purposes.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.5.4.1 Level 4: Collect Customer Personalization Information (1.1.1.9.4.1) – Mapping Details

Process Identifier: 1.1.1.9.4.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.9.4.1 – Collect Customer Personalization Information
Brief Description Collects Personalization Information about customers. This also discourages switching since the customer would have to build up the same Personalized experience with the next Service Provider.
Extended Description Not used for this process element
Explanatory This also discourages switching since the customer would have to build up the same Personalized experience with the next Service Provider.
Mandatory Collects Personalization Information about customers. **AM** **[BOD] eTOM 1.1.1.9.4 - Personalize Customer Profile for Retention and Loyalty** Singleview facilitates personalised customer communications, capturing contact details and the preferred communication channel (for example, phone number, email, and SMS).
Optional Not used for this process element
Interactions Not used for this process element

4.5.4.2 Level 4: Provide Customer Personalization Information (1.1.1.9.4.2) – Mapping Details

Process Identifier: 1.1.1.9.4.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.9.4.2 – Provide Customer Personalization Information
Brief Description Provides a source of data for performing loyalty and retention marketing campaigns, for retaining existing customers, promoting customer loyalty, winning back customers who have left. It utilizes predictive modeling software to analyze an account, and to return relevant scores, such as: churn score, up-sell score, cross-sell score, bad debt score and customer lifetime value score. Moreover it utilizes scores for customer analysis and marketing campaign purposes. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Provides a source of data for performing loyalty and retention marketing campaigns, for retaining existing customers, promoting customer loyalty, winning back customers who have left. **AM** *Note: The source data can be exploited both within Singleview and extracted to external applications, for example BI, for use there.* **[BOD] eTOM 1.1.1.9.4 - Personalize Customer Profile for Retention and Loyalty** Singleview is also a source of information for customer retention activities and for cross-selling/up-selling recommendations. Singleview supports loyalty schemes that offer tangible benefits to good customers, and ensures that all information gathered is used to make the best decisions in retaining those the service provider wants to retain, increasing satisfaction and maintaining profitability. **[BOO] 3.8 Integration Infrastructure (complete section)** It utilizes predictive modeling software to analyze an account, and to return relevant scores, such as:

churn score, up-sell score, cross-sell score, bad debt score and customer lifetime value score. **A**

Note: Triggers can be defined to fire during customer interaction on the basis of real-time analysis of customer information including facts populated from external applications.

[PD] 6.3 Triggers (entire section)

[CWB] Trigger Tool (entire section)

[BOO] 3.8 Integration Infrastructure (complete section)

Moreover it utilizes scores for customer analysis and marketing campaign purposes. **AM**

Note: The contacts to include in a campaign are selected using a complex search against facts.

[BOO] 3.1.1 Campaign & Funnel Management

- Creation of campaign for selected contacts.
- Contacts to include in campaign can be loaded from external source.

[BOO] 3.8 Integration Infrastructure (complete section)

Optional

Not used for this process element

Interactions

Not used for this process element

4.5.4.3 Level 4: Ensure Customer Personalization Opportunities (1.1.1.9.4.3) – Mapping Details

Process Identifier: 1.1.1.9.4.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.9.4.3 – Ensure Customer Personalization Opportunities**
Brief Description Provides the personalization opportunities for customers that will encourage them not to switch to another Service Provider. Personalization allows delivery of services that more closely match the customer's need. - Business Planning is essential to allow the Service Provider to match the customer's future retention needs and potential acquisition needs, rather than just continuing with today's known needs. - Loyalty schemes allow tangible benefits to be offered to good customers in a mass-market. - The process aims to ensure that all information is gathered and used to make the best decisions to retain those customers the Service Provider wants to retain, heighten satisfaction and maintain profitability. **Extended Description** Not used for this process element **Explanatory** Personalization allows delivery of services that more closely match the customer's need. - Business Planning is essential to allow the Service Provider to match the customer's future retention needs and potential acquisition needs, rather than just continuing with today's known needs. - The process aims to ensure that all information is gathered and used to make the best decisions to retain those customers the Service Provider wants to retain, heighten satisfaction and maintain profitability. **Mandatory** Provides the personalization opportunities for customers that will encourage them not to switch to another Service Provider. **A** **[BOD] eTOM 1.1.1.9. 4 - Personalize Customer Profile for Retention and Loyalty**

An account can be added to a customer to accumulate loyalty points. Points are handled as a type of currency; they can be used in tariff calculations, as a payment method and displayed on an invoice. Thresholds can be configured to define what benefits can be claimed for reaching a bonus level. For example, when a certain number of points is reached, the subscriber receives reduced rates on text messages for two months.

Optional

Not used for this process element

Interactions

Not used for this process element

4.5.4.4 Level 3: Personalize Customer Profile for Retention & Loyalty (1.1.1.9.4) – TM Forum Assessor Scores

1.1.1.9.4 - Personalize Customer Profile for Retention & Loyalty	
Grouping of Implied Tasks	**Score**
Collect Customer Personalization Information (1.1.1.9.4.1)	*100%*
Provide Customer Personalization Information (1.1.1.9.4.2)	*100%*
Ensure Customer Personalization Opportunities (1.1.1.9.4.3)	*100%*
Total score for Parent Level 3 Process	**300/300 = 100% = 5**

4.5.5 Level 3: Validate Customer Satisfaction (1.1.1.9.5) – Out of Scope

NOTE: This Level 3 Process is out of scope and is therefore only detailed for completeness.

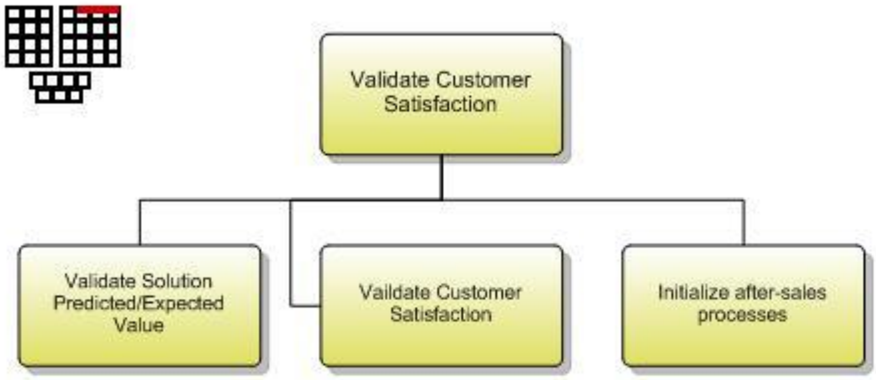


Figure 4.34 Validate Customer Satisfaction decomposition into level 4 processes

Process Identifier: 1.1.1.9.5

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Validate that predicted/expected value is delivered by the solution and initialize the after-sales processes (billing and assurance)

Extended Description

The purpose of this process is to validate that predicted/expected value is delivered by the solution and that the after-sales processes (billing and assurance) are initialized. It validates that the customer is capable of realizing maximum value from the operation or use of the solution and that intense Provider involvement is no longer needed to manage the solution.

This process ensures that the customer is satisfied that the solution that was actually delivered meets original or updated expectations and agreements and that the solution is operable by the customer.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.5.6 Supporting Evidence References (Works Cited)

BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
BOO	CSG Baseline Offering Overview, Baseline Offering Overview.pdf
CMC	Configuration Guide for Singleview Customer Management v8.00, d-cm-cfg.zip
CWB	Configuration Workbench Tools Guide for Singleview Process Engine v8.00, d-pe-cwt.zip
PD	Singleview Version 8.00 PRODUCT DESCRIPTION, Singleview_v8_00_product_description-final.pdf
SAG	System Administration Guide for Singleview v8.00, d-sv-sag.zip

4.5.7 Level 2: Retention & Loyalty (1.1.1.9) – Conformance Results

Table 4.5 Level 2: Retention & Loyalty (1.1.1.9) – Conformance Results

1.1.1.9 - Retention & Loyalty	
Level 3 Processes	**Score**
1.1.1.9.1 - Establish & Terminate Customer Relationship	5
1.1.1.9.2 - Build Customer Insight	5
1.1.1.9.3 - Analyze & Manage Customer Risk	0
1.1.1.9.4 - Personalize Customer Profile for Retention & Loyalty	5
1.1.1.9.5 - Validate Customer Satisfaction	0

4.6 L2: Bill Invoice Management (1.1.1.10)

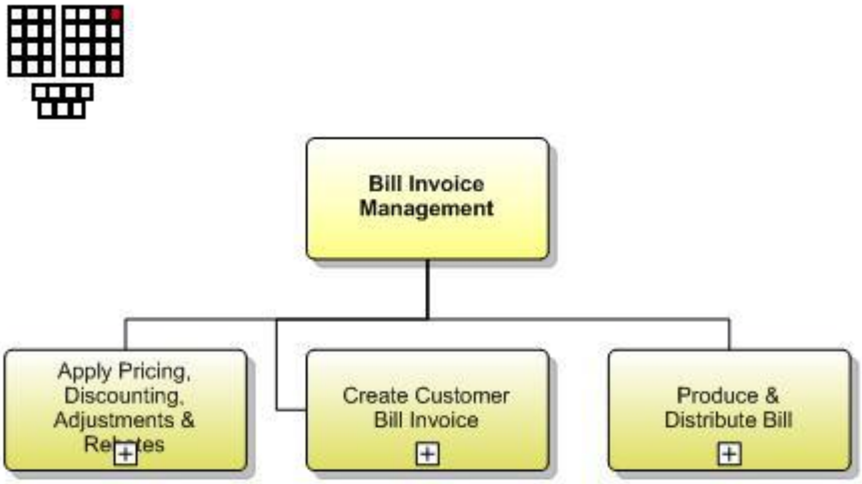


Figure 4.35 Bill Invoice Management decomposition into level 3 processes

Process Identifier: 1.1.1.10

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure the bill invoice is created, physically and/or electronically produced and distributed to customers, and that the appropriate taxes, discounts, adjustments, rebates and credits for the products and services delivered to customers have been applied.

Extended Description

Bill Invoice Management processes ensure the bill invoice is created, physically and/or electronically produced and distributed to customers, and that the appropriate taxes, discounts, adjustments, rebates and credits for the products and services delivered to customers have been applied. These processes are accountable for assuring that enterprise revenue is billed and invoices delivered appropriately to customers.

These processes are responsible for, but not limited to:

• Establishment and application of taxes and charges to the services delivered to customers;

• Application of the adjustment (adjustment decision done in Bill Inquiry Handling);

• Creation of accurate bill invoices including all adjustments, rebates, discounts, credits, etc; and

• Production & distribution of bill in physical and/or electronic form to customers in accordance with the billing cycle;

• Forecasting of physical resources associated with bill production, such as paper and envelope quantities;

• Alignment and management of promotional material insertion into distributed bills; and

• Establishment and management of third party arrangements to support bill invoice generation, production and distribution.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.6.1 Level 3: Apply Pricing, Discounting, Adjustments & Rebates (1.1.1.10.1)

Process Identifier: 1.1.1.10.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that the bill invoice is reflective of all the commercially agreed billable events and any bill invoice adjustments agreed between a Service Provider and the customer.

Extended Description

The purpose of the Apply Pricing, Discounting, Adjustments & Rebates process is to ensure that the bill invoice is reflective of all the commercially agreed billable events and any bill invoice adjustments agreed between a Service Provider and the customer. In addition, it ensures that the appropriate taxes, rebates (i.e. missed customer commitments) and credits are applied to the customer’s bill invoice(s). This process contains the account and customer specific pricing, charges, discounting, credits and taxation for services delivered to the customer by the Service Provider. It accepts events that have been collected, translated, correlated, assembled, guided and service rated. It takes these events and determines the account or customer specific pricing, charges, discounts, and taxation that should be delivered to the invoice(s) for the customer. It reviews any agreed adjustments agreed in the previous billing period and includes these to the bill invoice. This process can occur in real-time as events are service rated, or can be on a scheduled on a periodic basis at the Service Provider’s discretion.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.6.1.1 Level 4: Obtain Billing Events (1.1.1.10.1.1) – Mapping Details

Process Identifier: 1.1.1.10.1.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.10.1.1 Obtain Billing Events
Extended Description *INSTRUCTION: Not required for process mapping UNLESS "Mandatory" field is not supported.* **Explanatory** *INSTRUCTION: Not required for process mapping.* **Mandatory** The purpose of the Obtain Billing Events process is to ensure that all billing events for services delivered to the customer by the Service Provider are available for processing. **A** [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM eTOM 1.1.1.10.1 **Apply Pricing, Discounting, Adjustments, and Rebates** Singleview performs the following: • Aggregation of one-off, recurring, and usage charges into a single business invoice payable by the customer. The aggregation process considers only charges that have not been included on an invoice. [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10.2 **Create Customer Bill Invoice** […] invoices consist of the following multiple sections […]: • Transaction summary, containing payment, adjustment, and product charge summary details. • Account information, repeated as required for each customer account, and containing product details (including usage charges). [AO] Billing Architecture →**Bill Generation Process (BGP)** The BGP is a TRE server (trebgp) used to apply tariffs to aggregated data records, calculate totals and subtotals, and create invoice details from the charges incurred by a customer node (and by any child nodes for which the node is specified as the invoicing node). The BGP loads the customer hierarchy, services, events, and charges, and then builds a tree structure. Tariff and subtotal calculation is ordered using a dependency chain based on contexts. The BGP recursively traverses the hierarchy. **Optional**

Not required for process mapping

Interactions

Not required for process mapping

4.6.1.2 Level 4: Apply Pricing, Discounting, Adjustments & Rebates to Customer Account (1.1.1.10.1.2) – Mapping Details

Process Identifier: 1.1.1.10.1.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.10.1.2 Apply Pricing, Discounting, Adjustments & Rebates to Customer Account
Extended Description *INSTRUCTION: Not required for process mapping UNLESS “Mandatory” field is not supported.* **Explanatory** *INSTRUCTION: Not required for process mapping.* **Mandatory** The purpose of Determine Customer Account process is to determine the customer account or customer specific pricing, charges, discounts, and taxation that should be delivered to the invoice(s) for the customer and ensure that the each cost item included in customer bill invoice(s) can correspond to a correct account through which customer will pay for the cost item. **A** [BOD] eTOM 1.1.1.13 Charging → eTOM 1.1.1.13.1 **Perform Rating** Singleview allows the calculation of a charge value from the following inputs:[…] • Attributes of the **customer and/or their products** […] Singleview functionality includes:[…] • Applying eligibility criteria such as date period, **customer attributes**, or product attributes (for example, 'For this month only all consumer customers on the Easy tariff get 5% of calls to other mobiles'). [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10.1 **Apply Pricing, Discounting, Adjustments, and Rebates** Singleview performs the following: […] • Taxation (for example, VAT). • Discounting capability, based on defined eligible inputs at any level in the customer hierarchy.

- Currency conversion for payments, adjustments, and invoices

Optional

Not required for process mapping

Interactions

Not required for process mapping

4.6.1.3 Level 4: Apply Agreed Customer Bill Adjustment – Mapping Details

Process Identifier: 1.1.1.10.1.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.10.1.3 Apply Agreed Customer Bill Adjustment
Extended Description *INSTRUCTION: Not required for process mapping UNLESS "Mandatory" field is not supported.* **Explanatory** *INSTRUCTION: Not required for process mapping.* **Mandatory** The purpose of the Apply Agreed Customer Bill Adjustment process is to ensure that any adjustments which have been agreed between customer and Service Provider are included in the customer bill invoice. **A** [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10.1 **Apply Pricing, Discounting, Adjustments, and Rebates** Singleview performs the following: […] • Currency conversion for […] adjustments [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10.2 **Create Customer Bill Invoice** […] invoices consist of the following multiple sections […]: • Transaction summary, containing payment, adjustment, and product charge summary details. • Account information, repeated as required for each customer account, and containing product details (including usage charges). [SOG] Schedule Types and Descriptions → Schedule Types → **Apply Transactions** This schedule type applies future-dated payments and adjustments, and is able to re-calculate multicurrency transactions using current exchange rates. **Optional** Not required for process mapping

Interactions
Not required for process mapping

4.6.1.4 Level 3: Apply Pricing, Discounting, Adjustments & Rebates (1.1.1.10.1) – TM Forum Assessor Scores

1.1.1.10.1 Apply Pricing, Discounting, Adjustments & Rebates	
Grouping of Implied Tasks	**Score**
Obtain Billing Events (1.1.1.10.1.1)	*100%*
Apply Pricing, Discounting, Adjustments & Rebates to Customer Account (1.1.1.10.1.2)	*100%*
Apply Agreed Customer Bill Adjustment (1.1.1.10.1.3)	*100%*
Total score for Parent Level 3 Process	**300/300 = 100% = 5**

4.6.2 Level 3: Create Customer Bill Invoice (1.1.1.10.2)

Process Identifier: 1.1.1.10.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

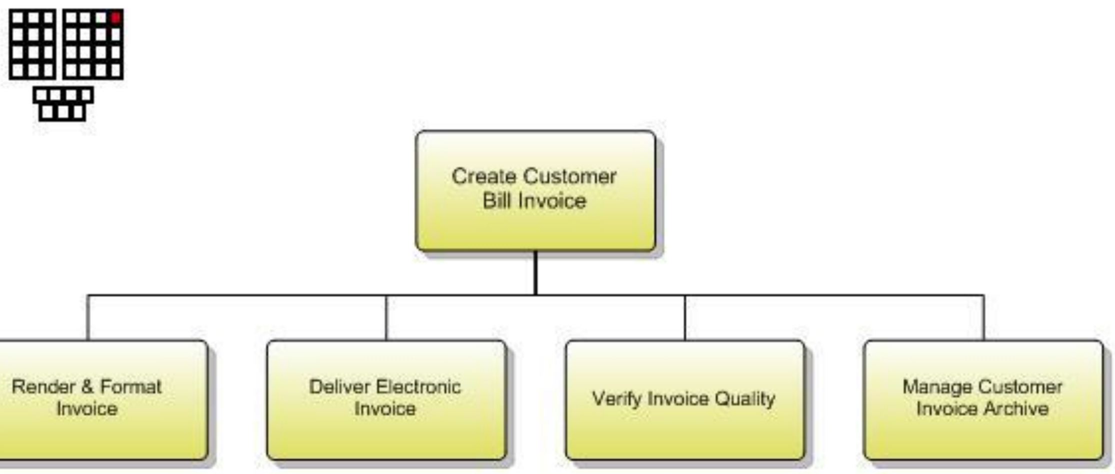


Figure 4.36 Create Customer Bill Invoice decomposition into level 4 processes

Process Identifier: 1.1.1.10.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Production of a timely and accurate invoice in accordance with the specific billing cycles and reflective of the final charges for services, together with any adjustments, delivered to the customer by the Service Provider and respective trading partners.

Extended Description

The primary purpose of the Create Customer Bill Invoice process is the production of a timely and accurate invoice in accordance with the specific billing cycles and reflective of the final charges for services, together with any adjustments, delivered to the customer by the Service Provider and respective trading partners.

This process contains the invoicing components of the Service Provider's business. This includes the rendering/formatting of an invoice, the delivery of an electronic copy of an invoice to customers and the processes that verify invoice quality prior to distribution to the customer in electronic form, or to the process responsible for physical invoice production and distribution. The flow of this process can be viewed as an extension of the company's e-business strategy. In this case, the Service Provider would render an invoice electronically, via the Internet for example.

Furthermore, this process provides specifications for the formatting of invoices in different ways and to achieve different publishing possibilities, and supports the creation of different invoice formats for different publication media. The process is further responsible for splitting and re-arranging invoices for customers (particularly customers with complex account structures) according to agreements made with these customers.

Additionally these processes store the customer invoice for a period of time to address regulation and/or internal requirements, during which they can be accessed to support any customer or regulator agency inquiries on bill invoices.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.6.2.1 Level 4: Render & Format Invoice (1.1.1.10.2.1) – Mapping Details

Process Identifier: 1.1.1.10.2.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

4.6.2.2 Render & Format Invoice (1.1.1.10.2.1) - Mapping Details

Level 4 PROCESS MAPPING DETAILS **1.1.1.10.2.1 Render & Format Invoice**
Brief Description Render and format the customer bill invoice. **Extended Description** This process provides formatting of invoices in different ways and to achieve different publishing possibilities, and supports the creation of different invoice formats for different publication media. The process is further responsible for splitting and re-arranging invoices for customers (particularly customers with complex account structures) according to agreements made with these customers. **Explanatory** Not used for this process element **Mandatory** This process provides formatting of invoices in different ways and to achieve different publishing possibilities, and supports the creation of different invoice formats for different publication media. The process is further responsible for splitting and re-arranging invoices for customers (particularly customers with complex account structures) according to agreements made with these customers. **A** [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10.2 **Create Customer Bill Invoice** Singleview supports multiple invoice formats that can be assigned per individual customer to reflect their specific preference. [AO] Billing Architecture → Invoice Generation Process (IGP) → Invoices and Statements Each customer in Convergent Billing must be assigned one or more invoice formats. An invoice format consists of a series of nested templates that determine the look and contents of the customer's invoice. The IGP creates an invoice image for each specified customer format by taking billing data from the database, including direct variables and subtotals, and inserting them into the invoice templates. [AO] Convergent Billing Data Model → Customer Data Model → Customer Model Entities **Accounts** If the customer is part of a customer hierarchy, each customer node is identified as an

invoice, statement, or no reporting node.

Customer Hierarchy In a business environment, there may be relationships between a head office and several branch offices that need to be reflected in Convergent Billing. Relationships can be displayed in a customer hierarchy where the head office is the parent customer, and all of the branch offices are child customers. Child customers can also be parent customers for further child customers.

The Convergent Billing customer hierarchy functionality allows the creation of a billing structure that reflects the organisational structure of a customer.

A customer hierarchy enables multiple billing or reporting points. For each point or level in the hierarchy, the customer can decide which level receives an invoice or statement (or neither). A customer's hierarchy is graphically represented using the Customer Hierarchy form.

[PD] 4.13.2 Invoice Contents

Invoices (requiring payment) and statements (for reporting purposes only) can contain summarised information, line by line details, or a mixture of both. For a customer hierarchy, invoices for payment can be sent to each node, with a statement going to a parent node, or a single invoice could be prepared for centralised payment, with statements going to the individual nodes (or other variations on this theme). The 'reporting level' attribute defined for each customer node controls this feature.

Optional

Not used for this process element

Interactions

Not used for this process element

4.6.2.3 Level 4: Deliver Electronic Invoice (1.1.1.10.2.2) – Mapping Details

Process Identifier: 1.1.1.10.2.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.10.2.2 Deliver Electronic Invoice
Brief Description Deliver the electronic copy of an invoice to customers. **Extended Description** The purpose of Deliver Electronic Invoice process is to deliver the electronic copy of an invoice to customers. The flow of this process can be viewed as an extension of the company’s e-business strategy. In this case, the Service Provider would render an invoice electronically, via the Internet for example. **Explanatory** The flow of this process can be viewed as an extension of the company’s e-business strategy. In this case, the Service Provider would render an invoice electronically, via the Internet for example. **Mandatory** The purpose of Deliver Electronic Invoice process is to deliver the electronic copy of an invoice to customers.**A** [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10.3 **Produce and Distribute Bill** Singleview plays a key role in making invoice information available to other processes, with the output in a legible format, as follows: • Each XML invoice file is available in the file system and can be retrieved for use by the required process. • CSRs can request invoices using XML files, and applying XSL transformations.

[PD] **4.13.3 Deliver Mechanism**

Singleview has the ability to produce .pdf invoice images, .ps postscript print files, or device independent XML invoice files. If a customer chooses to receive a paper invoice, this can be printed from the postscript files or the XML invoice files can be formatted by a print vendor for printing.
Users can view the exact invoice image that was printed or emailed to a customer to aid in the resolution of customer inquiries.
To streamline administration of customer hierarchies, particularly for large corporate accounts, the selection of the invoice format associated with a given node can be automated. A default assignment is made, based either on the characteristics of the parent node of the hierarchy, or the Customer Type of the individual node.

[CBO] Billing and Finance → **Document Output**

The final stage of rating and billing is the distribution of customer documents (for example, invoices and statements, debit and credit notes, and dunning letters) and it is performed by the GOP.
Document images are output either for printing or for inclusion on an alternative distribution medium.
During this process, the documents can be sorted into groups using multiple keys. For example, in a single pass, they can be sorted into states, then regions within states, and postal codes within regions.
Batches of documents can be combined in a format suitable for supply to a print vendor.

Optional

Not used for this process element

Interactions

Not used for this process element

4.6.2.4 Level 4: Verify Invoice Quality (1.1.1.10.2.3) – Mapping Details

Process Identifier: 1.1.1.10.2.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.10.2.3 Verify Invoice Quality**
Brief Description Verify invoice quality before distribution to the customer in electronic form and the process responsible for physical invoice production and distribution. **Extended Description** The purpose of Verify Invoice Quality process is to verify invoice quality prior to distribution to the customer in electronic form, or to the process responsible for physical invoice production and distribution. Verifying invoice quality is either a manual operation or an automatic behaviour. The process is responsible for ensuring the invoice format and content can meet customer requirements. When verifying invoice quality is failed, the process is also responsible for sending the invoice back to another process to reprocess. **Explanatory** Not used for this process element **Mandatory** The purpose of Verify Invoice Quality process is to verify invoice quality prior to distribution to the customer in electronic form, or to the process responsible for physical invoice production and distribution. Verifying invoice quality is either a manual operation or an automatic behaviour. The process is responsible for ensuring the invoice format and content can meet customer requirements. **AM** When verifying invoice quality is failed, the process is also responsible for sending the invoice back to another process to reprocess. **AM** [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10.2 **Create Customer Bill Invoice**

Bill production can be run in QA mode and the associated invoices are not applied to accounts, but are made available for quality assurance purposes.

[SOG] Operational Schedules and Tasks → **Bill Run Schedules →Bill Run Schedule Types**

A bill run schedule uses one of the following schedule types:

- Standard Bill Run, which generates an invoice sent out to customers.
- Quality Assurance Bill Run, which generates a temporary bill that is not sent to the customer and not paid; for example, this can be used for quality assurance purposes and quoting bill amounts.
- Complete Bill Run, which completes a standard bill run, a QA bill run, or a part thereof for the total bill run.
- Complete Bill Run for Customer, which completes a standard bill run, a QA bill run, or a part thereof for a specific customer hierarchy.

Optional

Not used for this process element

Interactions

Not used for this process element

4.6.2.5 Level 4: Manage Customer Invoice Archive (1.1.1.10.2.4) – Mapping Details

Process Identifier: 1.1.1.10.2.4

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.10.2.4 Manage Customer Invoice Archive**
Brief Description Store the customer invoice for a period of time is to address regulation and/or internal requirements, during which they can be accessed to support any customer or regulator agency inquiries on bill invoices. **Extended Description** The purpose of Management Customer Invoice Archive process is to store the customer invoice for a period of time, to perform regulation and/or serve internal requirements, during which they can be accessed to support any customer or regulator agency inquiries on bill invoices, and the process is further responsible for archiving the customer invoices to historical customer invoice after a period of time according to Service Provider's management requirements. Furthermore the process is responsible for managing and maintaining archiving cycle. **Explanatory** Not used for this process element **Mandatory** The purpose of Management Customer Invoice Archive process is to store the customer invoice for a period of time, to perform regulation and/or serve internal requirements, during which they can be accessed to support any customer or regulator agency inquiries on bill invoices, and the process is further responsible for archiving the customer invoices to historical customer invoice after a period of time according to Service Provider's management requirements. Furthermore the process is responsible for managing and maintaining archiving cycle.**A** [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10 2 **Create Customer Bill Invoice** An extensible XML schema used to define how invoice information is stored allows invoice documents to be fetched and processed by third parties. XML invoices consist of the following multiple sections:

- Header, containing details of the customer, invoice amounts, VAT charges, account-level invoice messages, and payments.
- Transaction summary, containing payment, adjustment, and product charge summary details.
- Account information, repeated as required for each customer account, and containing product details (including usage charges).

Singleview retains invoices online to support customer and regulatory agency enquiries. It facilitates an archiving facility to enable invoice information to be archived at the appropriate time in its lifecycle.

[SRG] Archive Types, Table 120

ACCOUNT_HISTORY records and transactions (payments, adjustments, and invoices) are archived

Optional

Not used for this process element

Interactions

Not used for this process element

4.6.2.6 Level 3: Create Customer Bill Invoice (1.1.1.10.2) – TM Forum Assessor Scores

1.1.1.10.2 Create Customer Bill Invoice	
Grouping of Implied Tasks	**Score**
Render & Format Invoice (1.1.1.10.2.1)	*100%*
Deliver Electronic Invoice (1.1.1.10.2.2)	*100%*
Verify Invoice Quality (1.1.1.10.2.3)	*100%*
Manage Customer Invoice Archive (1.1.1.10.2.4)	*100%*
Total score for Parent Level 3 Process	**100% = 5**

4.6.3 Level 3: Produce & Distribute Bill (1.1.1.10.3)

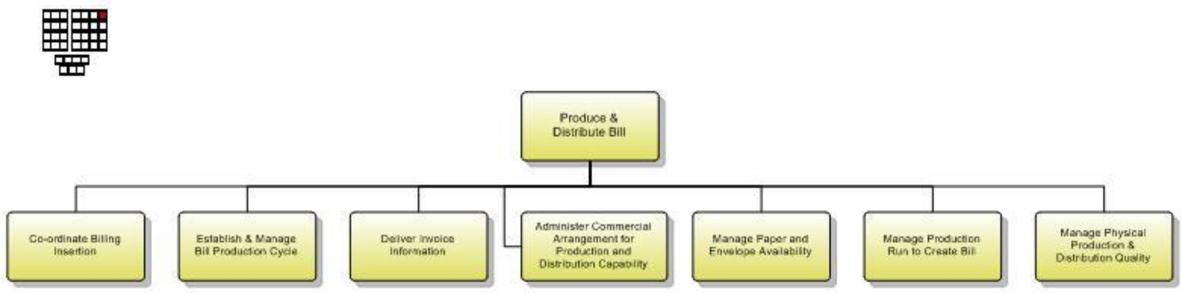


Figure 4.37 Produce & Distribute Bill decomposition into level 4 processes

Process Identifier: 1.1.1.10.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Physical production and distribution of bills to customers in accordance with the specified billing cycle.

Extended Description

The purpose of the Produce & Distribute Customer Bill Invoice process is the physical production and distribution of bills to customers in accordance with the specified billing cycle. This process is responsible for all activities associated with ensuring a physical bill is delivered to customers.

The responsibilities of the process include, but are not limited to:

• Establishing and managing the physical bill production cycle;

• Establishing the requirements for, and managing the agreed commercial arrangements with, appropriate outsourced suppliers of the production and distribution capabilities;

• Delivery of invoice information to the physical production processes;

• Coordinating with promotional processes for any billing insertions to be included with the bill;

• If internal processes are used, managing availability of paper and envelope volumes to meet the needs of the physical production process;

• If internal production facilities are used, managing the production runs to create the bills; and

• Quality management of the physical production and distribution processes.

Note that in the above processes for establishing arrangements with outsourced suppliers that the Supply Chain Capability Delivery processes are used as the vehicle for creating the commercial agreements.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.6.3.1 Level 4: Co-ordinate Billing Insertion (1.1.1.10.3.1) – Mapping Details

Process Identifier: 1.1.1.10.3.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

<table>
<tr><th>Level 4 PROCESS MAPPING DETAILS
1.1.1.10.3.1 - Co-ordinate Billing Insertion</th></tr>
<tr><td>

Brief Description

Co-ordinate with promotional processes for any billing insertions to be included with the bill.

Extended Description

The purpose of Co-ordinate Billing Insertion process is to co-ordinate with promotional processes for any billing insertions to be included with the bill. This process is responsible for determining the content of insertion and the position of insertion in invoice. The insertion can be the service information provided by Service Provider, advertisements and recommendation of billing for customers. This process is also responsible for ensuring the billing insertion attracting the customer interests and not leading to customer complaints. This process can base customer feedbacks on the insertion to adjust or remove the insertion.

Explanatory

The purpose of Co-ordinate Billing Insertion process is to co-ordinate with promotional processes for any billing insertions to be included with the bill.

Mandatory

This process is responsible for determining the content of insertion and the position of insertion in invoice. The insertion can be the service information provided by Service Provider, advertisements and recommendation of billing for customers. This process is also responsible for ensuring the billing insertion attracting the customer interests and not leading to customer complaints.**AM**

[BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10 3 Produce and Distribute Bill

Singleview does not produce hard copy invoices. However it produces invoice information to produce final invoices, including billing information and marketing (or other) messages.
Singleview manages the billing insertion process (Co-ordinate Billing Insertion) by providing the capability to include marketing/informational messages in the invoice information. Fixed text messages can be included on the printed invoice.
[PD] **4.13.2 Invoice Contents**

Invoice messages are used for a variety of purposes. These may include:
</td></tr>
</table>

- Statutory messages that must be displayed due to federal, state or local legislation.
- Details of promotional plans or offers.
- Details of events which will affect the customer (for example, rate changes).
- First bill/welcome messages.
- Final bill messages.
- Past due messages.

Once invoice messages are configured, it is possible to specify the criteria by which a particular invoice message is selected for display on the invoice; for example, the service provider may select a special welcoming message for new customers to be printed.

Optional

This process can base customer feedbacks on the insertion to adjust or remove the insertion.

Interactions

Not used for this process element

4.6.3.2 Level 4: Establish & Manage Bill Production Cycle (1.1.1.10.3.2) – Mapping Details

Process Identifier: 1.1.1.10.3.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.10.3.2 - Establish & Manage Bill Production Cycle**
Brief Description Establish and manage the physical bill production cycle. **Extended Description** The purpose of Establish & Manage Bill Production Cycle process is to establish and manage the physical bill production cycle. This process is responsible for identifying the deadline of the customer requiring physical bill productions, time cycle for producing and distributing to ensure that the physical bill production can be received by the customer on time. This process is responsible for ensuring that physical bills are produced in time to be received by customers on time. This process takes production and distribution cycle timing into account when establishing bill production schedules. **Explanatory** The purpose of Establish & Manage Bill Production Cycle process is to establish and manage the physical bill production cycle. **Mandatory** This process is responsible for identifying the deadline of the customer requiring physical bill productions, time cycle for producing and distributing to ensure that the physical bill production can be received by the customer on time. This process is responsible for ensuring that physical bills are produced in time to be received by customers on time. This process takes production and distribution cycle timing into account when establishing bill production schedules.**A** [BOD] eTOM 1.1.1.10 Bill Invoice Management → **eTOM 1.1.1.10 2 Create Customer Bill Invoice** Singleview allows customer invoices to be created both on demand and periodically, for specific billing cycles. Customers are assigned to a bill cycle based on business logic, which often is outside of Singleview, and usually corresponds to the customer's preferred invoice date. Bill cycles can be of any frequency (for example, monthly, quarterly, or annually), and their schedule is controlled by operations staff.

The bill run effective date is logically separated from the bill run execution date, which is usually sometime after the effective date, to allow the Manage Billing Events process to process late-landing events so that they are available for inclusion in invoices. The bill run effective date is used as the:

- Upper date threshold for any charges included in the bill run.

  Charges dated after this date are not included in invoices, even if they are available at the time of the bill run.

- Date by which customer, account, and product information is assessed for inclusion.

  Discounting products cancelled as of this date is not effective.

- Date for any recurring charge calculation.
- Date the invoice financial transaction will be applied to the account.
- Basis for calculating the invoice issue and due dates.

[SCG] Billing Process Configuration and Optimisation → Bill Run Configuration

Convergent Billing has the following features for bill run processing:

- Customers within a bill run can be separated into batches, which can be processed in parallel, using bill run schedule types. Processing batches of customers in parallel can enhance bill run performance.

  Adequate trergp, trebgp, and treigp (and adequate trerodb processes advertising the biBillrunRO server) servers must be configured to handle the multiple batch streams. If there are not adequate billing servers, one batch stream blocks (possibly timing out) because the other stream is using the only available server to do its processing.

  The billing servers must be configured using Tuxedo configuration (see the *Tuxedo Guide for Singleview*).

- The priority for processing customers in a bill run is defined for each customer on the Customer Detail form.
- Customers within batches can also be processed in parallel and different customers on the same bill run can be processed using different streaming options:
  - Each customer is assigned a billing configuration and the billing configuration is mapped to a specific billing compliant function. Convergent Billing is delivered with a set of billing compliant functions; however, new functions can also be created.
  - Mapped functions are executed by making a Tuxedo call to a specific service.
  - Billing TRE servers (for example, trebgp or treigp) are configured in the Tuxedo configuration file, ubbconfig.tpl.
  - Each TRE server is associated with a configuration item, which defines the streaming options for that server.

Optional

Not used for this process element

Interactions

Not used for this process element

4.6.3.3 Level 4: Deliver Invoice Information (1.1.1.10.3.3) – Mapping Details

Process Identifier: 1.1.1.10.3.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.10.3.3 - Deliver Invoice Information**
Brief Description Deliver the invoice information to the physical production processes. **Extended Description** The purpose of the Deliver Invoice Information process is to ensure that the invoice information can be delivered to invoice physical production process. The invoice information includes both billing information and insertion information. This process is also responsible for monitoring the status of information delivery channel and ensuring the channel availability. **Explanatory** The invoice information includes both billing information and insertion information. **Mandatory** The purpose of the Deliver Invoice Information process is to ensure that the invoice information can be delivered to invoice physical production process. This process is also responsible for monitoring the status of information delivery channel and ensuring the channel availability.AM Note: *Singleview produces invoices files, provides the interface to a partner responsible for the physical production and controls such as number of documents in a file, number of pages when transmitting files to the bill printing partner, frequency of uploads.* [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10 3 Produce and Distribute Bill Singleview does not produce hard copy invoices. However it produces invoice information to produce final invoices, including billing information and marketing (or other) messages. Singleview manages the billing insertion process (Co-ordinate Billing Insertion) by providing the capability to include marketing/informational messages in the invoice information. Fixed text messages can be included on the printed invoice. Singleview plays a key role in making invoice information available to other processes, with the output in a legible format, as follows: • Each XML invoice file is available in the file system and can be retrieved for use by the

required process.

- CSRs can request invoices using XML files, and applying XSL transformations.

[PD] 4.13.4 Print Vendor Interface

Many service providers use Print Vendors as a means of printing invoices, statements and other documents for dispatch to customers. Singleview supports the functionality required by a Print Vendor giving a service provider the ability to:

- Pre-sort document images.
- Custom-select document images.
- Extract document images from the Singleview database into a file for printing.
- Generate documents in graphic format or in a data format such as XML.
- Supply controls such as number of documents in a file, number of pages when transmitting files to the Print Vendor. These controls will aid accurate settlement
- Order and sort documents to qualify for postal delivery discounts.
- Support ad-hoc customer reprint requests.
- Schedule Print Vendor uploads as frequently as required. For efficiency, a single file transmission should be capable of containing invoices, statements, dunning letters and reprint images.

Optional

Not used for this process element

Interactions

Not used for this process element

4.6.3.4 Level 4: Administer Commercial Arrangement for Production and Distribution Capability (1.1.1.10.3.4) – Mapping Details

Process Identifier: 1.1.1.10.3.4

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.10.3.4 - Administer Commercial Arrangement for Production and Distribution Capability
Brief Description Establish the requirements for, and manage the agreed commercial arrangements with, appropriate outsourced suppliers of the production and distribution capabilities. **Extended Description** The purpose of Administer Commercial Arrangement for Production and Distribution Capability process is to establish the requirements for, and manage the agreed commercial arrangements with, appropriate outsourced suppliers of the production and distribution capabilities. This process is responsible for output of the production and distribution requirements to outsourced supplier and amending the requirements based on the negotiation between Service Provider and outsourced supplier. This process is also responsible for drafting commercial contracts terms, including the responsibilities, payment condition, payment type, SLA, and signing the commercial contract with outsource supplier. **Explanatory** Not used for this process element **Mandatory** The purpose of Administer Commercial Arrangement for Production and Distribution Capability process is to establish the requirements for, and manage the agreed commercial arrangements with, appropriate outsourced suppliers of the production and distribution capabilities. This process is responsible for output of the production and distribution requirements to outsourced supplier and amending the requirements based on the negotiation between Service Provider and outsourced supplier. This process is also responsible for drafting commercial contracts terms, including the responsibilities, payment condition, payment type, SLA, and signing the commercial contract with outsource supplier. M

Note: *Singleview produces invoices files, provides the interface to a partner responsible for the physical production and controls such as number of documents in a file, number of pages when transmitting files to the bill printing partner, frequency of uploads. These controls are configured according to the commercial agreement with the provider of the printing service. Details for the negotiation of the commercial agreement are part of the supporting process between the service provider and the partner*.

[BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10 3 Produce and Distribute Bill

[PD] 4.13.4 Print Vendor Interface

Optional

Not used for this process element

Interactions

Not used for this process element

4.6.3.5 Level 4: Manage Paper and Envelope Availability (1.1.1.10.3.5) – Mapping Details

Process Identifier: 1.1.1.10.3.5

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.10.3.5 - Manage Paper and Envelope Availability**
Brief Description Manage availability of paper and envelope volumes to meet the needs of the physical production process, if internal processes are used. **Extended Description** The purpose of the Manage Paper and Envelope Availability process is to ensure the quantities of papers and envelopes are enough before starting invoice physical production. This process is responsible for ensuring the quality of paper and envelopes that fit the requirements from subsequent invoice physical production processes. For example the volume of envelope is suitable. If the requirements don’t fit, this process is responsible for detecting the problems and reporting to other processes if required. **Explanatory** Not used for this process element **Mandatory** The purpose of the Manage Paper and Envelope Availability process is to ensure the quantities of papers and envelopes are enough before starting invoice physical production. This process is responsible for ensuring the quality of paper and envelopes that fit the requirements from subsequent invoice physical production processes. For example the volume of envelope is suitable. If the requirements don’t fit, this process is responsible for detecting the problems and reporting to other processes if required. M Note: *we assume the availability and quality of paper is controlled by the support processes internal to the operator or to the printing partner. Singleview support these processes producing the invoices files, providing the interface to the partner and relevant information such as the number of documents in a file, number of pages and controlling.*

[BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10 3 Produce and Distribute Bill

[PD] 4.13.4 Print Vendor Interface

Optional

Not used for this process element

Interactions

Not used for this process element

4.6.3.6 Level 4: Manage Production Run to Create Bill (1.1.1.10.3.6) – Mapping Details

Process Identifier: 1.1.1.10.3.6

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.10.3.6 - Manage Production Run to Create Bill
Brief Description Manage the production runs to create the bills, if internal production facilities are used. **Extended Description** The purpose of Manage Production Run to Create Bill process is to manage the production runs to create the bills, if internal production facilities are used. This process is responsible for producing the physical bill based on the invoice information and, if necessary, wrapping bills into envelopes. The process also is responsible for monitoring that the produced bills are ready to be distributed. **Explanatory** Not used for this process element **Mandatory** The purpose of Manage Production Run to Create Bill process is to manage the production runs to create the bills, if internal production facilities are used. This process is responsible for producing the physical bill based on the invoice information and, if necessary, wrapping bills into envelopes. The process also is responsible for monitoring that the produced bills are ready to be distributed. M Note: *Singleview produces invoices files and support the production of physical bills providing the interface to a partner and controlling the number of documents in a file, number of pages when transmitting files to the bill printing partner, frequency of uploads.* [BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10 3 Produce and Distribute Bill [PD] 4.13.4 Print Vendor Interface **Optional** Not used for this process element

Interactions
Not used for this process element

4.6.3.7 Level 4: Manage Physical Production & Distribution Quality (1.1.1.10.3.7) – Mapping Details

Process Identifier: 1.1.1.10.3.7

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.10.3.7 - Manage Physical Production & Distribution Quality
Brief Description Manage quality of the physical production and distribution processes, if internal production facilities are used. **Extended Description** The purpose of Manage Physical Production & Distribution Quality process is to manage quality of the physical production and distribution processes, if internal production facilities are used. This process is responsible for monitoring the whole physical production and distribution running, check the quality and validity of production and observing the distribution time cycle. The quality and validity of production can include correct association of customer, bill and time period of bill, printing quality, format of the production. This process is responsible for ensuring that the contents of production, including billing parts and insertion parts, are satisfied by customers and the productions can be delivered to customers' address on time and accurately. This process is also responsible for monitoring the efficiency of production process to ensure that the production process can timely produce a large number of productions to avoid distribution delay. **Explanatory** Not used for this process element **Mandatory** The purpose of Manage Physical Production & Distribution Quality process is to manage quality of the physical production and distribution processes, if internal production facilities are used. This process is responsible for monitoring the whole physical production and distribution running,

check the quality and validity of production and observing the distribution time cycle.

This process is responsible for ensuring that the contents of production, including billing parts and insertion parts, are satisfied by customers and the productions can be delivered to customers' address on time and accurately.

This process is also responsible for monitoring the efficiency of production process to ensure that the production process can timely produce a large number of productions to avoid distribution delay. AM

Note: *Singleview produces invoices files and support the production and distribution of physical bills providing the interface to a partner and controlling the number of documents in a file, number of pages when transmitting files to the bill printing partner, frequency of uploads.*

[BOD] eTOM 1.1.1.10 Bill Invoice Management → eTOM 1.1.1.10 3 Produce and Distribute Bill

[PD] 4.13.4 Print Vendor Interface

Optional

The quality and validity of production can include correct association of customer, bill and time period of bill, printing quality, format of the production.

Interactions

Not used for this process element

4.6.3.8 Level 3: Produce & Distribute Bill (1.1.1.10.3) – TM Forum Assessor Scores

1.1.1.10.3 Produce & Distribute Bill	
Grouping of Implied Tasks	**Score**
1.1.1.10.3.1 - Co-ordinate Billing Insertion	*100%*
1.1.1.10.3.2 - Establish & Manage Bill Production Cycle	*100%*
1.1.1.10.3.3 - Deliver Invoice Information	*100%*
1.1.1.10.3.4 - Administer Commercial Arrangement for Production and Distribution Capability	*100%*
1.1.1.10.3.5 - Manage Paper and Envelope Availability	*100%*
1.1.1.10.3.6 - Manage Production Run to Create Bill	*100%*
1.1.1.10.3.7 - Manage Physical Production & Distribution Quality	*100%*
Total score for Parent Level 3 Process	**100% = 5**

4.6.4 Supporting Evidence References (Works Cited)

AO	Singleview 8.0 Architecture Overview, documentation for release 8.00.04, d-sv-aov.zip
BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
SOG	System Operations Guide for Singleview Convergent Billing, documentation for release 8.00.04, d-cb-sog.zip
PD	Singleview Version 8.00 PRODUCT DESCRIPTION, Singleview_v8_00_product_description-final.pdf
CBO	Overview for Singleview Convergent Billing v8.00, d-cb-ovr.zip
SRG	System Reference Guide for Singleview v8.00, d-sv-srg.zip
SCG	System Configuration Guide for Singleview Convergent Billing v8.00, d-cb-scg.zip

4.6.5 Level 2: Bill Invoice Management (1.1.1.10) – Conformance Results

Table 4.6 Level 2: Bill Invoice Management (1.1.1.10) – Conformance Results

1.1.1.10 - Bill Invoice Management	
Level 3 Processes	**Score**
1.1.1.10.1 - Apply Pricing, Discounting, Adjustments & Rebates	5
1.1.1.10.2 - Create Customer Bill Invoice	5
1.1.1.10.3 - Produce & Distribute Bill	5

4.7 L2: Bill Payments & Receivables Management (1.1.1.11)

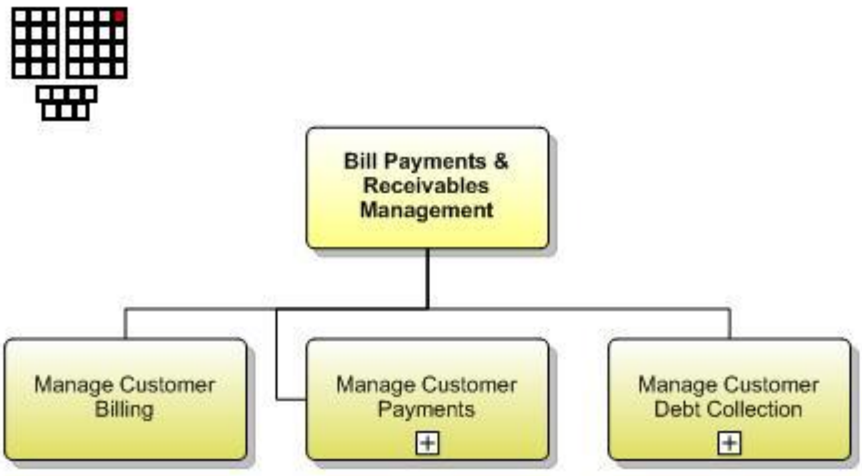


Figure 4.38 Bill Payment & Receivables Management decomposition into level 3 processes

Process Identifier: 1.1.1.11

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure that enterprise revenue is collected through pre-established collection channels and put in place procedures to recover past due payments.

Extended Description

The purpose of the Bill Payments & Receivables Management processes is to ensure that enterprise revenue is collected through pre-established collection channels and put in place procedures to recover past due payments. These processes are responsible for managing customer's billing account, processing their payments, performing payment collections and monitoring the status of the account balance.

These processes are responsible for, but not limited to:

• Establishment and management of customer payment processes and channels;

• Establishment and management of debt collection processes; and

• Establishment and management of third party arrangements to support collection and recovery of past due payments.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.7.1 Level 3: Manage Customer Billing (1.1.1.11.1)

Process Identifier: 1.1.1.11.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

4.7.1.1 Level 3: Manage Customer Billing (1.1.1.11.1) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

Level 3 PROCESS MAPPING DETAILS 1.1.1.11.1 – Manage Customer Billing
Brief Description Ensure effective management of the customer's billing account as it relates to the products purchased and consumed throughout the appropriate billing cycle. **Extended Description** The primary purpose of this process pertains to effective management of the customer's billing account as it relates to the products purchased and consumed throughout the appropriate billing cycle. This process focuses on managing changes to the customer's billing account (for example, customer billing address, etc.) as it relates to the customer's service portfolio, such as ensuring that the correct purchased products are assigned to the customer's billing account for accurate billing. AM *Note: Manual activities required by this process are related to information capture (e.g. by CSRs on their screens).* **[BOD] eTOM 1.1.1.11 Bill Payments & Receivables Management → eTOM 1.1.1.11.1 Manage Customer Billing** Singleview allows full management of customer billing accounts, including: • Account type, for example pre-paid or post-paid. • Billing address. • Setting of credit limits. • Specification of invoice format and media options. • Assignment to billing cycles. • Specification of the currency that an account operates in. • Maintenance of all account associations.

[CMEUG] **How Do I? → Create and Change Contacts and Customers**, in particular the following sub-sections:

- Create a Customer
- Create a Customer for an Existing Contact
- Update Contact Details
- Update Customer Details

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.7.1.2 Level 3: Manage Customer Billing (1.1.1.11.1) – TM Forum Assessor Scores

1.1.1.11.1 Manage Customer Billing - Scores	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.7.2 Level 3: Manage Customer Payments (1.1.1.11.2)

Process Identifier: 1.1.1.11.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

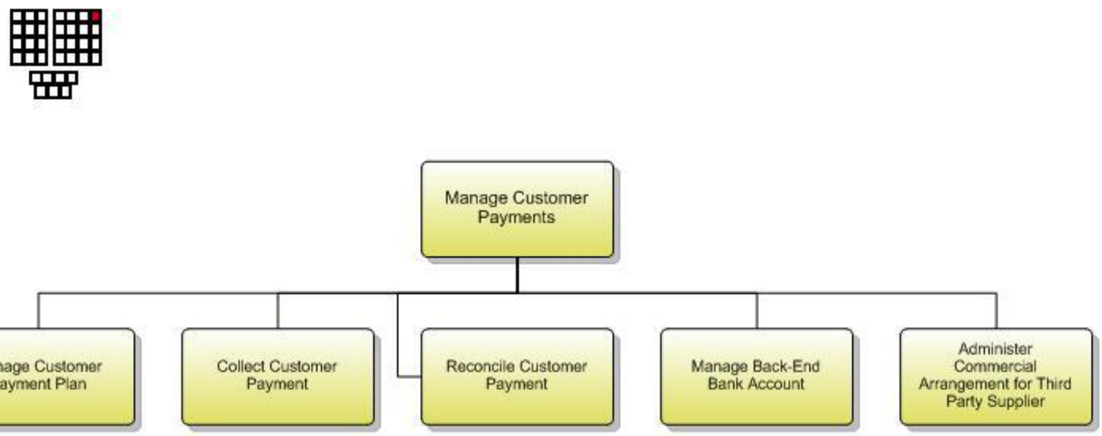


Figure 4.39 Manage Customer Payments decomposition into level 4 processes

Process Identifier: 1.1.1.11.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Production of a timely and accurate invoice in accordance with the specific billing cycles and reflective of the final charges for services, together with any adjustments, delivered to the customer by the Service Provider and respective trading partners.

Extended Description

The primary purpose of the Create Customer Bill Invoice process is the production of a timely and accurate invoice in accordance with the specific billing cycles and reflective of the final charges for services, together with any adjustments, delivered to the customer by the Service Provider and respective trading partners.

This process contains the invoicing components of the Service Provider's business. This includes the rendering/formatting of an invoice, the delivery of an electronic copy of an invoice to customers and the processes that verify invoice quality prior to distribution to the customer in electronic form, or to the process responsible for physical invoice production and distribution. The flow of this process can be viewed as an extension of the company's e-business strategy. In this case, the Service Provider would render an invoice electronically, via the Internet for example.

Furthermore, this process provides specifications for the formatting of invoices in different ways and to achieve different publishing possibilities, and supports the creation of different invoice formats for different publication media. The process is further responsible for splitting and re-arranging invoices for customers (particularly customers with complex account structures) according to agreements made with these customers.

Additionally these processes store the customer invoice for a period of time to address regulation and/or internal requirements, during which they can be accessed to support any customer or regulator agency inquiries on bill invoices.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.7.2.1 Level 4: Manage Customer Payment Plan (1.1.1.11.2.1) – Mapping Details

Process Identifier: 1.1.1.11.2.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.11.2.1 – Manage Customer Payment Plan
Brief Description Manage payment plans made with the customer. **Extended Description** The purpose of Manage Customer Payment Plan process is to establish new payment plans, modify or remove existing payment plans. Customer can decide payment plans to automatically pay bills from a designated account that can be credit card, back account, third party and etc. It also enables paying a bill in installment. For example, customer can apply make a payment $20 per month for $100 bill in 5 months. The payment plan can enable making a payment by pre-defined payment method. For example, customer defines paying mobile monthly line rental fee by direct debt and paying digital TV programmes by cash. **Explanatory** Customer can decide payment plans to automatically pay bills from a designated account that can be credit card, back account, third party and etc. It also enables paying a bill in installment. For example, customer can apply make a payment $20 per month for $100 bill in 5 months. The payment plan can enable making a payment by pre-defined payment method. For example, customer defines paying mobile monthly line rental fee by direct debt and paying digital TV programmes by cash. **Mandatory** The purpose of Manage Customer Payment Plan process is to establish new payment plans, modify or remove existing payment plans.AM *Note: Manual part of this process is related to data capture and, in the case of installments, performing the negotiations with the customer. Usually these activities are performed by CSRs with the proper training, skillset and experience.*

[BOD] eTOM 1.1.1.11.2 Manage Customer Payments

The following payment methods are supported:

- Individual payments (for example, card payment using the Singleview agent UI or the service provider's web site […]

- Batch processing (for example, payments received by a third party such as a post office and provided as files of receipts, and reconciliation against the total expected value reported by source […]

- Auto-pay/direct debit, both the maintenance of the mandate and the drawing down of funds against the mandate.

    - […]Customer to suspend or cancel their mandate.

    - Automatically suspend a mandate on a configurable number of consecutive rejections by the financial institution.

    - Make customer-initiated payments by alternative methods while an auto-pay/direct debit mandate is in effect.

[BOD] eTOM 1.1.1.11.3 Manage Customer Debt Collection

The functionality provided by this configurable workflow includes:

- […]Creation of a promise to pay installment plan.

Optional

Not used for this process element

Interactions

Not used for this process element

4.7.2.2 Level 4: Collect Customer Payment (1.1.1.11.2.2) – Mapping Details

Process Identifier: 1.1.1.11.2.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.11.2.2 – Collect Customer Payment
Brief Description Collect payments made by the customer. **Extended Description** The purpose of Collect Customer Payment process is to collect the payments from the customer. These processes can include credit/debit/EFT payments using various channels, either directly or through third parties, and cash or check payments, either directly or through third parties. To the extent that processing of any payments is undertaken internally, i.e. check processing, these processes are responsible for managing the operation and quality of the internal processing. Note that the Establish Back-End Bank Account process is used to create the link to collection customer payment via bank. **Explanatory** Note that the Establish Back-End Bank Account process is used to create the link to collection customer payment via bank. **Mandatory** The purpose of Collect Customer Payment process is to collect the payments from the customer. To the extent that processing of any payments is undertaken internally, i.e. check processing, these processes are responsible for managing the operation and quality of the internal processing. **AM** *Note: Manual data capture is required.* **[BOD] eTOM 1.1.1.11.2 Manage Customer Payments** The following payment methods are supported: • Individual payments (for example, card payment using the Singleview agent UI or the service provider's web site […] • Batch processing (for example, payments received by a third party such as a post

office and provided as files of receipts, and reconciliation against the total expected value reported by source […]

- Auto-pay/direct debit […]

Optional

These processes can include credit/debit/EFT payments using various channels, either directly or through third parties, and cash or check payments, either directly or through third parties.

Interactions

Not used for this process element

4.7.2.3 Level 4: Reconcile Customer Payment (1.1.1.11.2.3) – Mapping Details

Process Identifier: 1.1.1.11.2.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.11.2.3 – Reconcile Customer Payment**
Brief Description Reconcile the payments to the invoices. **Extended Description** The purpose of Reconcile Customer Payment process is to reconcile the payments to the invoices. This process is meant to match these payments with the services/invoices delivered to this customer. Where payments do not match invoices, this process is responsible for informing the Manage Customer Debt Collection processes of any underpayments, and the Bill Inquiry Handling processes for any over-payments. Underpayments and overpayments are handled appropriately by these separate processes. These processes are responsible for reconciling the money received into the bank accounts against the payments expected in the invoices. Additionally these processes inform the Financial Management on all those payments for updating the ledger. **Explanatory** Underpayments and overpayments are handled appropriately by Manage Customer Debt Collection and Bill Inquiry Handling processes. **Mandatory** The purpose of Reconcile Customer Payment process is to reconcile the payments to the invoices. This process is meant to match these payments with the services/invoices delivered to this customer. Where payments do not match invoices, this process is responsible for informing the Manage Customer Debt Collection processes of any underpayments, and the Bill Inquiry Handling processes for any over-payments. These processes are responsible for reconciling the money received into the bank accounts against the payments expected in the invoices. Additionally these processes inform the Financial Management on all those payments for updating the ledger. AM *Note: Manual actions are required for dispatching a notification of over-payments to the Bill Inquiry Handling processes, and reconciliation of bank accounts with payments received.*

[PD] 4.17.7 Open Invoice

Open invoice functionality is also available through the flexibility of Singleview. Invoices can be treated as separate entities, with respective outstanding balances owed. Payments can then be directed to particular invoices depending on customer request or user allotment.

[PD] 4.18 Credit Management

The collections or treatment process is configurable based on customer type, credit class, credit limit, **amount overdue and duration outstanding**. […] Some steps, such as sending an initial letter, require no CSR interaction and are automatically generated by the system.

[PD] 4.19 General Ledger

[…] Singleview maintains an internal sales journal, to which transactions are posted on a regular basis. Transactions posted to the sales journal include usage charges, billing charges, **payments** and adjustments. […] Transactions are posted to the appropriate period according to their effective date.

[BOD] Singleview Reports (XML) → Convergent Billing Reports

Payment Reconciliation	Provides a daily summary of payment activity […]

Optional

Not used for this process element

Interactions

Not used for this process element

4.7.2.4 Level 4: Manage Back-End Bank Account (1.1.1.11.2.4) – Mapping Details

Process Identifier: 1.1.1.11.2.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.11.2.4 – Manage Back-End Bank Account**
Brief Description Manage back-end bank accounts for receipt of the customer payments and for the transfer of funds collected by third parties. **Extended Description** The purpose of Manage Back-End Bank Account process is to manage back-end bank accounts for receipt of the customer payments and for the transfer of funds collected by third parties. These processes are responsible for managing payment commercial agreement agreed with banks and the payment interfaces for collecting the customer payments. **Explanatory** Not used for this process element **Mandatory** The purpose of Manage Back-End Bank Account process is to manage back-end bank accounts for receipt of the customer payments and for the transfer of funds collected by third parties. These processes are responsible for managing payment commercial agreement agreed with banks and the payment interfaces for collecting the customer payments. AM *Note: Establishing of back-end bank accounts is a process that varies from one deployment to another. Payment bank information afterwards is captured and stored in the system for interactions with customer via the regular Customer Interface Management processes.* **[BOD] eTOM 1.1.1.2 Customer Interface Management → eTOM 1.1.1.2.1 Manage Contact** [...]Details associated with the maintenance of a customer's account (for example, **payment details**, invoice cycles, and products) are captured in the Customer view.

Optional

Not used for this process element

Interactions

Not used for this process element

4.7.2.5 Level 4: Administer Commercial Arrangement for Third Party Supplier (1.1.1.11.2.5) – Mapping Details

Process Identifier: 1.1.1.11.2.5

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.11.2.5 – Administer Commercial Arrangement for Third Party Supplier
Brief Description Establish the requirements for, and manage any commercial arrangements agreed with, third party suppliers. **Extended Description** The purpose of Administer Commercial Arrangement for Third Party Supplier process is to establish the requirements for, and manage any commercial arrangements agreed with, third party suppliers of payment services. The requirements can include payment transfer cycle, payment interface requirements and payment methods requirements. After commercial arrangements are agreed, this process is responsible for monitor the execution of the commercial arrangements. Note that the Supply Chain Capability Delivery process is used to deliver the commercial agreements. **Explanatory** The requirements can include payment transfer cycle, payment interface requirements and payment methods requirements. Note that the Supply Chain Capability Delivery process is used to deliver the commercial agreements. **Mandatory** The purpose of Administer Commercial Arrangement for Third Party Supplier process is to establish the requirements for, and manage any commercial arrangements agreed with, third party suppliers of payment services. After commercial arrangements are agreed, this process is responsible for monitor the execution of the commercial arrangements. AM *Note: Similarly to process 1.1.1.11.2.4, management of commercial agreements between the enterprise and 3rd parties is very deployment-specific, and performed in a manual fashion. After the agreements are in place, however, sufficient information is stored in the system database to allow efficient monitoring of such agreements, e.g. by reports that consider payment attributes such as*

channel, bank information, etc.

[BOD] Singleview Reports (XML) → Convergent Billing Reports

Payment Reconciliation	Provides a daily summary of payment activity. […]

Optional

Not used for this process element

Interactions

Not used for this process element

4.7.2.6 Level 3: Manage Customer Payments (1.1.1.11.2) – TM Forum Assessor Scores

1.1.1.11.2 Manage Customer Payments	
Grouping of Implied Tasks	**Score**
Manage Customer Payment Plan (1.1.1.11.2.1)	*100%*
Collect Customer Payment (1.1.1.11.2.2)	*100%*
Reconcile Customer Payment (1.1.1.11.2.3)	*100%*
Manage Back-End Bank Account (1.1.1.11.2.4)	*100%*
Administer Commercial Arrangement for Third Party Supplier (1.1.1.11.2.5)	*100%*
Total score for Parent Level 3 Process	**500/500 = 100% = 5**

4.7.3 Level 3: Manage Customer Debt Collection (1.1.1.11.3)

Figure 4.40 Manage Customer Debt Collection decomposition into level 4 processes

Process Identifier: 1.1.1.11.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Collect past due payments from the customer.

Extended Description

The purpose of the Manage Customer Debt Collection process is to collect past due payments from the customer. This process monitors the amount due from the customer, i.e. check whether the payments are made on time, and implements necessary activities and policies to recover amounts overdue.

The responsibilities of this process include, but are not limited to:

• Identifying invoices which are overdue for payment;

• Initiating and managing follow-up with customers having overdue amounts;

• Arranging and monitoring payment plans to allow customers to pay overdue amounts in installments;

• Initiating debt recovery activities in accordance with appropriate commercial practice and policies;

• Managing the aged customer debt portfolio;

• Establishing and managing customer debt profiles to assist in managing debt recovery and debt risk on a customer, product or customer group basis;

• Establishing and managing commercial arrangements with third parties for the recover of aged debt, and/or for the write-off and selling of parts of the debt portfolio to third parties

Note that these processes may initiate a direct enquiry to the customer and attempt to manage the initial recovery through the Bill Inquiry Handling processes. These processes use policies established by the Support Bill Payments & Receivable Management process to direct any escalation of the recovery processes being employed.

Note that where third party arrangements need to be put in place, these processes are responsible for establishing the requirements for, and managing any commercial arrangements agreed with, third party suppliers. The Supply Chain Capability Delivery process is used to deliver the commercial agreements.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.7.3.1 Level 4: Identify Overdue Invoice (1.1.1.11.3.1) – Mapping Details

Process Identifier: 1.1.1.11.3.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.11.3.1 – Identify Overdue Invoice
Brief Description Identify invoices which are overdue for payment. **Extended Description** The purpose of Identify Overdue Invoice process is to identify invoices which are overdue for payment. It monitors the amount due from the customer, i.e. check whether the payments are made on time, and implements necessary activities and policies to recover amounts overdue. **Explanatory** i.e. check whether the payments are made on time, and implements necessary activities and policies to recover amounts overdue. **Mandatory** The purpose of Identify Overdue Invoice process is to identify invoices which are overdue for payment. It monitors the amount due from the customer A [BOD] eTOM 1.1.1.11 Bill Payments & Receivables Management → eTOM 1.1.1.11 3 Manage Customer Debt Collection Singleview provides configurable workflows to recover overdue debt. […] The functionality provided by this configurable workflow includes: • […] Configurable collection workflow based on a combination of customer attributes (for example, customer type, credit class, credit limit), amount owing, and **age of debt**. **Optional** Not used for this process element

Interactions

Not used for this process element

4.7.3.2 Level 4: Administer Overdue Invoice Follow-Up (1.1.1.11.3.2) – Mapping Details

Process Identifier: 1.1.1.11.3.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.11.3.2 - Administer Overdue Invoice Follow-Up**
Brief Description Initiate and manage follow-up with customers having overdue amounts. **Extended Description** The purpose of Administer Overdue Invoice Follow-Up process is to initiate and manage follow-up with customers having overdue amounts. These processes can be set up routinely or manually. This process is responsible for setting up the follow-ups based on the policies. The policies are associated to customer's profile such as customer credit, customer group, overdue amounts, debt occurrence times, purchased products and etc. This process is also responsible for modifying or removing the designated follow-ups when the policies or situations are changed. The follow-ups can include overdue invoice reminding, customer credit control, service restriction, establishing customer debt profile, selling parts of debt portfolios to third party for debt recovery. **Explanatory** These processes can be set up routinely or manually. The follow-ups can include overdue invoice reminding, customer credit control, service restriction, establishing customer debt profile, selling parts of debt portfolios to third party for debt recovery. **Mandatory** The purpose of Administer Overdue Invoice Follow-Up process is to initiate and manage follow-up with customers having overdue amounts.This process is responsible for setting up the follow-ups based on the policies. The policies are associated to customer's profile such as customer credit, customer group, overdue amounts, debt occurrence times, purchased products and etc. This process is also responsible for modifying or removing the designated follow-ups when the policies or situations are changed. A [PD] 4.18 Credit Management The collections or treatment process is configurable based on customer type, credit class, credit

limit, amount overdue and duration outstanding. The system can also be configured on entry and exit criteria based on a customer's credit class such as minimum treatment thresholds to reduce workflow execution costs and definition of credit treatment thresholds to prevent customers oscillating in and out of treatment in quick succession.

Optional

Not used for this process element

Interactions

Not used for this process element

4.7.3.3 Level 4: Manage Overdue Invoice Payment (1.1.1.11.3.3) – Mapping Details

Process Identifier: 1.1.1.11.3.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.11.3.3 - Manage Overdue Invoice Payment
Brief Description Arrange and monitor payment plans to allow customers to pay overdue amounts in installments. **Extended Description** The purpose of Manage Overdue Invoice Payment process is to arrange and monitor payment plans to allow customers to pay overdue amounts in installments. This process arranges payment plans to allow customers to pay overdue amounts, leads to an agreement with the customers, and monitors the execution of the payment plans. The payment plan is associated to customer's profile such as the customer's credit, payment history, customer group or purchased products. This process should consider the payment amounts in installment whether can be undertaken by the customer. **Explanatory** The payment plan is associated to customer's profile such as the customer's credit, payment history, customer group or purchased products. **Mandatory** The purpose of Manage Overdue Invoice Payment process is to arrange and monitor payment plans to allow customers to pay overdue amounts in installments. This process arranges payment plans to allow customers to pay overdue amounts, leads to an agreement with the customers, and monitors the execution of the payment plans. This process should consider the payment amounts in installment whether can be undertaken by the customer. AM *Note: Manual aspects of this process cover the negotiation of the installment plan with the customer and data capture in the system.* **[BOD] eTOM 1.1.1.11 Bill Payments and Receivables Management → eTOM 1.1.1.11 3 Manage Customer Debt Collection** The functionality provided by this configurable workflow includes:

- […] Creation of a promise to pay installment plan.
- Suspension of a treatment workflow while a promise to pay is in effect; if the promise is broken, the workflow resumes.

[CMEUG] How Do I? → Manage Debtors → Create a Promise to Pay

A promise to pay is created when a customer is at risk of going into treatment or is already in treatment. It provides the customer with the option to pay off the outstanding amount in an agreed number of instalments, which can be of varying amounts.

[PD] 7.11.1 Benefits of Singleview's Customer Management Treatment Process

•

• 'Promise to Pay' functionality suspends treatment and gives customers the opportunity to work to a payment plan to avoid disconnection. Singleview's Convergent Billing product drives this functionality and Singleview's Customer Management system provides user-friendly administration of 'Promise to Pay'.

Optional

Not used for this process element

Interactions

Not used for this process element

4.7.3.4 Level 4: Initiate Customer Debt Recovery Activities (1.1.1.11.3.4) – Mapping Details

Process Identifier: 1.1.1.11.3.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.11.3.4 - Initiate Customer Debt Recovery Activities**
Brief Description Initiate debt recovery activities in accordance with appropriate commercial practice and policies. **Extended Description** The purpose of Initiate Customer Debt Recovery process is to initiate customer debt recovery activities in accordance with appropriate commercial practice and policies. This process includes deciding appropriate recovery activities based on debt recovery policies, launching debt recovery activities and monitoring the executions. The debt recovery policies are associated to the customer's profile such as payment history, customer group, purchased products, overdue amounts. This process includes overdue invoice reminding via phone call, SMS, email, by manually or automatically, by humans or applications. This process is also responsible for terminating customer debt recovery activities when the customer pays. **Explanatory** Not used for this process element **Mandatory** The purpose of Initiate Customer Debt Recovery process is to initiate customer debt recovery activities in accordance with appropriate commercial practice and policies. This process includes deciding appropriate recovery activities based on debt recovery policies, launching debt recovery activities and monitoring the executions. The debt recovery policies are associated to the customer's profile such as payment history, customer group, purchased products, overdue amounts. This process includes overdue invoice reminding via phone call, SMS, email, by manually or automatically, by humans or applications. This process is also responsible for terminating customer debt recovery activities when the customer pays. AM *Note: the manual aspects of this process include interactions that are interpersonal in their nature*

(calls, negotiations, adjustments of the treatment workflow as per agreements with the customer).

[BOD] eTOM 1.1.1.11 Bill Payments & Receivables Management → eTOM 1.1.1.11 3 Manage Customer Debt Collection

[…] Singleview provides configurable workflows to recover overdue debt. Any number of treatment paths can be configured, each specifying a sequence of steps and the duration between the steps. Steps can be either automatic or manual. Manual steps can be assigned to specific work groups.

The functionality provided by this configurable workflow includes:

- Exclusion of selected customers from the treatment process.
- Configurable collection workflow based on a combination of customer attributes (for example, customer type, credit class, credit limit), amount owing, and age of debt.

Optional

Not used for this process element

Interactions

Not used for this process element

4.7.3.5 Level 4: Manage Aged Customer Debt Portfolio (1.1.1.11.3.5) – Mapping Details

Process Identifier: 1.1.1.11.3.5

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.11.3.5 - Manage Aged Customer Debt Portfolio**
Brief Description Manage the aged customer debt portfolio. **Extended Description** The purpose of Manage Aged Customer Debt Portfolio process is to manage the aged customer debt portfolio. When the customer debt can't be recovered in a period of time decided by Service Provider, this process is responsible to transform this customer debt to aged customer debt portfolio. This process is responsible for transforming the overdue invoice to the aged customer debt portfolio when it didn't be recovered after a time of period or based on other triggers according to the Service Provider's policies. The aged customer debt portfolio should include all the information of the customer debt profiles. The process is also responsible for managing and maintaining transforming cycle. When the overdue payment is recovered after transforming, this process is responsible to remove the aged customer debt portfolio and notice Establish & Manage Customer Debt Profiles process to update the customer debt profile. **Explanatory** Not used for this process element **Mandatory** The purpose of Manage Aged Customer Debt Portfolio process is to manage the aged customer debt portfolio. When the customer debt can't be recovered in a period of time decided by Service Provider, this process is responsible to transform this customer debt to aged customer debt portfolio. This process is responsible for transforming the overdue invoice to the aged customer debt portfolio when it didn't be recovered after a time of period or based on other triggers according to the Service Provider's policies. The aged customer debt portfolio should include all the information of the customer debt profiles. The process is also responsible for managing and maintaining

transforming cycle.

When the overdue payment is recovered after transforming, this process is responsible to remove the aged customer debt portfolio and notice Establish & Manage Customer Debt Profiles process to update the customer debt profile. A

Note: An invoice in Singleview has a "Current Due" attribute that is maintained whenever a transaction (a payment or an adjustment) is allocated to the invoice.

[BOD] eTOM 1.1.1.11 Bill Payments and Receivables Management → eTOM 1.1.1.11 2 Manage Customer Payments

- All debt is aged according to configurable age ranges with comprehensive aged debt reporting.

[PD] 4.12.1 Invoice Issue Date

Singleview allows service providers to specify an invoice issue date that is different to the bill run effective date. This allows charges to be applied according to the bill run effective date, and aging of the customer debt to occur according to the date the invoice was issued.

[PD] 4.17.1 Accounting System

[…] Business customer accounts are usually tracked using an 'open item' accounting method where charges on an invoice can be billed, **aged**, paid/adjusted or written-off **separately**.

[PD] 4.17.7 Open Invoice

Open invoice functionality is also available through the flexibility of Singleview. Invoices can be treated as separate entities, **with respective outstanding balances owed**.

Optional

Not used for this process element

Interactions

Not used for this process element

4.7.3.6 Level 4: Establish & Manage Customer Debt Profiles (1.1.1.11.3.6) – Mapping Details

Process Identifier: 1.1.1.11.3.6

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.11.3.6 - Establish and Manage Customer Debt Profiles
Brief Description Establish and manage customer debt profiles to assist in managing debt recovery and debt risk on a customer, product or customer group basis. **Extended Description** The purpose of Establish & Manage Customer Debt Profiles process is to establish and manage customer debt profiles to assist in managing debt recovery and debt risk on a customer, product or customer group basis. The customer debt profile is a part of customer's profile, which can include customer credit, customer group, overdue date, overdue amounts, overdue occurring times, debt recovery means and occurring times, customer debt recovery response and etc. Other process can base the customer debt profile to upgrade or downgrade the customer credit or apply other controls. This process is responsible for keeping updates of the customer debt profiles according to results from Initiate Customer Debt Recovery Activities process. **Explanatory** Not used for this process element **Mandatory** The purpose of Establish & Manage Customer Debt Profiles process is to establish and manage customer debt profiles to assist in managing debt recovery and debt risk on a customer, product or customer group basis. The customer debt profile is a part of customer's profile, which can include customer credit, customer group, overdue date, overdue amounts, overdue occurring times, debt recovery means and occurring times, customer debt recovery response and etc. This process is responsible for keeping updates of the customer debt profiles according to results from Initiate Customer Debt Recovery Activities process. AM *Note: while Singleview establishes the default Credit Rating for the customer per customer type, processes outside of Singleview are expected to determine changes to the Customer Debt Profiles. Afterwards Singleview maintains the value as an attribute of the Customer entity. Singleview*

provides features supporting these processes in the form of reports, storage of debt history, payment history, etc.

[BOD] eTOM 1.1.1.11 Bill Payments and Receivables Management → eTOM 1.1.1.11.3 Manage Customer Debt Collection

- […]Storage of treatment history to be available for use by other operational and analytical processes (for example, recalculating customer credit worthiness on a periodic basis or provision of information to third party agencies such as Equifax).

[…] The following reports are also available:

- Treatment customer report that provides individual customer information regarding their treatment status

Optional

Not used for this process element

Interactions

Other process can base the customer debt profile to upgrade or downgrade the customer credit or apply other controls.

4.7.3.7 Level 4: Establish & Manage Commercial Debt Recovery Arrangement (1.1.1.11.3.7) – Mapping Details

Process Identifier: 1.1.1.11.3.7

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.11.3.7 - Establish and Manage Commercial Debt Recovery Arrangement**
Brief Description Establish and manage commercial arrangements with third parties for the recover of aged debt, and/or for the write-off and selling of parts of the debt portfolio to third parties. **Extended Description** The purpose of Establish & Manage Commercial Debt Recovery Arrangement process is to establish and manage commercial arrangements with third parties for the recovery of aged debt, and/or for the write-off and selling of parts of the debt portfolio to third parties. This process is responsible for filtering and packaging the aged customer debt portfolios based on the Service Provider's policies, deciding the third parties' action items and monitoring the status of the arrangements. Note that the Supply Chain Capability Delivery process is used to deliver the commercial agreements. **Explanatory** Not used for this process element **Mandatory** The purpose of Establish & Manage Commercial Debt Recovery Arrangement process is to establish and manage commercial arrangements with third parties for the recovery of aged debt, and/or the write-off and selling of parts of the debt portfolio to third parties. This process is responsible for filtering and packaging the aged customer debt portfolios based on the Service Provider's policies, deciding the third parties' action items and monitoring the status of the arrangements. AM *Note: Establishing and managing commercial agreements with collection agencies (and similar parties) are not directly supported by Singleview and must be a part of internal supplier's processes.* **[BOD] eTOM 1.1.1.11 Bill Payments and Receivables Management → eTOM 1.1.1.11.3 Manage**

Customer Debt Collection

- Integration to external systems responsible for executing treatment actions (for example, interactive voice response (IVR), provisioning, and print vendor).

[PD] 4.17.1 Accounts System

[…] Business customer accounts are usually tracked using an 'open item' accounting method where charges on an invoice can be billed, aged, paid/adjusted or **written-off** separately.

Optional

Not used for this process element

Interactions

Note that the Supply Chain Capability Delivery process is used to deliver the commercial agreements.

4.7.3.8 Level 3: Manage Customer Debt Collection (1.1.1.11.3) – TM Forum Assessor Scores

1.1.1.11.3 Manage Customer Debt Collection	
Grouping of Implied Tasks	**Score**
Identify Overdue Invoice (1.1.1.11.3.1)	*100%*
Administer Overdue Invoice Follow-Up (1.1.1.11.3.2)	*100%*
Manage Overdue Invoice Payment (1.1.1.11.3.3)	*100%*
Initiate Customer Debt Recovery Activities (1.1.1.11.3.4)	*100%*
Manage Aged Customer Debt Portfolio (1.1.1.11.3.5)	*100%*
Establish & Manage Customer Debt Profiles (1.1.1.11.3.6)	*100%*
Establish & Manage Commercial Debt Recovery Arrangement (1.1.1.11.3.7)	*75%*
Total score for Parent Level 3 Process	**675/700 = 96% = 4.9**

4.7.4 Supporting Evidence References (Works Cited)

BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
PD	Singleview Version 8.00 PRODUCT DESCRIPTION, Singleview_v8_00_product_description-final.pdf
CMEUG	User Guide for Customer Management v8.00, d-cm-eug.zip

4.7.5 Level 2: Bill Payments & Receivables Management (1.1.1.11) – Conformance Results

Table 4.7 Level 2: Bill Payments & Receivables Management (1.1.1.11) – Conformance Results

1.1.1.11 - Bill Payments & Receivables Management	
Level 3 Processes	**Score**
1.1.1.11.1 - Manage Customer Billing	5
1.1.1.11.2 - Manage Customer Payments	5
1.1.1.11.3 - Manage Customer Debt Collection	4.9

4.8 L2: Bill Inquiry Handling (1.1.1.12)

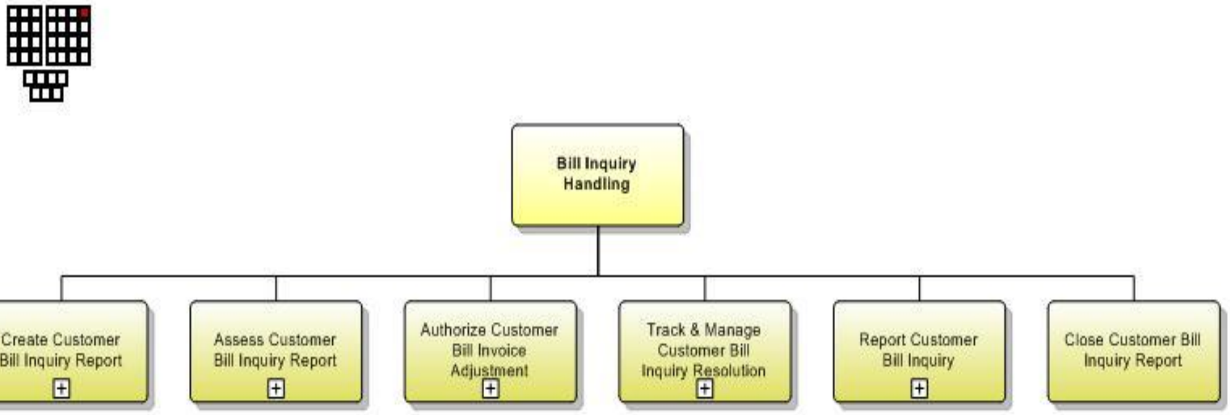


Figure 4.41 Bill Inquiry Handling decomposition into level 3 processes

Process Identifier: 1.1.1.12

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensure the timely and effective fulfillment of all customer bill inquiries and complaints.

Extended Description

The purpose of Bill Inquiry Handling process is to ensure the timely and effective fulfillment of all customer bill inquiries and complaints. This process is responsible for managing customer interaction as it relates to a customer's billing relationship to a Service Provider. This includes the creation of inquiries against the customer's billing account(s), and management of changes to customer billing account structure and details, the managing of all customer bill inquiry lifecycle, reporting changes and updates and closing of customer bill inquiry when all activities were accomplished. This process can be viewed via traditional means, with a service representative managing the customer or via e-business means. In the latter case, inquiries, complaints and changes to details would be handled via electronic media without the intervention of a representative.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.8.1 Level 3: Create Customer Bill Inquiry Report (1.1.1.12.1) – Mapping Details

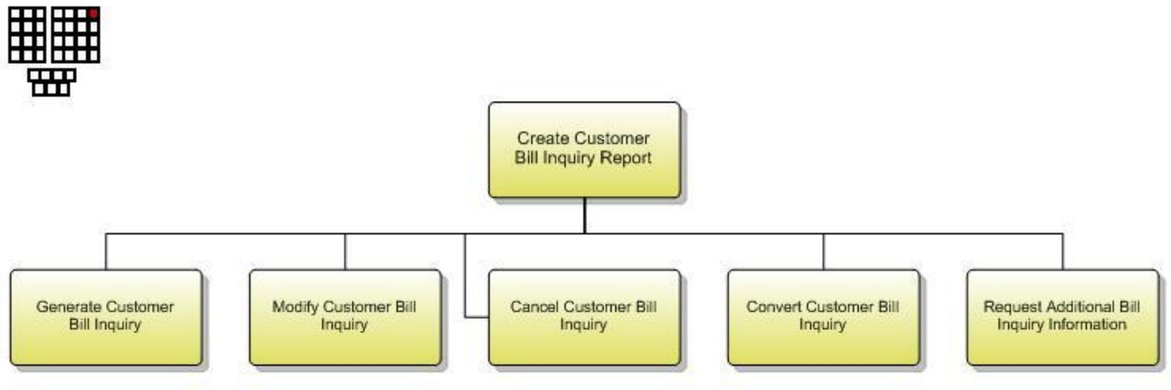


Figure 4.42 Create Customer Bill Inquiry Report decomposition into level 4 processes

Process Identifier: 1.1.1.12.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Create a new customer bill inquiry report.

Extended Description

The objective of the Create Customer Bill Inquiry Report process is to create a new customer bill inquiry report, modify existing customer bill inquiry reports, and request cancellation of existing customer bill inquiry reports.

A new customer bill inquiry report may be created as a result of specific customer initiated bill inquiry or complaint notifications.

If the customer bill inquiry report is created, the Create Customer Bill Inquiry Report processes are responsible for converting the received information into a form suitable for the Bill Inquiry Handling processes, and for requesting additional information if required.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.8.1.1 Level 4: Generate Customer Bill Inquiry (1.1.1.12.1.1) – Mapping Details

Process Identifier: 1.1.1.12.1.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.1.1 Generate Customer Bill Inquiry**
Brief Description Generate a new customer bill inquiry. **Extended Description** The purpose of Generate Customer Bill Inquiry is to generate a new customer bill inquiry. A new customer bill inquiry may be generated as a result of specific customer initiated bill inquiry or complaint notifications. **Explanatory** Not used for this process element **Mandatory** The purpose of Generate Customer Bill Inquiry is to generate a new customer bill inquiry. **AM** **[BOD] – eTOM 1.1.1.12.1 Create Customer Bill Enquiry Report** If a customer contacts a service provider to query their account, a case is created in Singleview to record the interaction with the customer, and a Billing Enquiry issue is created. **[BOO] 3.3.13 Case Management (entire section)** **Optional** A new customer bill inquiry may be generated as a result of specific customer initiated bill inquiry or complaint notifications. **Interactions**

Not used for this process element

4.8.1.2 Level 4: Modify Customer Bill Inquiry (1.1.1.12.1.2) – Mapping Details

Process Identifier: 1.1.1.12.1.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.1.2– Modify Customer Bill Inquiry**
Brief Description Modify existing customer bill inquiries **Extended Description** The purpose of Modify Customer Bill Inquiry process is to modify existing customer bill in-quiries when the bill inquiry or complaint is changed by the customer, a CSR or other processes. This process is also responsible for changing the status of customer bill inquiries/complains. **Explanatory** Not used for this process element **Mandatory** The purpose of Modify Customer Bill Inquiry process is to modify existing customer bill inquiries when the bill inquiry or complaint is changed by the customer, a CSR or other processes. This process is also responsible for changing the status of customer bill inquiries/complaints. **AM** *Note: Depending upon the nature of the change the CSR would either add notes against the existing case or raise a new issue and close the previous issue.* **[BOD] – eTOM 1.1.1.12.1 Create Customer Bill Enquiry Report** If a customer contacts a service provider to query their account, a case is created in Singleview to record the interaction with the customer, and a Billing Enquiry issue is created. **[BOO] 3.3.13 Case Management (entire section)** **Optional** Not used for this process element

Interactions
Not used for this process element

4.8.1.3 Level 4: Cancel Customer Bill Inquiry (1.1.1.12.1.3) – Mapping Details

Process Identifier: 1.1.1.12.1.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.1.3 – Cancel Customer Bill Inquiry**
Brief Description Request cancellation of existing customer bill inquiry reports **Extended Description** The purpose of Cancel Customer Bill Inquiry process is to cancel existing customer bill inquiries. The cancellation may be caused by the cancellation requests of bill inquiry from the specific customers, a CSR or processes. **Explanatory** Not used for this process element **Mandatory** The purpose of Cancel Customer Bill Inquiry process is to cancel existing customer bill inquiries**. AM** *Note: Cancellation equates to closure of the case and all associated issues and actions.* **[BOO] 3.3.13 Case Management (entire section)** **Optional** The cancellation may be caused by the cancellation requests of bill inquiry from the specific customers, a CSR or processes. **Interactions** Not used for this process element

4.8.1.4 Level 4: Convert Customer Bill Inquiry (1.1.1.12.1.4) – Mapping Details

Process Identifier: 1.1.1.12.1.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.12.1.4 – Convert Customer Bill Inquiry
Brief Description Convert the received information into a form suitable for the Bill Inquiry Handling processes **Extended Description** The purpose of Convert Customer Bill Inquiry process is to convert the received information into a form suitable for the Bill Inquiry Handling processes. This process is responsible for extracting data from received information, and applying the suitable template. **Explanatory** Not used for this process element **Mandatory** The purpose of Convert Customer Bill Inquiry process is to convert the received information into a form suitable for the Bill Inquiry Handling processes. This process is responsible for extracting data from received information, and applying the suitable template. **A** *Note: The Singleview integration infrastructure exposes Case Management functionality via SID compliant APIs so that information received by other channels/means can be fed in to create cases as if entered by the CSR.* **[BOO] 3.8 Integration Infrastructure (entire section)** **Optional** Not used for this process element **Interactions** Not used for this process element

4.8.1.5 Level 4: Request Additional Bill Inquiry Information (1.1.1.12.1.5) – Mapping Details

Process Identifier: 1.1.1.12.1.5

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.1.5 – Request Additional Bill Inquiry Information**
Brief Description Request additional information for the Bill Inquiry Handling processes **Extended Description** The purpose of Request Additional Bill Inquiry Information process is to request additional information for the Bill Inquiry Handling processes. The additional information requiring can be happening at anytime during Bill Inquiry Handling process. This process is responsible for avoiding the duplication of the additional bill inquiry information request and ensuring the requested information hasn't already existed in customer bill inquiry. **Explanatory** Not used for this process element **Mandatory** The purpose of Request Additional Bill Inquiry Information process is to request additional information for the Bill Inquiry Handling processes. The additional information requiring can be happening at anytime during Bill Inquiry Handling process. This process is responsible for avoiding the duplication of the additional bill inquiry information request and ensuring the requested information hasn't already existed in customer bill inquiry. **AM** *Note: Requests for additional information as handled by adding additional actions to the existing Case/Issue and assigning these to the appropriate workgroup.* **[BOO] 3.3.13 Case Management (entire section)** **Optional** Not used for this process element

Interactions
Not used for this process element

4.8.1.6 Level 3: Create Customer Bill Inquiry Report (1.1.1.12.1) – TM Forum Assessor Scores

1.1.1.12.1 Create Customer Bill Inquiry Report	
Grouping of Implied Tasks	**Score**
Generate Customer Bill Inquiry (1.1.1.12.1.1)	*100%*
Modify Customer Bill Inquiry (1.1.1.12.1.2)	*100%*
Cancel Customer Bill Inquiry (1.1.1.12.1.3)	*100%*
Convert Customer Bill Inquiry (1.1.1.12.1.4)	*100%*
Request Additional Bill Inquiry Information (1.1.1.12.1.5)	*100%*
Total score for Parent Level 3 Process	**500/500 = 100% = 5**

4.8.2 Level 3: Assess Customer Bill Inquiry Report (1.1.1.12.2) – Mapping Details

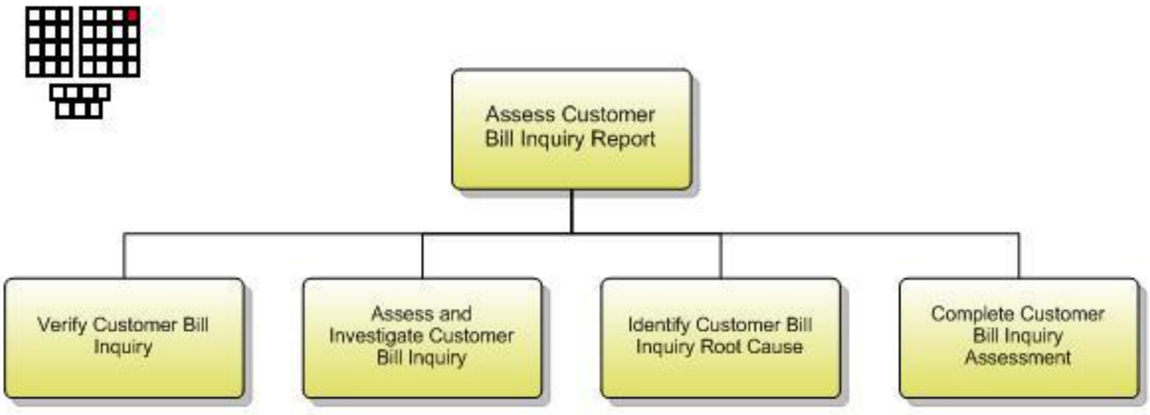


Figure 4.43 Assess Customer Bill Inquiry Report decomposition into level 4 processes

Process Identifier: 1.1.1.12.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Assess the bill inquiry report to determine the nature of the inquiry, and to determine whether the inquiry has arisen due to circumstances originating in other process areas

Extended Description

The purpose of the Assess Customer Bill Inquiry Report processes is to assess the bill inquiry report to determine the nature of the inquiry, and to determine whether the inquiry has arisen due to circumstances originating in other process areas.

The responsibilities of these processes include, but are not limited to:

- Verifying whether the information supplied by the customer is correct; and

- Performing assessment and investigation based on the customer provided information to determine whether the circumstances leading to the bill inquiry is linked to the underlying services, or other processes.

The Assess Customer Bill Inquiry Report processes will make the results of the investigation available to other processes. The Assess Customer Bill Inquiry Report processes will update the customer bill inquiry report, as required during the assessment, and when the root cause has been identified.

The Assess Customer Bill Inquiry Report processes will notify the Track & Manage Bill Inquiry Resolution processes when the investigation and assessment is complete.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.8.2.1 Level 4: Verify Customer Bill Inquiry (1.1.1.12.2.1) – Mapping Details

Process Identifier: 1.1.1.12.2.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.2.1– Verify Customer Bill Inquiry**
Brief Description Verify whether the information supplied by the customer is correct. **Extended Description** The purpose of Verify Customer Bill Inquiry process is to verify whether the information sup-plied by the customer is correct. For examples: verify customer name, validate customer account number, identify the association of customer and billing account. **Explanatory** For examples: verify customer name, validate customer account number, identify the association of customer and billing account. **Mandatory** The purpose of Verify Customer Bill Inquiry process is to verify whether the information sup-plied by the customer is correct. **AM** *Note: Singleview provides the CSR with access to all the information required to handle and verify and inquiry.* **[BOD] eTOM 1.1.1.2.1 Manage Contact** Singleview's Contact view enables a CSR to verify a contact at the beginning of an interaction and to ensure that they are authorised to speak on behalf of the customer account. **[BOD] – eTOM 1.1.1.12.2 Assess Customer Bill Inquiry Report** The Billing Enquiry issue in Singleview provides a complete history and current financial status of a customer account on a single screen, and enables users to answer questions about the customer account by:

- Primary and deposit account numbers
- Current balance of each account number
- Balance date of each account number
- Number of months the account balance of each account number has been outstanding
- List of transactions for each account (for example, adjustments, payments, invoices, and rejected payments
- Details of each transaction
- List of events for each invoice
- List of unbilled events.

Optional

Not used for this process element

Interactions

Not used for this process element

4.8.2.2 Level 4: Assess and Investigate Customer Bill Inquiry (1.1.1.12.2.2) – Mapping Details

Process Identifier: 1.1.1.12.2.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.2.2- Assess and Investigate Customer Bill Inquiry**

Brief Description
 	
Assess and investigate customer bill inquiry based on the customer provided information.
 	
Extended Description
 	
The purpose of Assess and Investigate Customer Bill Inquiry is to assess and investigate customer bill inquiry based on the customer provided information to determine whether the circumstances leading to the bill inquiry is linked to the underlying services, or other processes. Update the customer bill inquiry report, as required during the assessment. Make the results of the investigation available to other processes.
 	
Explanatory
 	
Not used for this process element
 	
Mandatory
 	
The purpose of Assess and Investigate Customer Bill Inquiry is to assess and investigate customer bill inquiry based on the customer provided information to determine whether the circumstances leading to the bill inquiry is linked to the underlying services, or other processes. Update the customer bill inquiry report, as required during the assessment. **AM**
 	
Note: The Customer Management forms provide access to both the financial details of the bill but also to information such as the customer product holdings which can also be of relevance to handling enquiries, for example activation date impact on pro-ration.
 	
[BOO] 3.3.1 Customer Information Management
 	
• 360 degree view of all the customer information including:
    ○ Customer details - E.g. name, contact persons, addresses, contact numbers, etc.
    ○ Customer organizational hierarchy (household, business and corporate)

- The customer's existing products and services, current and past orders
- Billing accounts
- The customer's current and past trouble tickets
- The customer's interactions with the enterprise via all channels

[BOD] – eTOM 1.1.1.12.2 Assess Customer Bill Inquiry Report

If a customer wants to dispute any transactions, the dispute must be captured in the Billing Enquiry issue. The disputed amount is automatically excluded from collection until the dispute is resolved. An open Billing Enquiry issue can be modified, cancelled, or closed at any time.

Optional

Not used for this process element

Interactions

ake the results of the investigation available to other processes.

4.8.2.3 Level 4: Identify Customer Bill Inquiry Root Cause (1.1.1.12.2.3) – Mapping Details

Process Identifier: 1.1.1.12.2.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.12.2.3 - Identify Customer Bill Inquiry Root Cause

Brief Description
 	
Identify the root cause on customer bill inquiry.
 	
Extended Description
 	
The purpose of Identify Customer Bill Inquiry Root Cause is to identify the root cause on customer bill inquiry and make the results available to other processes. Once the root cause is identified, this process will notify Modify Customer Bill Inquiry process to update the customer bill inquiry report.
 	
Explanatory
 	
Not used for this process element
 	
Mandatory
 	
The purpose of Identify Customer Bill Inquiry Root Cause is to identify the root cause on customer bill inquiry and make the results available to other processes. Once the root cause is identified, this process will notify Modify Customer Bill Inquiry process to update the customer bill inquiry report
AM
Note: Root cause analysis is initially carried out by the CSR using the information presented on the Customer Management GUI. If it cannot be resolved then then new actions can be created and assigned to a back office workgroup.
 	
[BOO] 3.3.1 Customer Information Management
 	
• 360 degree view of all the customer information including:
  ○ Customer details - E.g. name, contact persons, addresses, contact numbers, etc.
  ○ Customer organizational hierarchy (household, business and corporate)
  ○ The customer's existing products and services, current and past orders
  ○ Billing accounts
  ○ The customer's current and past trouble tickets

- The customer’s interactions with the enterprise via all channels

[BOO] 3.3.13 Case Management (entire section)

Optional

Not used for this process element

Interactions

Not used for this process element

4.8.2.4 Level 4: Complete Customer Bill Inquiry Assessment (1.1.1.12.2.4) – Mapping Details

Process Identifier: 1.1.1.12.2.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.12.2.4 - Complete Customer Bill Inquiry Assessment
Brief Description Complete the assessment when the investigation and assessment is complete. **Extended Description** The purpose of Complete Customer Bill Inquiry Assessment process is to finish the assessment when the investigation and assessment is complete. This process is responsible for notifying the Track & Manage Bill Inquiry Resolution processes about the completion. **Explanatory** Not used for this process element **Mandatory** The purpose of Complete Customer Bill Inquiry Assessment process is to finish the assessment when the investigation and assessment is complete. This process is responsible for notifying the Track & Manage Bill Inquiry Resolution processes about the completion. **AM** **[BOD] – eTOM 1.1.1.12.2 Assess Customer Bill Inquiry Report** An open Billing Enquiry issue can be modified, cancelled, or closed at any time. **[BOO] 3.3.13 Case Management (entire section)** **Optional** Not used for this process element **Interactions** Not used for this process element

4.8.2.5 Level 3: Assess Customer Bill Inquiry Report (1.1.1.12.2) – TM Forum Assessor Scores

1.1.1.12.2 Assess Customer Bill Inquiry Report	
Grouping of Implied Tasks	**Score**
Verify Customer Bill Inquiry (1.1.1.12.2.1)	*100%*
Assess and Investigate Customer Bill Inquiry (1.1.1.12.2.2)	*100%*
Identify Customer Bill Inquiry Root Cause (1.1.1.12.2.3)	*100%*
Complete Customer Bill Inquiry Assessment (1.1.1.12.2.4)	*100%*
Total score for Parent Level 3 Process	**400/400 = 100% = 5**

4.8.3 Level 3: Authorize Customer Bill Invoice Adjustment (1.1.1.12.3) – Mapping Details

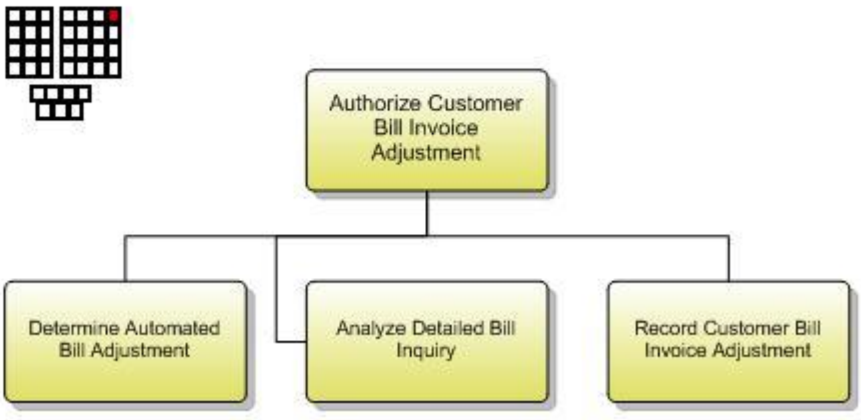


Figure 4.44 Authorize Customer Bill Invoice Adjustment decomposition into level 4 processes

Process Identifier: 1.1.1.12.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Adjust the customer's bill invoice based on detailed assessment and/or policy.

Extended Description

The purpose of the Authorize Customer Bill Invoice Adjustment processes is to adjust the cus-tomer's bill invoice based on detailed assessment and/or policy.

The responsibilities of this process include, but are not limited to:

- Determination of whether policy allows for automated adjustment of the customer bill invoice, and approving any resultant adjustments;

- Undertaking more detailed analysis and investigation to determine whether a bill adjustment is acceptable, including gaining appropriate management authority to make the adjustment; and

- Recording the results of the adjustment if approved into the records relating to the customer's bill invoice.

These processes rely on the availability of appropriate adjustment policies, which are created within the Support Bill Inquiry Handling processes, for the timely resolution of major billing disputes.

The resolution processes may require investigation of the billing processes themselves to de-termine whether the disputed bills are the result of quality errors within the Service Provider processes.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.8.3.1 Level 4: Determine Automated Bill Adjustment (1.1.1.12.3.1) – Mapping Details

Process Identifier: 1.1.1.12.3.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.12.3.1 – Determine Automated Bill Adjustment
Brief Description Determination of whether policy allows for automated adjustment of the customer bill invoice, and approving any resultant adjustments. **Extended Description** The purpose of Determine Automated Bill Adjustment process is to determine whether policy allows for automated adjustment of the customer bill invoice and approving any resulting adjustments. When the authorization is approved, this process is responsible for notifying the relevant process to apply the adjustment **Explanatory** Not used for this process element **Mandatory** The purpose of Determine Automated Bill Adjustment process is to determine whether policy allows for automated adjustment of the customer bill invoice and approving any resulting adjustments. When the authorization is approved, this process is responsible for notifying the relevant process to apply the adjustment. **A** *Note: Singleview does not detect and calculate the need for automated adjustments but does allow them to be fulfilled by an external application invoking SID compliant APIs.* **[BOO] 3.8 Integration Infrastructure (entire section)** **Optional** Not used for this process element

Interactions
Not used for this process element

4.8.3.2 Level 4: Analyze Detailed Bill Inquiry (1.1.1.12.3.2) – Mapping Details

Process Identifier: 1.1.1.12.3.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.12.3.2 – Analyze Detailed Bill Inquiry
Brief Description Analyse and investigate to determine whether a bill adjustment is acceptable. **Extended Description** The purpose of Analyze Detailed Bill Inquiry process is to undertake more detailed analysis and investigation to determine whether a bill adjustment is acceptable, including gaining appropriate management authority to make the adjustment. These processes rely on the availability of appropriate adjustment policies, which are created within the Support Bill Inquiry Handling processes, for the timely resolution of major billing disputes. The resolution processes may require investigation of the billing processes themselves to determine whether the disputed bills are the result of quality errors within the Service Provider processes. **Explanatory** Not used for this process element **Mandatory** The purpose of Analyze Detailed Bill Inquiry process is to undertake more detailed analysis and investigation to determine whether a bill adjustment is acceptable, including gaining appropriate management authority to make the adjustment. These processes rely on the availability of appropriate adjustment policies, which are created within the Support Bill Inquiry Handling processes, for the timely resolution of major billing disputes. **AM** *Note: Case Management allows as case to be referred to another workgroup (typically back-office) for more detailed analysis. Case Management can also be used to implement a workflow involving an authorization step as one of the actions. Singleview also imposes controls as to which users can make adjustments and to what value.* **[BOO] 3.3.13 Case Management (entire section)**

[BOD] eTOM 1.1.1.12 3 Authorise Customer Bill Invoice Adjustment

To ensure that limits are imposed on adjustment amounts, users are given a predefined adjustment limit and, if the entered adjustment is above the user's limit, the transaction is passed to a supervisor to approve, using workflow capabilities. Adjustments can be made in any currency configured for the specific adjustment type

Optional

The resolution processes may require investigation of the billing processes themselves to determine whether the disputed bills are the result of quality errors within the Service Provider processes.

Interactions

These processes rely on the availability of appropriate adjustment policies, which are created within the Support Bill Inquiry Handling processes, for the timely resolution of major billing disputes.

4.8.3.3 Level 4: Record Customer Bill Invoice Adjustment (1.1.1.12.3.3) – Mapping Details

Process Identifier: 1.1.1.12.3.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.3.3 – Record Customer Bill Invoice Adjustment**
Brief Description Record the results of the adjustment if approved into the records relating to the customer's bill invoice. **Extended Description** The purpose of Record Customer Bill Invoice Adjustment process is to record the results of the adjustment if approved into the records relating to the customer's bill invoice. This process is responsible for recording the entire adjustment events including adjustment operator, timestamp and detailed reason, for management purpose. **Explanatory** Not used for this process element **Mandatory** The purpose of Record Customer Bill Invoice Adjustment process is to record the results of the adjustment if approved into the records relating to the customer's bill invoice. This process is responsible for recording the entire adjustment events including adjustment operator, timestamp and detailed reason, for management purpose. **AM** *Note: As well as the Adjustment entry that is created in Accounts receivable a record of the adjustment is also captured in the case and in database auditing.* **[BOO] 3.3.8 Billing Inquiry, Dispute & Adjustment Management** An adjustment can be made to a specific invoice, several invoices, or multiple events in an invoice or to a customer's account. Typically, an adjustment is made against an outstanding invoice; however, a single adjustment can be split and allocated to multiple invoices if required. **[BOO] 3.3.13 Case Management (entire section)**

[BOD] eTOM 1.1.1.12.3 Authorize Customer Bill Invoice Adjustment

Adjustments in Singleview are handled as a specific type of issue within a case.

[BOO] 3.3.13 Case Management (entire section)

[PD] 6.8.6 Audit (entire section)

Optional

Not used for this process element

Interactions

Not used for this process element

4.8.3.4 Level 3: Authorize Customer Bill Invoice Adjustment (1.1.1.12.3) – TM Forum Assessor Scores

1.1.1.12.3 Authorize Customer Bill Invoice Adjustment	
Grouping of Implied Tasks	**Score**
Determine Automated Bill Adjustment (1.1.1.12.3.1)	*75%*
Analyze Detailed Bill Inquiry (1.1.1.12.3.2)	*100%*
Record Customer Bill Invoice Adjustment (1.1.1.12.3.3)	*100%*
Total score for Parent Level 3 Process	**275/300 = 92% = 4.8**

4.8.4 Level 3: Track & Manage Customer Bill Inquiry Resolution (1.1.1.12.4) – Mapping Details

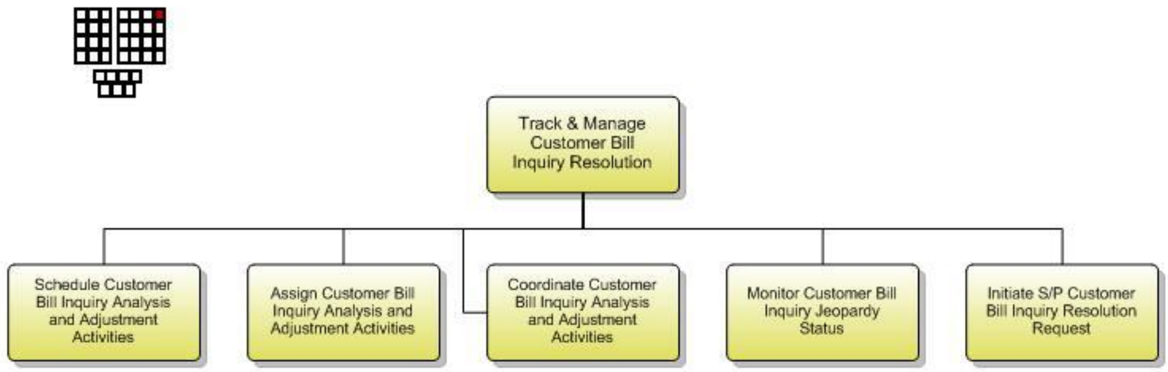


Figure 4.45 Track & Manage Customer Bill Inquiry Resolution decomposition into level 4 processes

Process Identifier: 1.1.1.12.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Efficiently assign, coordinate and track specific customer bill inquiry analysis, bill adjustments and ensuring that appropriate credits and/or other agreed adjustments are made available to the adjustments processes activities, and escalate any open customer bill inquiries in jeopardy.

Extended Description

The objective of the Track & Manage Customer Bill Inquiry Resolution processes is to efficiently assign, coordinate and track specific customer bill inquiry analysis, bill adjustments and ensuring that appropriate credits and/or other agreed adjustments are made available to the adjustments processes activities, and escalate any open customer bill inquiries in jeopardy.

Responsibilities of these processes include, but are not limited to:

- Scheduling, assigning and coordinating analysis and specific customer bill inquiry/complaint adjustment activities;

- Modifying the customer bill inquiry/complaint status;

- Canceling a customer bill inquiry when the specific request was related to a false billing event; and

- Monitoring the jeopardy status of open customer bill inquiries, and escalating customer bill inquiries as necessary.

Note that some specific product and/or service components may be owned and managed by suppliers/partners. In these cases the Track & Manage Customer Bill Inquiry Resolution process is responsible for initiating requests, through - S/P Settlements & Payments Management for resolution by the supplier/partner of the specific bill inquiries/complaints.

These processes will co-ordinate all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence.

The Track & Manage Bill Inquiry Resolution processes will also inform the Close Customer Bill Inquiry processes by modifying the customer bill inquiry status to cleared when the specific customer bill inquiry/complaint issues have been resolved.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.8.4.1 Level 4: Schedule Customer Bill Inquiry Analysis and Adjustment Activities (1.1.1.12.4.1) – Mapping Details

Process Identifier: 1.1.1.12.4.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.4.1– Schedule Customer Bill Inquiry Analysis and Adjustment Activities**
Brief Description Schedule analysis and specific customer bill inquiry/complaint adjustment activities. **Extended Description** The purpose of Schedule Customer Bill Inquiry Analysis and Adjustment Activities process is to schedule analysis and specific customer bill inquiry/complaint adjustment activities. This process is responsible for planning the analysis and adjustment activities in specific order and allotted time. **Explanatory** Not used for this process element **Mandatory** The purpose of Schedule Customer Bill Inquiry Analysis and Adjustment Activities process is to schedule analysis and specific customer bill inquiry/complaint adjustment activities. This process is responsible for planning the analysis and adjustment activities in specific order and allotted time. **AM** *Note: The assumption is that this process is focused on the planning of the activities not the execution of the resultant schedule. Singleview automates the latter i.e. the resultant schedule can be implemented in Case Management workflow to define who does what when.* **[BOD] eTOM 1.1.1.12 4 Track and Manage Customer Bill Enquiry Resolution** Singleview case management is used to track and manage customer problem handling activities. It provides functionality to assign, coordinate, and track problems, and escalate them if appropriate. **[BOO] 3.3.13 Case Management (entire section)**

Optional

Not used for this process element

Interactions

Not used for this process element

4.8.4.2 Level 4: Assign Customer Bill Inquiry Analysis and Adjustment Activities (1.1.1.12.4.2) – Mapping Details

Process Identifier: 1.1.1.12.4.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.4.2– Assign Customer Bill Inquiry Analysis and Adjustment Activities**
Brief Description Assign analysis and specific customer bill inquiry/complaint adjustment activities. **Extended Description** The purpose of Assign Customer Bill Inquiry Analysis and Adjustment Activities process is to assign analysis and specific customer bill inquiry/complaint adjustment activities. This process is responsible for decomposing an activity to subsequent tasks and appointing other processes to accomplish them. **Explanatory** Not used for this process element **Mandatory** The purpose of Assign Customer Bill Inquiry Analysis and Adjustment Activities process is to assign analysis and specific customer bill inquiry/complaint adjustment activities. This process is responsible for decomposing an activity to subsequent tasks and appointing other processes to accomplish them. **AM** *Note: Case Management allows the actions relating to a case to be assigned to specific workgroups, it also allows for additional actions to be added to a case, for example if outcome of an assigned action results in the need for a set of subsequent activities.* **[BOD] eTOM 1.1.1.12 4 Track and Manage Customer Bill Enquiry Resolution** Singleview case management is used to track and manage customer problem handling activities. It provides functionality to assign, coordinate, and track problems, and escalate them if appropriate.

[BOO] 3.3.13 Case Management (entire section)

Optional

Not used for this process element

Interactions

Not used for this process element

4.8.4.3 Level 4: Coordinate Customer Bill Inquiry Analysis and Adjustment Activities (1.1.1.12.4.3) – Mapping Details

Process Identifier: 1.1.1.12.4.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.4.3 – Coordinate Customer Bill Inquiry Analysis and Adjustment Activities**
Brief Description Coordinate analysis and specific customer bill inquiry/complaint adjustment activities. **Extended Description** The purpose of Coordinate Customer Bill Inquiry Analysis and Adjustment Activities process is to coordinate analysis and specific customer bill inquiry/complaint adjustment activities. The process is responsible for ensuring that appropriate credits and/or other agreed adjustments are made available to the adjustments processes activities, coordinating all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate se-quence. **Explanatory** Not used for this process element **Mandatory** The purpose of Coordinate Customer Bill Inquiry Analysis and Adjustment Activities process is to coordinate analysis and specific customer bill inquiry/complaint adjustment activities. The process is responsible for ensuring that appropriate credits and/or other agreed adjustments are made available to the adjustments processes activities, coordinating all the actions necessary in order to guarantee that all tasks are finished at the appropriate time and in the appropriate sequence. **AM** *Note: Coordination is achieved through workflow management capabilities of Case Management.* **[BOD] eTOM 1.1.1.12 4 Track and Manage Customer Bill Enquiry Resolution** Singleview case management is used to track and manage customer problem handling activities. It provides functionality to assign, coordinate, and track problems, and escalate them if appropriate.

When a Billing Enquiry issue is resolved, the Track and Manage Customer Bill Enquiry Resolution process notifies the Close Customer Bill Enquiry Report process that the issue can be closed **[BOO] 3.3.13 Case Management (entire section)** **Optional** Not used for this process element **Interactions** Not used for this process element

4.8.4.4 Level 4: Monitor Customer Bill Inquiry Jeopardy Status (1.1.1.12.4.4) – Mapping Details

Process Identifier: 1.1.1.12.4.4

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.4.4– Monitor Customer Bill Inquiry Jeopardy Status**
Brief Description Monitor the jeopardy status of open customer bill inquiries **Extended Description** The purpose of Monitor Customer Bill Inquiry Jeopardy Status process is to monitor the jeop-ardy status of open customer bill inquiries. This process is responsible for keeping close watch over the resolving progress. When customer bill inquiry isn't handled in time, this process will escalate customer billing inquiry for notification. **Explanatory** Not used for this process element **Mandatory** The purpose of Monitor Customer Bill Inquiry Jeopardy Status process is to monitor the jeopardy status of open customer bill inquiries. This process is responsible for keeping close watch over the resolving progress. When customer bill inquiry isn't handled in time, this process will escalate customer billing inquiry for notification. **A** *Note: Case Management capabilities include the ability to set target completion for actions and to monitor and escalate if exceeded.* **[BOD] eTOM 1.1.1.12 4 Track and Manage Customer Bill Enquiry Resolution** Singleview case management is used to track and manage customer problem handling activities. It provides functionality to assign, coordinate, and track problems, and escalate them if appropriate.

[BOO] 3.3.13 Case Management (entire section)

Optional

Not used for this process element

Interactions

Not used for this process element

4.8.4.5 Level 4: Initiate S/P Customer Bill Inquiry Resolution Request (1.1.1.12.4.5) – Mapping Details

Process Identifier: 1.1.1.12.4.5

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.12.4.5 – Initiate S/P Customer Bill Inquiry Resolution Request
Brief Description Initiate requests, through - S/P Settlements & Payments Management for resolution by the supplier/partner of the specific bill inquiries/complaints. **Extended Description** The purpose of Initiate S/P Customer Bill Inquiry Resolution Request process is to Initiate re-quests, through - S/P Settlements & Payments Management for resolution by the supplier/partner of the specific bill inquiries/complaints. Some specific product and/or service components may be owned and managed by suppliers/partners. In these cases, this process is responsible for initiating requests, through - S/P Settlements & Payments Management for resolution by the supplier/partner of the specific bill inquiries/complaints. **Explanatory** Not used for this process element **Mandatory** The purpose of Initiate S/P Customer Bill Inquiry Resolution Request process is to Initiate re-quests, through - S/P Settlements & Payments Management for resolution by the supplier/partner of the specific bill inquiries/complaints. Some specific product and/or service components may be owned and managed by suppliers/partners. **AM** *Note: Within Case Management the workgroup that an action is assigned to can represent a 3rd party that can be notified of their action by SMS/e-mail or a remote 3rd party application that can be integrated to trigger execution of the action and receive and update status upon completion.* **[BOD] eTOM 1.1.1.12 4 Track and Manage Customer Bill Enquiry Resolution** Singleview case management is used to track and manage customer problem handling activities. It

provides functionality to assign, coordinate, and track problems, and escalate them if appropriate.

[BOO] 3.3.13 Case Management (entire section)

[BOO] 3.8 Integration Infrastructure (entire section)

[Billing Inquiry to 3rd Party] (entire note)

Optional

Not used for this process element

Interactions

In these cases, this process is responsible for initiating requests, through - S/P Settlements & Payments Management for resolution by the supplier/partner of the specific bill inquiries/complaints.

4.8.4.6 Level 3: Track & Manage Customer Bill Inquiry Resolution (1.1.1.12.4) – TM Forum Assessor Scores

1.1.1.12.4 Track & Manage Customer Bill Inquiry Resolution	
Grouping of Implied Tasks	**Score**
Schedule Customer Bill Inquiry Analysis and Adjustment Activities (1.1.1.12.4.1)	*100%*
Assign Customer Bill Inquiry Analysis and Adjustment Activities (1.1.1.12.4.2)	*100%*
Coordinate Customer Bill Inquiry Analysis and Adjustment Activities (1.1.1.12.4.3)	*100%*
Monitor Customer Bill Inquiry Jeopardy Status (1.1.1.12.4.4)	*100%*
Initiate S/P Customer Bill Inquiry Resolution Request (1.1.1.12.4.5)	*100%*
Total score for Parent Level 3 Process	**500/500 = 100% = 5**

4.8.5 Level 3: Report Customer Bill Inquiry (1.1.1.12.5) – Mapping Details

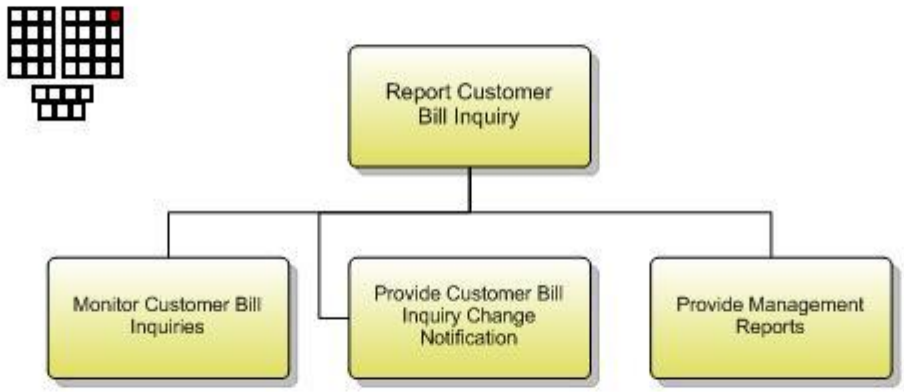


Figure 4.46 Report Customer Bill Inquiry decomposition into level 4 processes

Process Identifier: 1.1.1.12.5

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Report on the customer's bill inquiry.

Extended Description

The objective of the Report Customer Bill Inquiry processes is to monitor the status of customer bill inquiries, provide notifications of any changes and provide management reports.

These processes are responsible for continuously monitoring the status of customer bill inquiries and managing notifications to other processes and to other parties, including customers, reg-istered to receive notifications of any status changes. Notification lists are managed and maintained by the Support Bill Inquiry Handling processes.

These processes record, analyze and assess the customer bill inquiry status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Bill Inquiry Handling processes. These specialized summaries could be specific reports required by specific audiences and/or customers.

These processes also report any identified constraints that can affect customer billing quality standards to other processes. These constraints may include specific resource (billing applica-tion and/or database, for example) failures, etc.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.8.5.1 Level 4: Monitor Customer Bill Inquiries (1.1.1.12.5.1) – Mapping Details

Process Identifier: 1.1.1.12.5.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.5.1 – Monitor Customer Bill Inquiries**
Brief Description Monitor the status of customer bill inquiries continuously. **Extended Description** The purpose of Monitor Customer Bill Inquiries process is to continuously monitor the status of all customer bill inquires. The monitoring starts when a customer bill inquiry is created until it is cancelled or closed. The process is responsible for logging all the status changes on customer bill inquiries including creation, modification, cancellation and etc. **Explanatory** The monitoring starts when a customer bill inquiry is created until it is cancelled or closed **Mandatory** The purpose of Monitor Customer Bill Inquiries process is to continuously monitor the status of all customer bill inquires. The process is responsible for logging all the status changes on customer bill inquiries including creation, modification, cancellation and etc. **AM** *Note: Standard reports are provided that can be run ad-hoc or scheduled.* **[BOD] eTOM 1.1.1.2.3 Analyse and Report on Customer.** Singleview has the following standard customer care reports: • CM Issue Type by Customer Type Provides a total of all issues captured (that a user has authority to view) and the customer types associated with those issues. It is a summary report listing a count of issues by customer type and issue type. The report allows the following to be defined by a suitably privileged user: ▪ Period on which to report ▪ Report only on a specific issue type

  - Report only on a specific customer type
  - Order to sort of group results.

- CM Issue trend

Lists number of issues raised, grouped by issue type for a defined period, and an optional comparison period. On submission of the report, the user must specify the following:

  - Reporting period
  - Issue types to be reported on (or all types).

- CM Case by User

Lists type and status of cases by user and case type. It reports the number of cases received, closed, and open over a specified period of time. The counts are per user and grouped by the type of case. Open cases facilitate a detailed breakdown of the time that they have been opened, and can be broken up into three periods of time (that is, 7, 14, or 21 days).

[BOD] Singleview Reports (XML)

Finance Summary Adjustments	Provides a summary of adjustments applied over a specified period, including the total amount and number of adjustments performed and distributed by adjustment type. It is intended to be a financial and management report about the level of adjustment activity and its financial impacts. **Security** All adjustments are included in the report, regardless of security groups. **Remarks** As adjustments can be created in multiple currencies, the report provides a total amount for each currency where adjustments of that adjustment type exists.

Total Disputes	Provides a summary of outstanding disputes. **Security** All disputes are included in this report, regardless of security groups. **Remarks** This report assists in understanding the magnitude and type of outstanding disputes, and retrieves all disputes open at the current date-time.

Optional

Not used for this process element

Interactions

Not used for this process element

4.8.5.2 Level 4: Provide Customer Bill Inquiry Change Notification (1.1.1.12.5.2) – Mapping Details

Process Identifier: 1.1.1.12.5.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.12.5.2 – Provide Customer Bill Inquiry Change Notification
Brief Description Manage notifications to other processes and to other parties. **Extended Description** This purpose of Provide Customer Bill Inquiry Change Notification process is to manage notifications to other processes and to other parties, including customers, registered to receive notifications of any status changes. Notification lists are managed and maintained by the Support Bill Inquiry Handling processes. **Explanatory** Not used for this process element **Mandatory** This purpose of Provide Customer Bill Inquiry Change Notification process is to manage notifications to other processes and to other parties, including customers, registered to receive notifications of any status changes. **A** *Note: Case Management can provide notifications to other processes and parties either by configuring notifications (SMS, e-mail) against actions in the workflow and/or defining specific actions to be execute, typically to notify external applications via integration.* **[BOO] 3.3.13 Case Management (entire section)** **[BOO] 3.8 Integration Infrastructure (entire section)** **Optional**

Not used for this process element

Interactions

Notification lists are managed and maintained by the Support Bill Inquiry Handling processes

4.8.5.3 Level 4: Provide Management Reports (1.1.1.12.5.3) – Mapping Details

Process Identifier: 1.1.1.12.5.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.12.5.3 – Provide Management Reports**
Brief Description Provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Bill Inquiry Handling processes. **Extended Description** The purpose of Provide Management Reports is to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Bill Inquiry Handling processes. This process records, analyzes and assesses the customer bill inquiry status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Bill Inquiry Handling processes. These specialized summaries could be specific reports required by specific audiences and/or customers. This process also reports any identified constraints that can affect customer billing quality standards to other processes. These constraints may include specific resource (billing application and/or database, for example) failures, etc. **Explanatory** These specialized summaries could be specific reports required by specific audiences and/or customers. **Mandatory** The purpose of Provide Management Reports is to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Bill Inquiry Handling processes. This process records, analyzes and assesses the customer bill inquiry status changes to provide management reports and any specialized summaries of the efficiency and effectiveness of the overall Bill Inquiry Handling processes. This process also reports any identified constraints that can affect customer billing quality standards to other processes. **AM** *Note: Standard reports are provided that can be run ad-hoc or scheduled.*

[BOD] eTOM 1.1.1.2.3 Analyse and Report on Customer.

Singleview has the following standard customer care reports:

- CM Issue Type by Customer Type

  Provides a total of all issues captured (that a user has authority to view) and the customer types associated with those issues. It is a summary report listing a count of issues by customer type and issue type. The report allows the following to be defined by a suitably privileged user:

  - Period on which to report
  - Report only on a specific issue type
  - Report only on a specific customer type
  - Order to sort of group results.

- CM Issue trend

  Lists number of issues raised, grouped by issue type for a defined period, and an optional comparison period. On submission of the report, the user must specify the following:

  - Reporting period
  - Issue types to be reported on (or all types).

- CM Case by User

  Lists type and status of cases by user and case type. It reports the number of cases received, closed, and open over a specified period of time. The counts are per user and grouped by the type of case. Open cases facilitate a detailed breakdown of the time that they have been opened, and can be broken up into three periods of time (that is, 7, 14, or 21 days).

[BOD] Singleview Reports (XML)

Finance Summary Adjustments	Provides a summary of adjustments applied over a specified period, including the total amount and number of adjustments performed and distributed by adjustment type. It is intended to be a financial and management report about the level of adjustment activity and its financial impacts. **Security** All adjustments are included in the report, regardless of security groups. **Remarks** As adjustments can be created in multiple currencies, the report provides a total amount for each currency where adjustments of that adjustment type exists.

Total Disputes	Provides a summary of outstanding disputes. **Security** All disputes are included in this report, regardless of security groups. **Remarks** This report assists in understanding the magnitude and type of outstanding disputes, and retrieves all disputes open at the current date-time.

Optional

These constraints may include specific resource (billing application and/or database, for example) failures, etc.

Interactions

Not used for this process element

4.8.5.4 Level 3: Report Customer Bill Inquiry (1.1.1.12.5) – TM Forum Assessor Scores

1.1.1.12.5 Report Customer Bill Inquiry	
Grouping of Implied Tasks	**Score**
Monitor Customer Bill Inquiries (1.1.1.12.5.1)	*100%*
Provide Customer Bill Inquiry Change Notification (1.1.1.12.5.2)	*100%*
Provide Management Reports (1.1.1.12.5.3)	*100%*
Total score for Parent Level 3 Process	**300/300 = 100% = 5**

4.8.6 Level 3: Close Customer Bill Inquiry Report (1.1.1.12.6) – Mapping Details

Process Identifier: 1.1.1.12.6

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

4.8.6.1 Level 3: Close Customer Bill Inquiry Report (1.1.1.12.6) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

Level 3 PROCESS MAPPING DETAILS **1.1.1.12.6 – Close Customer Bill Inquiry Report**
Brief Description Record the results of the adjustment if approved into the records relating to the customer's bill invoice. **Extended Description** The purpose of Record Customer Bill Invoice Adjustment process is to record the results of the adjustment if approved into the records relating to the customer's bill invoice. This process is responsible for recording the entire adjustment events including adjustment operator, timestamp and detailed reason, for management purpose. **Explanatory** Not used for this process element **Mandatory** The purpose of Record Customer Bill Invoice Adjustment process is to record the results of the adjustment if approved into the records relating to the customer's bill invoice. This process is responsible for recording the entire adjustment events including adjustment operator, timestamp and detailed reason, for management purpose. **AM** **[BOD]eTOM 1.1.1.12.6 – Close Customer Bill Inquiry Report** A customer bill enquiry that is managed in a Singleview case is closed when all the associated case issues and actions are completed.

Optional

Not used for this process element

Interactions

Not used for this process element

4.8.6.2 Level 3: Close Customer Bill Inquiry Report (1.1.1.12.6) – TM Forum Assessor Scores

1.1.1.12.6 Close Customer Bill Inquiry Report	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100%**

4.8.7 Supporting Evidence References (Works Cited)

BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
BOO	BSS Baseline Offering Overview, Baseline Offering Overview.pdf
PD	Singleview Version 8.00 PRODUCT DESCRIPTION, singleview_v8_product_description.pdf
Billing Inquiry to 3rd Party	Note describing Case Management for Billing Inquiry, Billing Inquiry to Third Party.pdf

4.8.8 Level 2: Bill Inquiry Handling (1.1.1.12) – Conformance Results

Table 4.8 Level 2: Bill Inquiry Handling (1.1.1.12) – Conformance Results

1.1.1.12 - Bill Inquiry Handling	
Level 3 Processes	**Score**
1.1.1.12.1 - Create Customer Bill Inquiry Report	5
1.1.1.12.2 - Assess Customer Bill Inquiry Report	5
1.1.1.12.3 - Authorize Customer Bill Invoice Adjustment	4.8
1.1.1.12.4 - Track & Manage Customer Bill Inquiry Resolution	5
1.1.1.12.5 - Report Customer Bill Inquiry	5
1.1.1.12.6 - Close Customer Bill Inquiry Report	5

4.9 L2: Charging (1.1.1.13)

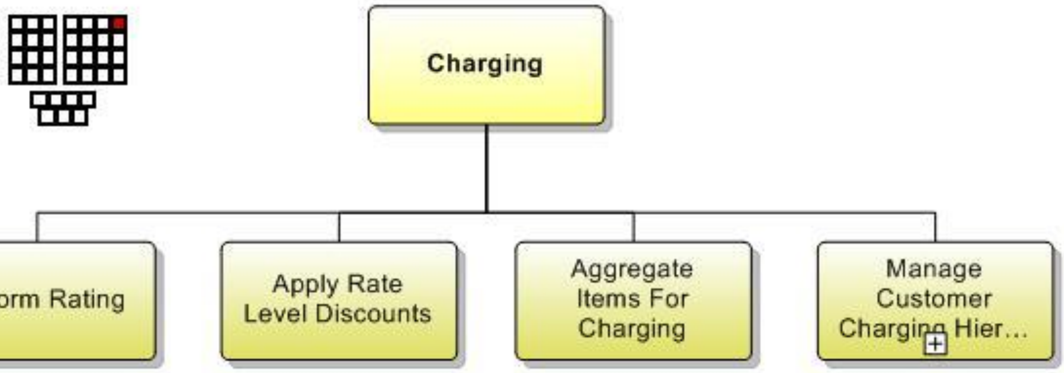


Figure 4.47 Charging decomposition into level 3 processes

Process Identifier: 1.1.1.13

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Managing the assignment of a value (monetary or other) to an event or product, or combination (bundle or aggregate) of the above.

Extended Description

The purpose of Charging is to assign a value (monetary or other) to an event or product, or combination

(bundle or aggregate) of the above. The charge may be either a credit or a debit and can be handled either online or offline.

Online charging is performed in real-time, requiring an authorization component which may affect how the service is rendered and enables an operator to provide prepaid services to its customers. Whereas offline charging is performed after the service is rendered and is not required to be done in real-time and generally relates to subscription based products.

The charge may appear on a customer invoice via Apply Pricing, Discounting, Adjustments & Rebates.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.9.1 Level 3: Perform Rating (1.1.1.13.1) – Mapping Details

Process Identifier: 1.1.1.13.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

4.9.1.1 Level 3: Perform Rating (1.1.1.13.1) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

Level 3 PROCESS MAPPING DETAILS **1.1.1.13.1 – Perform Rating**
Brief Description Calculating the value of the service/product, before, during or after the rendering of the service. **Extended Description** Process responsible for calculating the value of the service/product, before, during or after the rendering of the service, based on parameters of the request (type, quantity, etc.), parameters of the customer/subscriber (tariffs, price plans, accumulated usage, contracts, etc.) and other parameters (time-of-day, taxes, etc.). The same request maybe rated differently for different subscribers based on their purchased offers or service agreements. **A** *Note: One-Off (activation/cancellation) and Recurring charges are rated as events. There is a process that runs to generate these events as a pre-cursor to billing.* **[BOD] eTOM 1.1.1.13 Charging --> 1.1.1.13.1 – Perform Rating** Singleview allows the calculation of a charge value from the following inputs: • Parameters of the event (for example, voice/SMS/data, volume, duration, and destination) • Attributes of the customer and/or their products • Other factors (for example, taxation). Singleview has the following functionality: • Generates multiple charges for a single event (for example, calculates revenue share and loyalty points). • Calculates/derives values in addition to the charge value, and stores them (for example, calculates a charge according to a competitor's tariff). • Allows a charge to be categorised as either billable, which impacts a balance, or non-billable, which is only for informational purposes.

- Uses tariff eligibility expressions to describe criteria used by the rating engine to evaluate whether an event is subject to a specific tariff.

  Tariff eligibility expressions typically utilise event parameters such as event type, start time, and rating subtotals (for example, free unit allowances).

Singleview has the following predefined charge rates:

- Flat rate, which is a common rate used for an event, regardless of its specific details.
- Tiered rate, which is used for multiple rates and calculated for separate components of an event, with the resultant charge being the sum of the rates.
- Tapered rate, which is a tiered rate where consecutive components are rated with decreasing prices per unit.
- Threshold rate, which is used when a specified metric for the event (for example, volume), breaches a certain value, and the charge for the entire event is calculated with the price corresponding to the threshold value.
- Flag-fall, which is a charge always imposed for an event (for example, to cover connection cost).

Events may be split for rating purposes into multiple segments (for example, peak and off-peak rates).
Events are always rated using the rate plan active at the event start date.
The process applies to regular, externally initiated events, and to internal Singleview events such as one-off charges or rental events.

[PD] 4.9 Rating (entire section)

[PD] 4.10 Real-time Rating (entire section)

[PD] 5.1 Reservations and Reverse Rating (entire section)

[CBO] Billing and Finance -> Rating and Billing Process Overview (entire section)

[AO] Rating Architecture -> Rating Overview (entire section)

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

4.9.1.2 Level 3: Perform Rating (1.1.1.13.1) – TM Forum Assessor Scores

1.1.1.13.1 – Perform Rating	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.9.1.3 Level 3: Apply Rate Level Discounts (1.1.1.13.2) – Mapping Details

Process Identifier: 1.1.1.13.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

4.9.1.4 Level 3: Apply Rate Level Discounts (1.1.1.13.2) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

Level 3 PROCESS MAPPING DETAILS 1.1.1.13.2 – Apply Rate Level Discounts
Brief Description Applies discounts to product prices. **Extended Description** This process applies discounts to product prices at an individual product level. A discount may be expressed as a monetary amount or percentage, and modifies a price for a product. When a discount is expressed as a percentage, the discounting process determines the discount calculated in relation to the price for the product. The discount may be displayed as a separate entry on the bill or may be combined with the rate for the product to only show as one entry. Discounts may be a one-time event or may have some duration (days, months, life of product, etc.). Discounts may apply to a specific customer or be generally available based on selection of products (for example - bundles). Discounting structures may involve tiers, tapers, or thresholds. **AM** *Note: Entitlements have been included here as they are effectively a discounting mechanism whereby the price of usage is discounted against consumption of the entitlement. Invoice Design Tool has been included as combination of this and charge assignment functionality means there are many options for presentation of results of discounting on the invoice. It is only the configuration of the invoice layout that is a partially manual process supported by the Invoice Design Tool.* **[BOD] eTOM 1.1.1.13 Charging --> 1.1.1.13.2 – Apply Rate Level Discounts** Singleview functionality includes: • Applying discounts either by modifying a value directly, or creating a separate discount credit. • Implementing any discount calculation including tiered and tapered models. • Applying eligibility criteria such as date period, customer attributes, or product attributes (for example, 'For this month only all consumer customers on the Easy tariff get 5% off calls to other mobiles'). **[PD] 4.7 Discounts (entire section)** **[PD] 4.13 Invoices and Customer Letter Correspondence** In the invoicing stage, billing and customer data are merged with pre-defined invoice formats to produce the invoice image that represents the customer's bill. The invoice formats are produced using the Invoice Design Tool. This tool is a very powerful and flexible way to produce customised

invoices in multiple formats**.**

[PD] 5.4.7 Complex Tariffing (entire section)

[PD] 5.5.4 Real Time Rating (entire section)

[PD] 7.6 Entitlements/Free Units Management (entire section)

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.9.1.5 Level 3: Apply Rate Level Discounts (1.1.1.13.2) – TM Forum Assessor Scores

1.1.1.13.2 - Apply Rate Level Discounts	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.9.1.6 Level 3: Aggregate Items For Charging (1.1.1.13.3) – Mapping Details

Process Identifier: 1.1.1.13.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

4.9.1.7 Level 3: Aggregate Items For Charging (1.1.1.13.3) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

Level 3 PROCESS MAPPING DETAILS 1.1.1.13.3 – Aggregate Items For Charging
Brief Description Manages the accumulation of items that may be used in the selection of a value or in calculation of a rate/discount. **Extended Description** This process is responsible for accumulating contributing items, which can be quantities, values (monetary or other) or both. Aggregation can occur over time or can be initiated to gather a "snapshot" of the items at a point in time. The aggregated items may be used in Perform Rating or Apply Rate Level Discounts to determine the applicable price or discount and may further be used as a quantity in the calculation of a rate or discount. **A** *Note: Singleview has two mechanisms for aggregation. Subtotals are used to aggregate values which are then used as an input into calculations. Entitlements are a specific form of subtotal where the value is run down against eligible usage.* **[BOD] eTOM 1.1.1.13 Charging --> 11.1.1.13.3 – Aggregate Items For Charging** Singleview can aggregate values across multiple charges, and uses them to deliver integrated network policy management. For example, it can maintain a running total of: • Top-up amounts to trigger rewards or to feed into the rate-level discounting of subsequent events. • Data consumption with triggers to invoke policy when thresholds are reached. **[PD] 4.4.2 Costing Components** 9. <u>Subtotal</u> 10. Subtotals calculate the total (or the minimum or maximum) of all charges for a particular service or customer. The value of the subtotal may then be used in subsequent calculations in the billing process. For example, subtotals are often used in conjunction with discount tariffs to calculate a discount charge based on the total usage for a period. <u>Rating Subtotal</u> 11. Provides the ability to aggregate data at rating time. Rating subtotals can be accessed from EPM expressions thus making them available to the rating and billing engines.

[PD] 4.12 Billing

12. Firstly, unlike the rating engine (which applies tariffs to individual data records) the billing engine applies tariffs to aggregated data records. Aggregation means that the individual charges are aggregated (grouped) into one or more pre-defined groups for the purpose of obtaining a total value or charge for that grouping. In general, charges are aggregated according to the pre-defined customer hierarchy so that totals can be obtained for normalised events, services, individual and child customer nodes, and customers.

Secondly, the tariffs applied to the aggregated records are generally discount tariffs (benefits), rather than charge tariffs. For example, if a customer's usage is higher than a pre-set limit for the specified billing cycle, a volume discount could be applied to the total cost of the calls.

(PD) 5.4.7 Complex Tariffing

- Aggregate based discounting models, for example, 10th call per day is given a 50% disc.

[PD] 7.6 Entitlements/Free Units Management (entire section)

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.9.1.8 Level 3: Aggregate Items For Charging (1.1.1.13.3) – TM Forum Assessor Scores

1.1.1.13.3 – Aggregate Items For Charging	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.9.2 Level 3: Manage Customer Charging Hierarchy (1.1.1.13.4) – Mapping Details

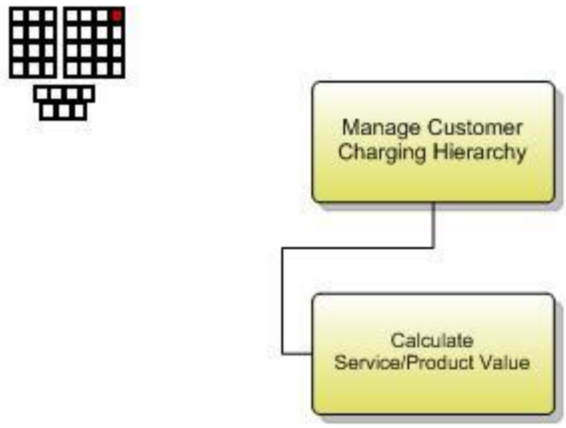


Figure 4.48 Manage Customer Charging Hierarchy decomposition into level 4 processes

Process Identifier: 1.1.1.13.4

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Managing the charging relationships among subscribers.

Extended Description

Customer hierarchies are commonly used for corporate customers, family plans or other type of affinity groups. This process manages the charging relationships among subscribers, e.g. sharing, inheriting or restricting balances, price plans and discounts. Thereby assuring that a charge is added to or subtracted from the correct (sub-)account balance. **A**

Note: There are four main mechanisms to be considered:

1. *The "traditional" customer billing hierarchy whereby charges are rolled up to invoice points – this is fully supported by the Singleview Customer Model.*
2. *The use of customer derived attributes to create "soft" hierarchies that are independent of the customer billing hierarchy.*
3. *Every tariff in Singleview includes the specification of which account to book a charge/credit generated by the tariff to. This specification can be static i.e. account is explicitly stated or dynamic i.e. account is derived by evaluating rules e.g. what type of event has invoked the tariff and can also make use of any soft hierarchies that have been defined.*

4. *Every entitlement in Singleview can be specified to be specific to current customer or shared within the customer billing hierarchy.*

[BOD] eTOM 1.1.1.13 Charging -> 11.1.1.13.3 – Aggregate Items for Charging

The allocation of entitlements for a product can be shared across multiple products. The sharing levels are:

- Current customer

  All active products belonging to a customer can consume from the same entitlement allocation.

- Whole of hierarchy

  All active products belonging to all customers within a hierarchy can consume from the same entitlement allocation

[BOD] eTOM 1.1.1.13 Charging -> 11.1.1.13.4 – Manage Customer Charging Hierarchy

Singleview allows the charging relationships between customers and their products to be modelled as required. While it provides the traditional customer hierarchy, the modelling capabilities are more extensive.
For any charge incurred Singleview uses the relationships to determine the account/balance that is liable for its settlement; for example, a parent pays for a teenager's charges when they relate to calls to home, but the teenager is liable for all other charges.
The relationships can also be with third parties. Examples are:

- A partner receiving a percentage of a charge incurred by an end customer.
- A third party settling the charge on the end customer's behalf when they are consuming data as a result of visiting a sponsored site.

All customer charging hierarchy capabilities are available both in batch rating and real-time in online mode.

[BOO] 3.3.1 Customer Information Management (entire section)

[BOO 3.3.10] Billing Account Management (entire section)

[BOO] 3.3.14 Charge Calculation and Balance Management

Singleview allows multiple concurrent operations on a balance; for example, simultaneous voice call and data browsing that both consume from the same balance in real-time. Similarly multiple subscriptions consuming from one balance; for example a free minutes allowance shared by all members of a department.

[PD] 4.1.1 Customer Care GUI – Back Office (sections about **"***Support for customer hierarchies"* and section about "*Customer and Account Model".*

Singleview supports the sharing of balances, bundles and allowances across multiple customer products and services as well as between customer hierarchy nodes.

[AO] Convergent Billing Data Model -> Customer Data Model (entire section)

[AO] Convergent Billing Data Model -> Product Data Model -> Costing Components -> Charge Catego (entire section)

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.9.2.1 Level 4: Calculate Service/Product Value (1.1.1.13.4.1) – Mapping Details

Process Identifier: 1.1.1.13.4.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.13.4.1 – Calculate Service/Product Value
Brief Description Calculate the value of the service/product, before, during or after the rendering of the service **Extended Description** The purpose of Calculate Service/Product Value process is to calculate the value of the service/product, before, during or after the rendering of the service, based on parameters of the request (type, quantity, etc.), parameters of the customer/subscriber (tariffs, price plans, accumulated usage, contracts, etc.) and other parameters (time-of-day, taxes, etc.). The same request maybe rated differently for different subscribers based on their purchased offers or service agreements. **Explanatory** Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.9.2.2 Level 3: Manage Customer Charging Hierarchy (1.1.1.13.4) – TM Forum Assessor Scores

1.1.1.13.4 Manage Customer Charging Hierarchy	
Grouping of Implied Tasks	**Score**
Calculate Service/Product Value (1.1.1.13.4.1)	
Total score for Parent Level 3 Process	**100% = 5**

4.9.3 Supporting Evidence References (Works Cited)

AO	Singleview 8.0 Architecture Overview, documentation for release 8.00.04, d-sv-aov.zip
BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
BOO	BSS Baseline Offering Overview
PD	Singleview Version 8.00 PRODUCT DESCRIPTION, Singleview_v8_00_product_description-final.pdf

4.9.4 Level 2: Charging (1.1.1.13) – Conformance Results

Table 4.9 Level 2: Charging (1.1.1.13) – Conformance Results

1.1.1.13 - Charging	
Level 3 Processes	**Score**
1.1.1.13.1 - Perform Rating	5
1.1.1.13.2 - Apply Rate Level Discounts	5
1.1.1.13.3 - Aggregate Items For Charging	5
1.1.1.13.4 - Manage Customer Charging Hierarchy	5

4.10 L2: Manage Billing Events (1.1.1.14)

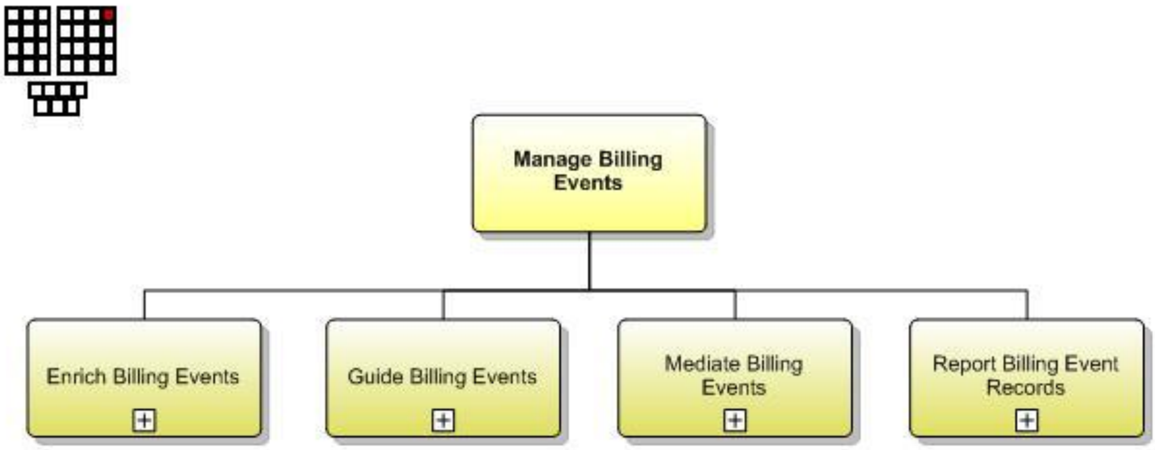


Figure 4.49 Manage Billing Events decomposition into level 3 processes

Process Identifier: 1.1.1.14

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Encompasses the functions required to guide, distribute, mediate, summarize, accumulate, and analyze billing event records.

Extended Description

The billing events management processes encompass the functions required to guide, distribute, mediate, summarize, accumulate, and analyze billing event records. These processes may occur in real-time, near real-time, or may be executed on a periodic basis.

Billing event records include records produced by network elements (service events), records that indicate the need for periodic billing of a reoccurring product rate, and records that indicate the need for billing of a non-reoccurring rate.

The guiding processes ensures that the event records used in the billing processes are appropriately related to the correct customer billing account and products.

The billing event records are edited and if necessary reformatted (mediated) to meet the needs of subsequent processes. The billing event records may also be enriched with additional data during this process.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.10.1.1 Level 3: Enrich Billing Events (1.1.1.14.1) – Mapping Details

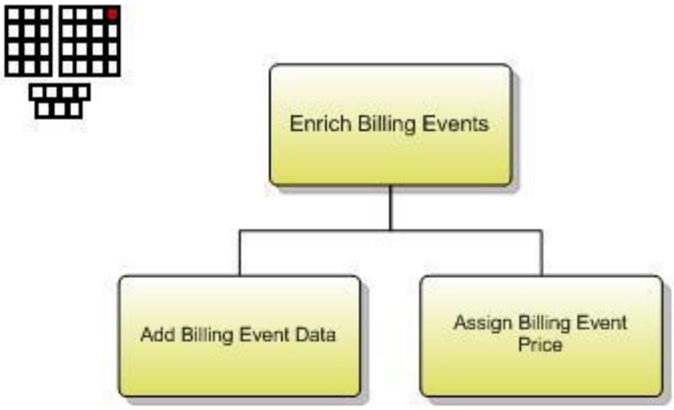


Figure 4.50 Enrich Billing Events decomposition into level 4 processes

Process Identifier: 1.1.1.14.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Brief Description

Enrich billing event records with additional data.

Extended Description

The Enrich Billing Events processes will augment the billing event records by adding data to the records from sources such as customer, product, or other reference data.

A billing event may be assigned a price without consideration of specific product or customer information. The assigned price may be used to enrich the billing event record.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.10.1.2 Level 4: Add Billing Event Data (1.1.1.14.1.1) – Mapping Details

Process Identifier: 1.1.1.14.1.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.14.1.1 – Add Billing Event Data**
Brief Description Add data to the records from sources such as customer, product, or other reference data to augment the billing event records. **Extended Description** The purpose of Add Billing Event Data process is to add data to the records from sources such as customer, product, or other reference data to augment the billing event records. This process is responsible for enriching billing events with additional data which is not provided by or known by services providing the billing events, but needed by other billing processes. An example of such data is service to product mapping information and subscriber identity to customer mapping information. Data can be fetched from internal configuration or be looked up in data sources. Hence this process is also responsible for obtain additional data s from corresponding data sources based on each billing events record information. **Explanatory** An example of such data is service to product mapping information and subscriber identity to customer mapping information. Data can be fetched from internal configuration or be looked up in data sources. **Mandatory** The purpose of Add Billing Event Data process is to add data to the records from sources such as customer, product, or other reference data to augment the billing event records. This process is responsible for enriching billing events with additional data which is not provided by or known by services providing the billing events, but needed by other billing processes. Hence this process is also responsible for obtaining additional data from corresponding data sources based on each billing events record information. **A**

[BOD] eTOM 1.1.1.14.1 – Enrich Billing Events

Singleview has the following functionality:

- Allows billing events to include data derived from sources such as customer, product, or reference data.[…]

Information from the original usage event is used to derive certain fields in the normalised event record (for example, distance and time zone). The file containing the original source event is archived to a directory.

Additional data may be required to process an event. A tariff plan may use the distance between origin and destination of a call to apply the correct charge. This information is derived from values in the event record of a call. The tariff may use derived attributes that allow required values to be expressed in the form of lookup tables, or logic, or a combination of both

[AO] Rating Architecture->Event Normalization (ENM) Process

A sequence of decoding expressions allows additional validation to be performed on event direct variables, and new information to be derived from the information in the raw event and assigned to event direct variables. For example, a table lookup can be used to map a cell ID from the raw event into a region code, and store the region code in an event direct variable.

Optional

Not used for this process element

Interactions

Not used for this process element

4.10.1.3 Level 4: Assign Billing Event Price (1.1.1.14.1.2) – Mapping Details

Process Identifier: 1.1.1.14.1.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. “instantiated”) with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.14.1.2 – Assign Billing Event Price**
Brief Description Assign a price to a billing event without consideration of specific product or customer information. The assigned price may be used to enrich the billing event record. **Extended Description** The purpose of Assign Billing Event Price process is to assign a price to a billing event without consideration of specific product or customer information. The assigned price may be used to enrich the billing event record. This process performs static rating of service events without considering customer or product information. As an example, originating on-net call CDRs are priced at $1 per started minute during peak hours, without considering customer data or agreements for the involved user which could affect the final price paid. This process may assign a price to a billing event automatically according to pre-configured rules, or manually. **Explanatory** The assigned price may be used to enrich the billing event record. As an example, originating on-net call CDRs are priced at $1 per started minute during peak hours, without considering customer data or agreements for the involved user which could affect the final price paid. **Mandatory** The purpose of Assign Billing Event Price process is to assign a price to a billing event without consideration of specific product or customer information. This process performs static rating of service events without considering customer or product information. **A** *Note: Singleview rating process and its rating engine does not differentiate between calculating the base rate, and the rate that considers customer or product information. The Applied Customer Billing Rate is calculated by tariff expressions which may (but don’t have to) consider customer-specific variables.* **[BOD] eTOM 1.1.1.14.1 – Enrich Billing Events**

The tariff may use derived attributes that allow required values to be expressed in the form of lookup tables, or logic, or a combination of both.

[AO] Rating Architecture-> Event Rating (ERT) Process (entire section)

[CCPCG] Tariff -> Tariff Components (entire section)

[PD] 4.9 Rating

- Rating is the process in which normalised event records are rated (priced) to produce charges. Normalised event records are created by event data being converted into a standard record format.

- All rating is performed by the rating engine, which allows the construction of charges based on service data, as well as event records.

- The key to the rating engine is its power and flexibility, which allows complex tariff regimes to be handled easily and new products and tariffs to be introduced quickly and efficiently.

Another important aspect of the rating engine is the ability to apply **more than one tariff** to the same normalised event record. This technique, known as parallel tariffing, makes it possible to apply separate tariffs that calculate charges to customers, commissions, taxes (such as VAT or GST), general levies, competitor's tariffs (for bill comparisons), and loyalty points.

Optional

This process may assign a price to a billing event automatically according to pre-configured rules, or manually.

Interactions

Not used for this process element

4.10.1.4 Level 3: Enrich Billing Events (1.1.1.14.1) – TM Forum Assessor Scores

1.1.1.14.1 Enrich Billing Events	
Grouping of Implied Tasks	**Score**
Add Billing Event Data (1.1.1.14.1.1)	*100%*
Assign Billing Event Price (1.1.1.14.1.2)	*100%*
Total score for Parent Level 3 Process	**200/200 = 100% = 5**

4.10.2 Level 3: Guide Billing Events (1.1.1.14.2) – Mapping Details

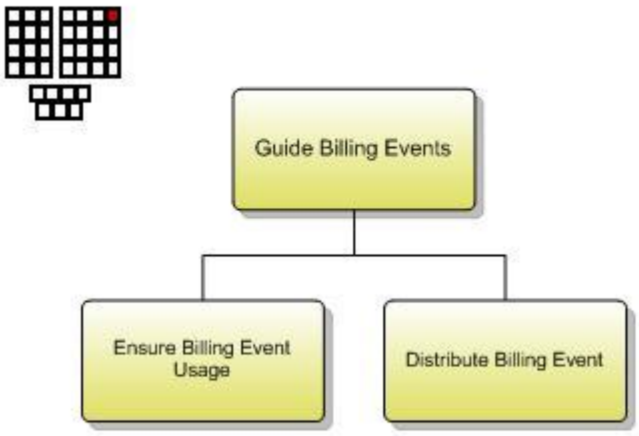


Figure 4.51 Guide Billing Events decomposition into level 4 processes

Process Identifier: 1.1.1.14.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Ensures that the event records used in the billing processes are related to the correct customer billing account and subscribed products.

Extended Description

The Guide Billing Events processes ensure that the event records used in the billing process relate to the correct customer billing account and products. A specific event record may be related to multiple customer billing accounts and subscribed products.

Distribution of billing event records to other processes may also occur.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.10.2.1 Level 4: Ensure Billing Event Usage (1.1.1.14.2.1) – Mapping Details

Process Identifier: 1.1.1.14.2.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.14.2.1 – Ensure Billing Event Usage**
Brief Description Ensure that the event records used in the billing process relate to the correct customer billing account and products. **Extended Description** The purpose of Ensure Event Record Usage process is to ensure that the event records used in the billing process relate to the correct customer billing account and products. A specific event record may be related to multiple customer billing accounts and subscribed products. **Explanatory** A specific event record may be related to multiple customer billing accounts and subscribed products. **Mandatory** The purpose of Ensure Event Record Usage process is to ensure that the event records used in the billing process relate to the correct customer billing account and products. **A** **[BOD] eTOM 1.1.1.14.2 – Guide Billing Events** Singleview functionality includes: • Guides received billing events to the relevant subscribed products and associated default billing account. **[AO] Rating Architecture-> Event Rating (ERT) Process (entire section)** **[PD] 4.4.4 Multi-Rating** Singleview also provides the ability to rate events multiple times in one single pass, using different rating keys and rate tables if required, and guiding the resulting charges to different accounts.

Optional

Not used for this process element

Interactions

Not used for this process element

4.10.2.2 Level 4: Distribute Billing Event (1.1.1.14.2.2) – Mapping Details

Process Identifier: 1.1.1.14.2.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.14.2.2 - Distribute Billing Event**
Brief Description Distribute billing event records to other processes. **Extended Description** The purpose of Distribute Billing Event process is to distribute billing events to other processes which need access to billing events. As a typical example, billing events are transferred to Charging process for event/product charging via this process. In general, the billing events are distributed in the specific format, e.g. plain text format, binary format, XML format. This process is also responsible for recording distribution logs to avoid duplicated billing event distribution. **Explanatory** As a typical example, billing events are transferred to Charging process for event/product charging via this process. In general, the billing events are distributed in the specific format, e.g. plain text format, binary format, XML format. **Mandatory** The purpose of Distribute Billing Event process is to distribute billing events to other processes which need access to billing events. This process is also responsible for recording distribution logs to avoid duplicated billing event distribution. **A** **[BOD] eTOM 1.1.1.14 Manage Billing Events** […] Singleview performs extensive validation during the processing of billing events including identifying: • Corrupt event files • Corrupt events • Duplicate event files

- Duplicate events.

[BOD] eTOM 1.1.1.14 Manage Billing Events → eTOM 1.1.1.14.3 Mediate Billing Events

Singleview functionality includes the following:

- Reformats received billing events into its internal normalised event format.

[BOD] eTOM 1.1.1.14 Manage Billing Events → eTOM 1.1.1.14.4 Report Billing Event Records

Singleview maintains comprehensive information on all received billing events that can be accessed using the user interface or summary reports.

[AO] Rating Architecture-> Event Normalization (ENM) Process -> ENM Output (entire section)

[AO] Rating Architecture-> Event Rating Output (ERO) Process (entire section)

Optional

Not used for this process element

Interactions

Not used for this process element

4.10.2.3 Level 3: Guide Billing Events (1.1.1.14.2) – TM Forum Assessor Scores

1.1.1.14.2 - Guide Billing Events	
Grouping of Implied Tasks	**Score**
Ensure Billing Event Usage (1.1.1.14.2.1)	*100%*
Distribute Billing Event (1.1.1.14.2.2)	*100%*
Total score for Parent Level 3 Process	**200/200 = 100% = 5**

4.10.3 Level 3: Mediate Billing Events (1.1.1.14.3) – Mapping Details

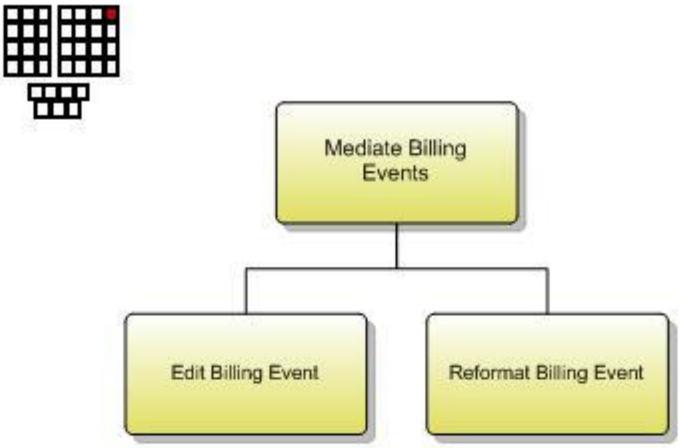


Figure 4.52 Mediate Billing Events decomposition into level 4 processes

Process Identifier: 1.1.1.14.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Edits and reformats data for recipient applications.

Extended Description

The Mediate Billing Events process edits and reformats the data record to meet the needs of a recipient application.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.10.3.1 Level 4: Edit Billing Event (1.1.1.14.3.1) – Mapping Details

Process Identifier: 1.1.1.14.3.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS **1.1.1.14.3.1 – Edit Billing Event**
Brief Description Edit the data record for recipient applications. **Extended Description** This process is responsible for editing billing events to adapt to the contents expected by receiving processes and applications. This includes examining individual fields in billing events, modifying the contents of individual fields in billing events and removing unwanted data and fields, identifying billing event type. Additionally, this process is also responsible for billing events consolidation, billing event splitting, billing events correlation and duplicated billing events deletion if necessary. **Explanatory** Not used for this process element **Mandatory** This process is responsible for editing billing events to adapt to the contents expected by receiving processes and applications. This includes examining individual fields in billing events, modifying the contents of individual fields in billing events and removing unwanted data and fields, identifying billing event type. Additionally, this process is also responsible for billing events consolidation, billing event splitting, billing events correlation and duplicated billing events deletion if necessary. **A** **[BOD] eTOM 1.1.1.14.3 – Mediate Billing Event** Singleview functionality includes the following: • Reformats received billing events into its internal normalised event format. • Performs varying file/record-level validation to ensure [quality of input]

[…]Events are modified using a series of business data derivation steps

[PD] 4.4.4 Multi-Rating

Singleview also provides the ability to rate events multiple times in one single pass, using different rating keys and rate tables if required, and guiding the resulting charges to different accounts.

[BOD] eTOM 1.1.1.14 Manage Billing Events

[…] Singleview performs extensive validation during the processing of billing events including identifying:

- Corrupt event files
- Corrupt events
- Duplicate event files
- Duplicate events.

[AO] Rating Architecture -> Event Normalisation (ENM) Process (entire section)

[AO] Rating Architecture -> Event Rating Output (ERO) Process (entire section)

[AO] Rating Architecture -> Event Normalisation (ENM) Process -> ENM Output (entire section)

[AO] Rating Architecture -> Event Normalisation (ENM) Process -> Batch Validation (entire section)

[AO] Rating Architecture -> Rating Subtotals (entire section)

[SVRAT] Slides 6, 8 and 13

Optional

Not used for this process element

Interactions

Not used for this process element

4.10.3.2 Level 4: Reformat Billing Event (1.1.1.14.3.2) – Mapping Details

Process Identifier: 1.1.1.14.3.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.14.3.2 - Reformat Billing Event
Brief Description Reformat the data record for recipient applications. **Extended Description** The purpose of Reformat Billing Event process is to reformat billing events to adapt to the format expected by receiving processes and applications. This includes examining individual fields in billing events and translating billing events from one format to another Additionally, this process is also responsible for maintenance the input and output format template. **Explanatory** Not used for this process element **Mandatory** The purpose of Reformat Billing Event process is to reformat billing events to adapt to the format expected by receiving processes and applications. This includes examining individual fields in billing events and translating billing events from one format to another Additionally, this process is also responsible for maintenance the input and output format template. **A** **[BOD] eTOM 1.1.1.14.3 – Mediate Billing Event** Singleview reformats received billing events into its internal normalised event format. It does not discriminate against any input source, providing the incoming file/record format is defined to enable conversion to a standard storage format **[PD] 4.8 Processing Event Files** Singleview is designed to bill for any possibilities, as it does not make assumptions about what an incoming event should look like. In order to load multiple types of events into Singleview, a translation Data Interface Language (DIL) specification script is required. The DIL specification applies syntax rules to interpret the incoming data in terms of data types and sequence structures. Records are delimited and parsed into the constituent fields used, and are recognised by Singleview.

[AO] Rating Architecture -> Event Normalisation (ENM) Process (entire section)

Optional

Not used for this process element

Interactions

Not used for this process element

4.10.3.3 Level 3: Mediate Billing Events (1.1.1.14.3) – TM Forum Assessor Scores

1.1.1.14.3 - Mediate Billing Events	
Grouping of Implied Tasks	**Score**
Edit Billing Event (1.1.1.14.3.1)	*100%*
Reformat Billing Event (1.1.1.14.3.2)	*100%*
Total score for Parent Level 3 Process	**200/200 = 100% = 5**

4.10.4 Level 3: Report Billing Event Records (1.1.1.14.4) – Mapping Details

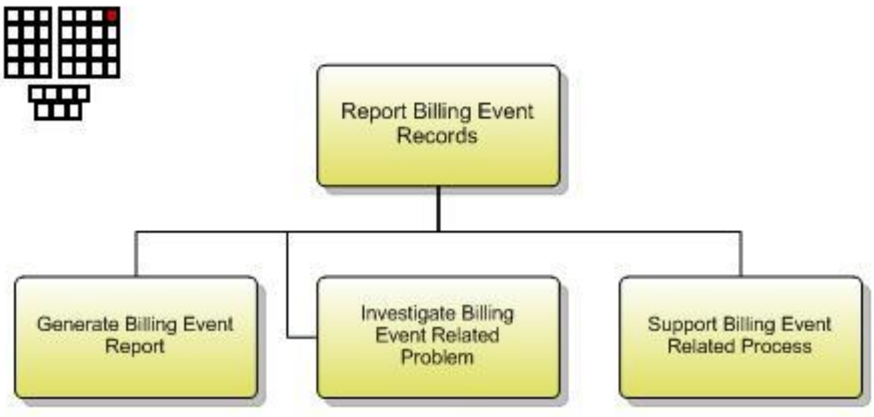


Figure 4.53 Report Billing Event Records decomposition into level 4 processes

Process Identifier: 1.1.1.14.4

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Generate reports on billing event records based on requests from other processes.

Extended Description

The purpose of the Report Billing Event Record processes is to generate reports on billing event records based on requests from other processes.

These processes produce reports that may identify abnormalities, which may be caused by fraudulent activity or related to customer complaints.

Investigation of problems related to these event records is also part of this process.

These processes also support other processes such as customer review of billing events (pre-billing and post-billing).

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.10.4.1 Level 4: Generate Billing Event Report (1.1.1.14.4.1) – Mapping Details

Process Identifier: 1.1.1.14.4.1

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.14.4.1 – Generate Billing Event Report
Brief Description Generate reports on billing event records based on requests from other processes. **Extended Description** The purpose of the Generate Billing Event Report process is to generate reports on billing event records. This process produces reports that may identify abnormalities, which may be caused by fraudulent activity or related to customer complaints. **Explanatory** Not used for this process element **Mandatory** The purpose of the Generate Billing Event Report process is to generate reports on billing event records. This process produces reports that may identify abnormalities, which may be caused by fraudulent activity or related to customer complaints. **A** **[BOD] eTOM 1.1.1.14.4 – Report Billing Event Records** Singleview maintains comprehensive information on all received billing events that can be accessed using the user interface or summary reports. **[BOD] eTOM 1.1.1.12.1 – Create Customer Billing Enquiry Report (entire section)** **[BOD] eTOM 1.1.1.12.2 – Assess Customer Billing Enquiry Report (entire section)** The Billing Enquiry issue in Singleview provides a complete history and current financial status of a customer account on a single screen, and enables users to answer questions about the customer account by viewing: • Details of each transaction • List of events for each invoice

- List of unbilled events.

[SOG] Rating → Running a Rating Task → Checking Results (entire section, including the Error Files part)

Optional

Not used for this process element

Interactions

Not used for this process element

4.10.4.2 Level 4: Investigate Billing Event Related Problem (1.1.1.14.4.2) – Mapping Details

Process Identifier: 1.1.1.14.4.2

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS 1.1.1.14.4.2 - Investigate Billing Event Related Problem
Brief Description Investigate problems related to billing event records. **Extended Description** The purpose of the Investigate Billing Event Related Problem process is to investigate problems related to billing event records. Where reporting indicates problems with billing event records such as data format errors, configuration problems, system or network problems this process initiates and manages an investigation and follow-up of the indicated problems. **Explanatory** Not used for this process element **Mandatory** The purpose of the Investigate Billing Event Related Problem process is to investigate problems related to billing event records. Where reporting indicates problems with billing event records such as data format errors, configuration problems, system or network problems this process initiates and manages an investigation and follow-up of the indicated problems. **AM** **[SOG] Rating → Correcting Rating Errors and Rerating Events (entire section)** **[AO] Rating Architecture -> Event Normalisation (ENM) -> Normalising Errors** **Optional** Not used for this process element **Interactions**

Not used for this process element

4.10.4.3 Level 4: Support Billing Event Related Process (1.1.1.14.4.3) – Mapping Details

Process Identifier: 1.1.1.14.4.3

Process Context

This process element represents part of the overall enterprise, modelled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

Level 4 PROCESS MAPPING DETAILS

1.1.1.14.4.3 - Support Billing Event Related Process

Brief Description

Support other processes such as customer review of billing events (pre-billing and post-billing).

Extended Description

The purpose of the Support Billing Event Related Process process is to support other processes which use or consume billing events. This process manages report requests from other processes. An example of such a process is customer review of billing events (pre-billing and post-billing).

Explanatory

An example of such a process is customer review of billing events (pre-billing and post-billing).

Mandatory

The purpose of the Support Billing Event Related Process process is to support other processes which use or consume billing events. **AM**

Note: the number of processes that use of consume billing events is too large to describe them all here. A selection is presented here as a sample.

[AO] Billing Architecture → Bill Runs → Bill Run Types

Each bill run is configured with a specified bill run type. […]

Table 13 Predefined Bill Run Types

Bill Run Type	Description
[…] Standard QA Bill Run	Performs the standard list of operations, but does not post invoices and statements to the customer's account. Can test or check the invoices before a standard bill run is processed. A bill run of this type does not affect the customer's normal bill run schedule.
[…] Immediate QA Bill	Have the same characteristics and functionality as the **Standard Bill Run**and the **Standard QA Bill Run**, but are run for a single

Run	customer.

[AO] Rating Architecture -> Event Rating (ERT) Process (entire section)

[AO] Rating Architecture -> Event Rating (ERT) Process -> Event Rating Output (ERO) Process (entire section)

[PD] 4.14 Billing Operations Management

[…] Singleview enables the tracing of a normalised event for its entire life through the system, even if reprocessed, to aid in auditing. For example, this functionality can ensure that events initially errored out are eventually rated, or conversely those events not requiring rating are discarded.

Optional

Not used for this process element

Interactions

This process manages report requests from other processes.

4.10.4.4 Level 3: Report Billing Event Records (1.1.1.14.4) – TM Forum Assessor Scores

1.1.1.14.4 - Report Billing Event Records	
Grouping of Implied Tasks	**Score**
Generate Billing Event Report (1.1.1.14.4.1)	*100%*
Investigate Billing Event Related Problem (1.1.1.14.4.2)	*100%*
Support Billing Event Related Process (1.1.1.14.4.3)	*100%*
Total score for Parent Level 3 Process	**300/300 = 100% = 5**

4.10.5 Supporting Evidence References (Works Cited)

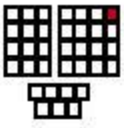
AO	Singleview 8.0 Architecture Overview, documentation for release 8.00.04, d-sv-aov.zip
BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
SOG	System Operations Guide for Singleview Convergent Billing, documentation for release 8.00.04, d-cb-sog.zip
PD	Singleview Version 8.00 PRODUCT DESCRIPTION, Singleview_v8_00_product_description-final.pdf
CCPCG	Customer Care and Product Configuration Guide for Singleview Convergent Billing v8.00, d-cb-ccp.zip
SVRAT	Detailed slides about billing events management and rating, SV Detailed Slides - Rating.pdf

4.10.6 Level 2: Manage Billing Events (1.1.1.14) – Conformance Results

Table 4.10 Level 2: Manage Billing Events (1.1.1.14) – Conformance Results

1.1.1.14 - Manage Billing Events	
Level 3 Processes	**Score**
1.1.1.14.1 - Enrich Billing Events	5
1.1.1.14.2 - Guide Billing Events	5
1.1.1.14.3 - Mediate Billing Events	5
1.1.1.14.4 - Report Billing Event Records	5

4.11 L2: Manage Balances (1.1.1.15)



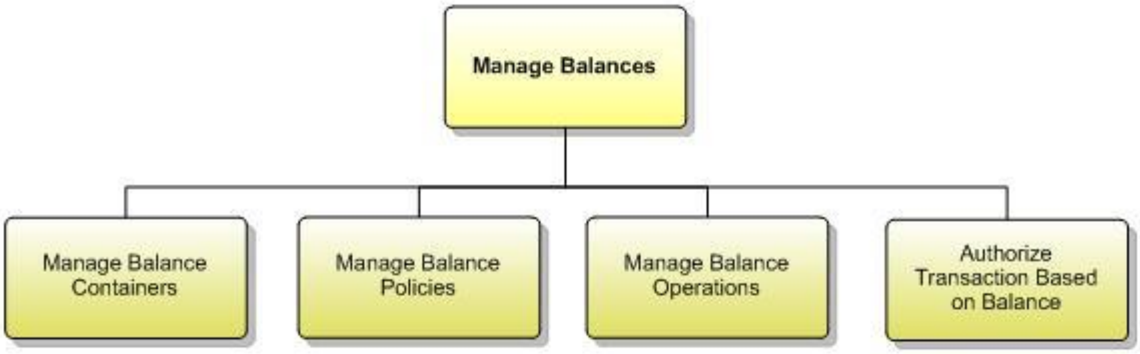


Figure 4.54 Manage Balances decomposition into level 3 processes

Process Identifier: 1.1.1.15

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (ie "instantiated") with other similar process elements for application within a specific organization or domain.

Brief Description

Management of customer and/or subscriber account balances.

Extended Description

This process is responsible for holding, calculating, applying policies and managing functionality/interfaces for the account balances of a customer and/or a subscriber.

Here the values resulting from rating and the application of discounts are applied to a customer's balance. The balance affected by the value may be monetary or other balances such as minutes, points, or tokens. Authorizing service requests based on available balance is optional.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.11.1 Level 3: Manage Balance Policies (1.1.1.15.2) – Mapping Details

Process Identifier: 1.1.1.15.2

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

4.11.1.1 Level 3: Manage Balance Policies (1.1.1.15.2) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

LEVEL 3 PROCESS MAPPING DETAILS 1.1.1.15.2– Manage Balance Policies
Brief Description Executing policies per balance or balance type. **Extended Description** Balance policies are rules that describe how balance affecting events are to be handled. This is done by comparing the value of each event against criteria such as the following: - a minimum allowable balance limit (e.g. balance must remain above zero), - balance expiration dates, - balance thresholds actions and notifications and - roll-over & cyclic policies. **A** **[BOD]eTOM 1.1.1.15 Manage Balances → eTOM 1.1.1.15.3– Manage Balance Policies** Singleview supports a wide range of policies, including: • Balance thresholds can be defined, and if breached, trigger actions. For example, trigger notification by SMS when a balance has exceeded more than X% of the defined credit limit, and automatic top-up initiated when a prepaid balance falls below €Y. • Balances can be expired if they are not consumed within a predefined period (for example, credit added by topping up must be used within X months). • Balances can have cyclical behaviour applied to them (for example, refreshing an allowance of text messages at the end of each month). This cyclical behaviour can include rollover policy. For example, unused allowance from period 1 is carried over into period 2, but is lost if not used by the start of period 3.

[PD] 4.10.1 Examples

Example showing control of pre-paid recurring entitlements

[PD] 5.2.3 Policy Control

In addition to service authorisation, Commerce Engine offers the ability to implement additional policy controls including instantiating network policy updates, particularly where policy rules require complex decision rules, or rating and tracking of balances.

[PD] 5.3.2 Enhanced Prepaid (entire section)

[PD] 5.4.2 Real-time Authorisation

The Commerce Engine enables Singleview to control all financial aspects of a transaction before, during and after the event. It can authorise events before those events occur, check balances throughout the event, and provide a post rating balance in real-time upon completion of the event, to ensure up to the second account balance information.

[PD] 5.4.5 Customer Controlled Budgets

The Commerce Engine can be configured to allow customers to specify service and account specific business rules, including spending limits.

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.11.1.2 Level 3: Manage Balance Policies (1.1.1.15.2) – TM Forum Assessor Scores

1.1.1.15.2 Manage Balance Policies	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.11.2 Level 3: Manage Balance Operations (1.1.1.15.3) – Mapping Details

Process Identifier: 1.1.1.15.3

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

4.11.2.1 Level 3: Manage Balance Operations (1.1.1.15.3) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

LEVEL 3 PROCESS MAPPING DETAILS 1.1.1.15.3– Manage Balance Operations
Brief Description Allow different operations to be performed on the managed balance. **Extended Description** Balance operations processes the charged events using balance policies and then guides the results towards the relevant balance containers. Operations include : - Reserving amounts from any balance for any session, and crediting unused reservations back into the balance, when a session is released. - Updating balances by applying charges to the balance and credit/debit adjustments. - Balance queries. - Transferring amounts from one balance to another. **A** **[BOD] eTOM 1.1.1.15 Manage Balances → eTOM 1.1.1.15.2– Manage Balance Operations** Singleview functionality includes: • Allows multiple concurrent operations on a balance (for example, simultaneous voice call and data browsing can both consume from the same balance in real-time). Multiple subscriptions can also consume from one balance (for example, a free minutes allowance shared by all members of a department). • Supports transfers between balances (for example, transfer of credit from a postpay account to top up a prepaid account). • Supports the concept of reservations. An amount can be reserved from a balance in advance of a transaction, and on completion of the

transaction, the reservation is freed. The exact charge is debited from the balance, and any unused credit returned to the balance.

[PD] 5.1 Reservation and reverse rating (entire section)

[PD] 5.2.4 Concurrent Sessions (entire section)

[PD] 5.2.5 Reservation Release Management (entire section)

[PD] 5.3.2 Enhanced Prepaid (entire section)

[PD] 5.4.2 Real-Time Authorisation (entire section)

[PD] 5.4.3 Concurrent Usage (entire section)

[PD] 5.5.2 Commerce Engine Adapters

13. Figure 24: Commerce Engine Reservation Flow

[CBO] -> Customer Care -> Customer Accounts (entire section)

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.11.2.2 Level 3: Manage Balance Operations (1.1.1.15.3) – TM Forum Assessor Scores

1.1.1.15.3 Manage Balance Operations	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.11.3 Level 3: Manage Balance Containers (1.1.1.15.1) – Mapping Details

Process Identifier: 1.1.1.15.1

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

4.11.3.1 Level 3: Manage Balance Containers (1.1.1.15.1) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

LEVEL 3 PROCESS MAPPING DETAILS 1.1.1.15.1 – Manage Balance Containers
Brief Description Hold and maintain the different balances that a customer and/or a subscriber may have. **Extended Description** This process manages the balance containers assigned to a customer and/or subscriber and is used to keep track of usage events, providing input for decision making processes (such as service or product authorization) by means of the balance policies. The containers include monetary and non-monetary balances (or shared) and are used as prepaid balances (enabling realtime service or product authorization), postpaid balances (in conjunction with an Account-Receivables [AR] application). Examples of non-monetary balances and allowances are: free minutes, WAP-only quota, etc. **A** **[BOD] eTOM 1.1.1.15 Manage Balances -> eTOM 1.1.1.15.1 – Manage Balance Containers** Singleview functionality includes: • Supports monetary (multiple currencies) and non-monetary (for example, text, minutes, KB, and tokens) balances. • Supports the concept of breakdown into billed, unbilled, and total balance. • Makes no distinction at the balance level between prepay and postpay. It is at the accounting rules level that differentiation is applied. **[PD] 4.4.2 Costing Components** 14. Entitlements are an allotment of units such as, time, bandwidth, or money that can be

consumed by eligible events before charges are applied to an account. Entitlements can also be referred to as free units.

Each entitlement normally has an expiry period in which units are available to be consumed. Entitlements can also be used to grant temporary access to specific services.

[PD] 4.10.1 Examples

Entitlements

[PD] 4.17 Receivables Management (entire section)

Explanatory

Reserved for future use.

Mandatory

Reserved for future use.

Optional

Reserved for future use.

Interactions

Reserved for future use.

4.11.3.2 Level 3: Manage Balance Containers (1.1.1.15.1) – TM Forum Assessor Scores

1.1.1.15.1 – Manage Balance Containers	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.11.4 Level 3: Authorize Transaction Based on Balance (1.1.1.15.4) – Mapping Details

Process Identifier: 1.1.1.15.4

Process Context

This process element represents part of the overall enterprise, modeled in business process terms, and can be applied (i.e. "instantiated") with other similar process elements for application within a specific organization or domain.

4.11.4.1 Level 3: Authorize Transaction Based on Balance (1.1.1.15.4) – Mapping Details

NOTE: No decomposition to Level 4 processes, hence mappings provided against the Level 3 process descriptions and implied tasks.

LEVEL 3 PROCESS MAPPING DETAILS **1.1.1.15.4 – Authorize Transaction Based on Balance**

Brief Description Manages authorization of service/ product requests based on available balances (monetary or non-monetary) and policies. **Extended Description** This process may include balance reservation and must be performed online. Subsequent balance updates are not required to be done in real-time. In this context a service is provided by the network, e.g. voice call. Product is digital content delivered via the network, e.g. content such as music, games, etc. **A** **[BOD]eTOM 1.1.1.15.4 – Manage Balances -> eTOM 1.1.1.15.4 - Authorize Transaction Based on Balance** Singleview can be integrated with a service control platform to deliver service authorization based on available balance. **[PD] 5.1 Reservation and reverse rating (entire section)** **[PD] 5.3.2 Enhanced Prepaid (entire section)** **[PD] 5.4.2 Real-Time Authorisation (entire section)** **[PD] 5.5.2 Commerce Engine Adapters** 15. Figure 24: Commerce Engine Reservation Flow

Explanatory Reserved for future use. **Mandatory** Reserved for future use. **Optional** Reserved for future use. **Interactions** Reserved for future use.

4.11.4.2 Level 3: Authorize Transaction Based on Balance (1.1.1.15.4) – TM Forum Assessor Scores

1.1.1.15.4 Authorize Transaction Based on Balance	
Grouping of Implied Tasks	**Score**
No decomposition to Level 4 processes – score awarded for the Level 3 process in its entirety	
Total score for Parent Level 3 Process	**100% = 5**

4.11.5 Supporting Evidence References (Works Cited)

BOD	BSS Baseline Offering for Mobile Operators v1.0, bod.zip
PD	Singleview Version 8.00 PRODUCT DESCRIPTION, Singleview_v8_00_product_description-final.pdf
CBO	Overview for Singleview Convergent Billing v8.00, d-cb-ovr.zip

4.11.6 Level 2: Manage Balances (1.1.1.15) – Conformance Results

Table 4.11 Level 2: Manage Balances (1.1.1.15) – Conformance Results

1.1.1.15 - Manage Balances	
Level 3 Processes	**Score**
1.1.1.15.1 - Manage Balance Containers	5
1.1.1.15.2 - Manage Balance Policies	5
1.1.1.15.3 - Manage Balance Operations	5
1.1.1.15.4 - Authorize Transaction Based on Balance	5

5 Information Framework Assessment Overview

5.1 Mapping Technique Employed

The certification scope defines the list of ABEs (Aggregated Business Entities) to be addressed during the assessment. The entities, association classes and dependent entities for each ABE in scope are also included in the assessment.

The mapping technique used was based on the analysis of the SID model files and addendum specifications for the entities and association classes in scope and their related attributes. The role of each entity, association class or attribute is then interpreted and mapped into the Singleview Accelerate 8 information model related element. This will clearly state how the SID model is supported by Singleview Accelerate 8.

5.2 Information Framework Assessment - ABE Scope

The diagram in Figure 5.1 illustrates the Information Framework Level 1 ABEs (as highlighted in blue) that were presented in scope for the Assessment.

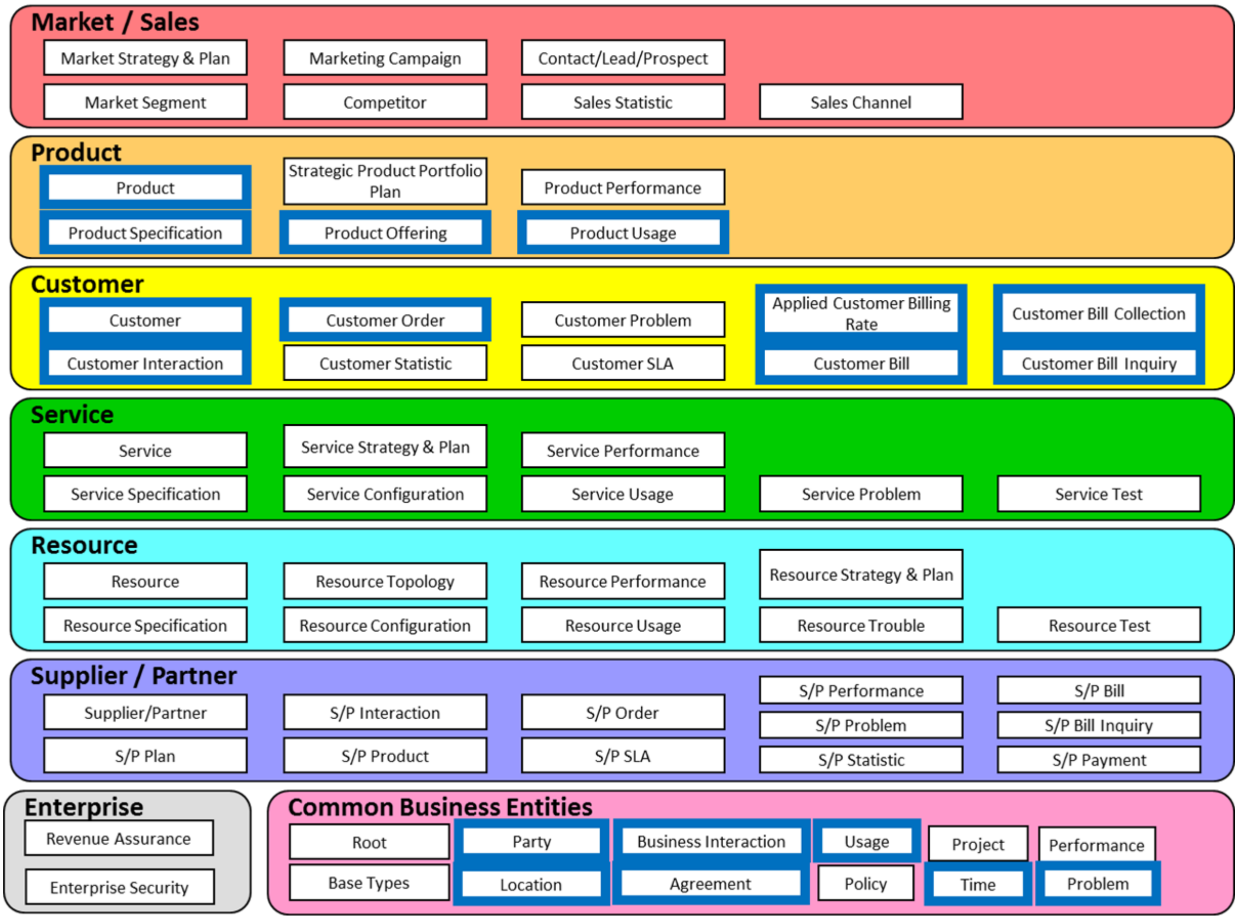


Figure 5.1 Level 1 ABEs in scope for CSG's Singleview Accelerate 8 Assessment

5.3 Product Scope

The diagram in Figure 5.2 represents the mapping of Singleview Accelerate 8 to the Information Framework ABEs in scope for the assessment.

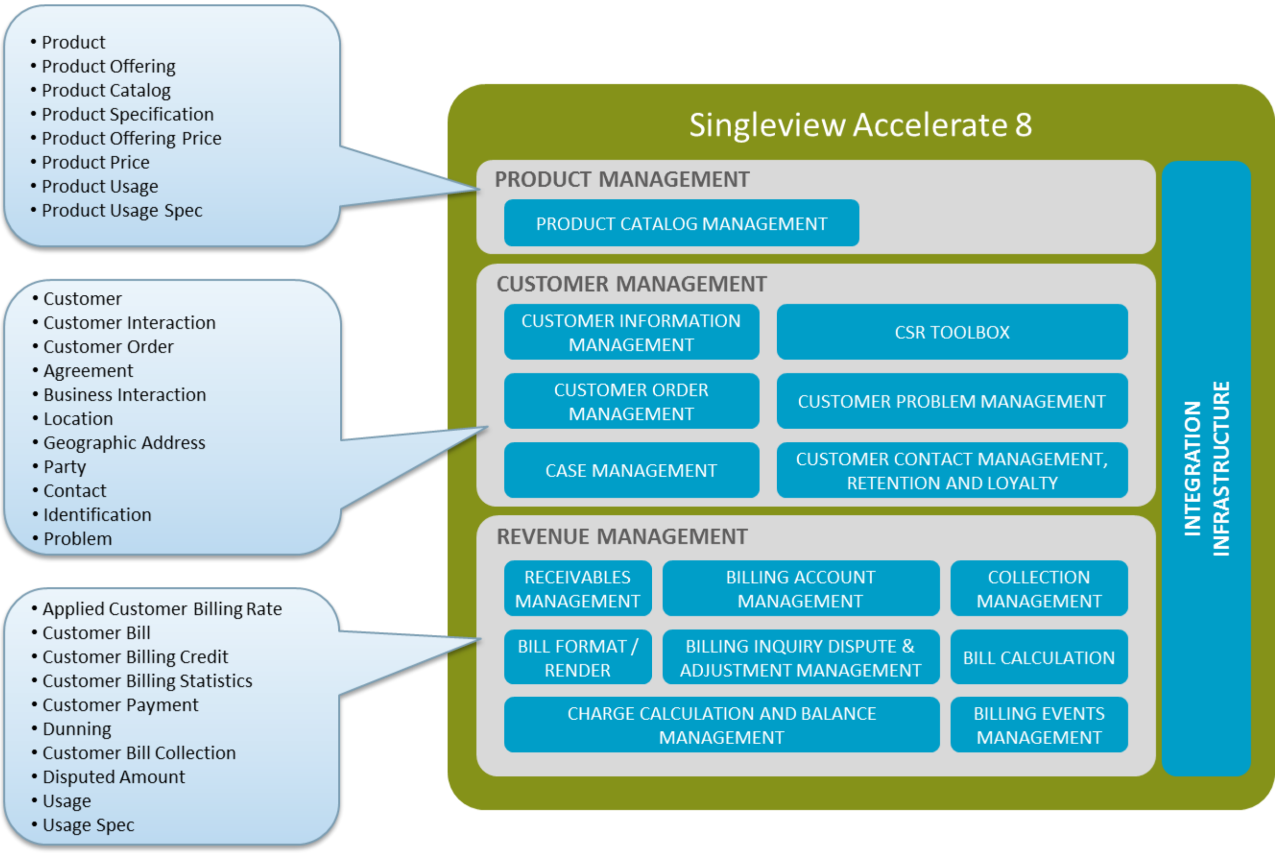


Figure 5.2 Singleview Accelerate 8 Solution Footprint: Product Scope for SID Assessment

6 Frameworx Conformance Result

This section details the Scores awarded to reflect Conformance of CSG's Singleview Accelerate 8 to the Business Process Framework & Information Framework components of Frameworx 12.

6.1 Business Process Framework – Scoring Rules

The conformance scores granted were based on the following TM Forum scoring rules:

Frameworx 12.0 Conformance Certification (Product/Solution/Implementation)		
Business Process Framework (eTOM) - Conformance Level Descriptions (Level 3 processes)		
Process level	**Conformance Score**	**Qualifier**
Level 1	**Not applicable**	**Conformance Assessment shall not be carried out at this process level - hence Confomance Level shall not be awarded at this level.**
Level 2	**Not applicable**	**A conformance level is not awarded to Level 2 processes in Frameworx 12.0 Assessments. The Certification Report shall highlight the coverage of a Level 2 process submitted in scope for an Assessment in terms of number of Level 3 processes submitted for assessment out of the total number defined for the Level 2 process.**
Level 3	**Score is awarded between 3.1 & 5.**	**The Conformance Score is awarded for each Level 3 processes submitted in scope for the Assessment.** **The Conformance Score awarded can be a value between 3.1 & 5 depending on the level of coverage & conformance to the Level 3 process based on the alignment to the level 3 Implied Tasks as decomposed in the Level 4 process definitions.** *Any manual implementation of the process support shall be noted in the Conformance Report and Detailed Results Report.*

Figure 6.1 TM Forum Business Process Framework: Conformance Scoring Rules

6.2 Business Process Framework – Conformance Result Summary

The graphs in this section provide an overview of the conformance levels granted to the Level 3 Processes presented in scope for CSG's Singleview Accelerate 8 Assessment. Each Level 3 process was measured using a Business Process Framework (eTOM) conformance score according to level of Conformance – Full Conformance or Partial Conformance as described in section 6.1 Business Process Framework – Scoring Rules.

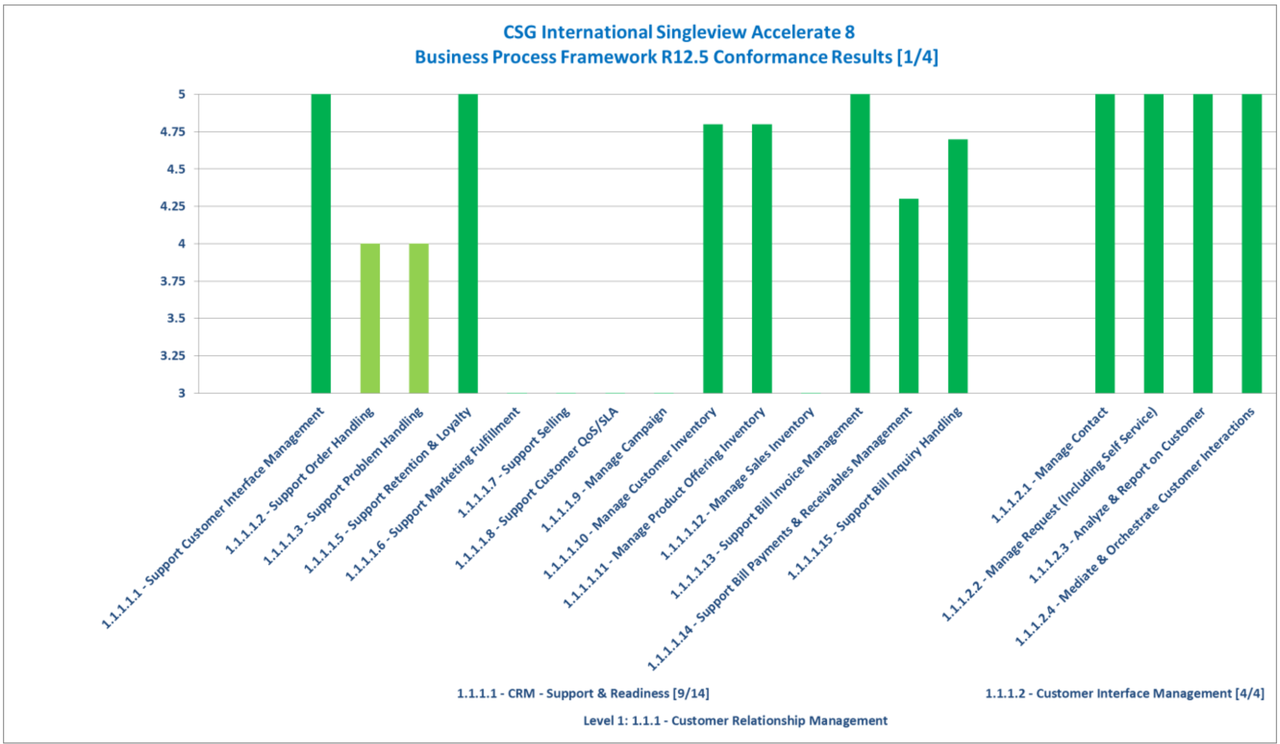


Figure 6.2 Business Process Framework: Conformance Result Summary [1/4]

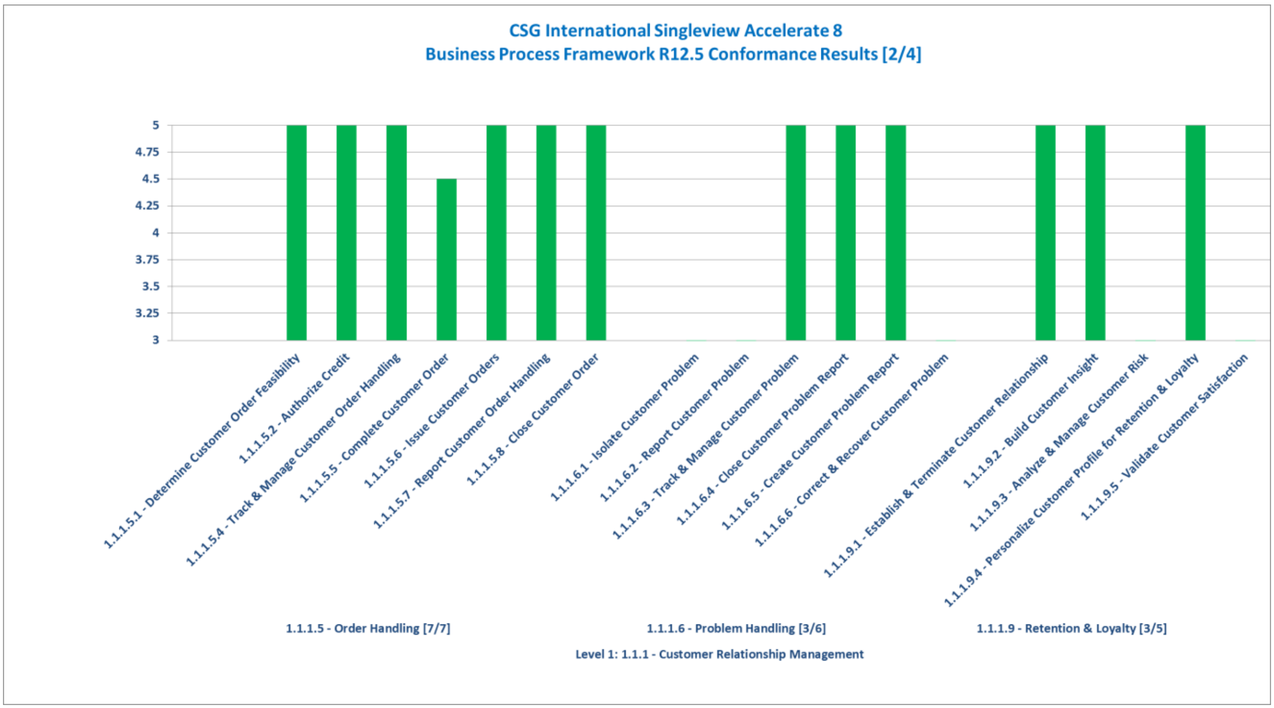


Figure 6.3 Business Process Framework: Conformance Result Summary [2/4]

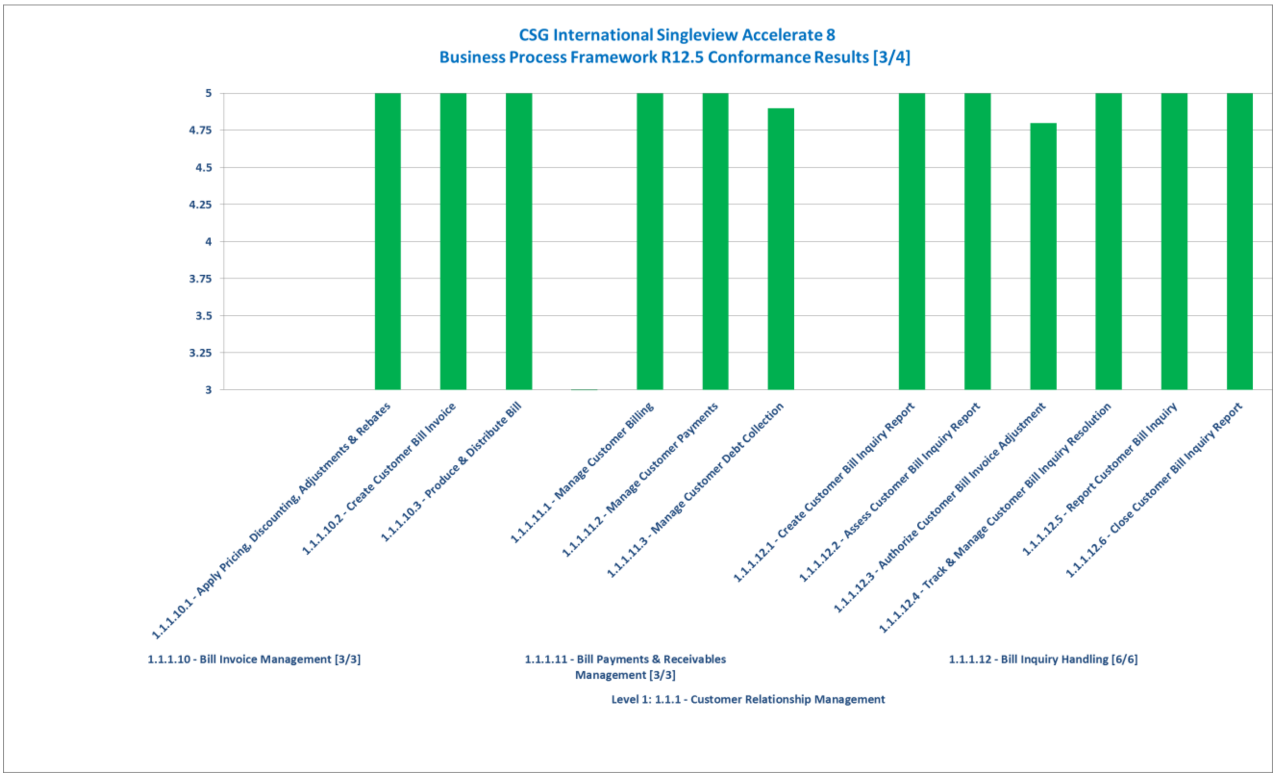


Figure 6.4 Business Process Framework: Conformance Result Summary [3/4]

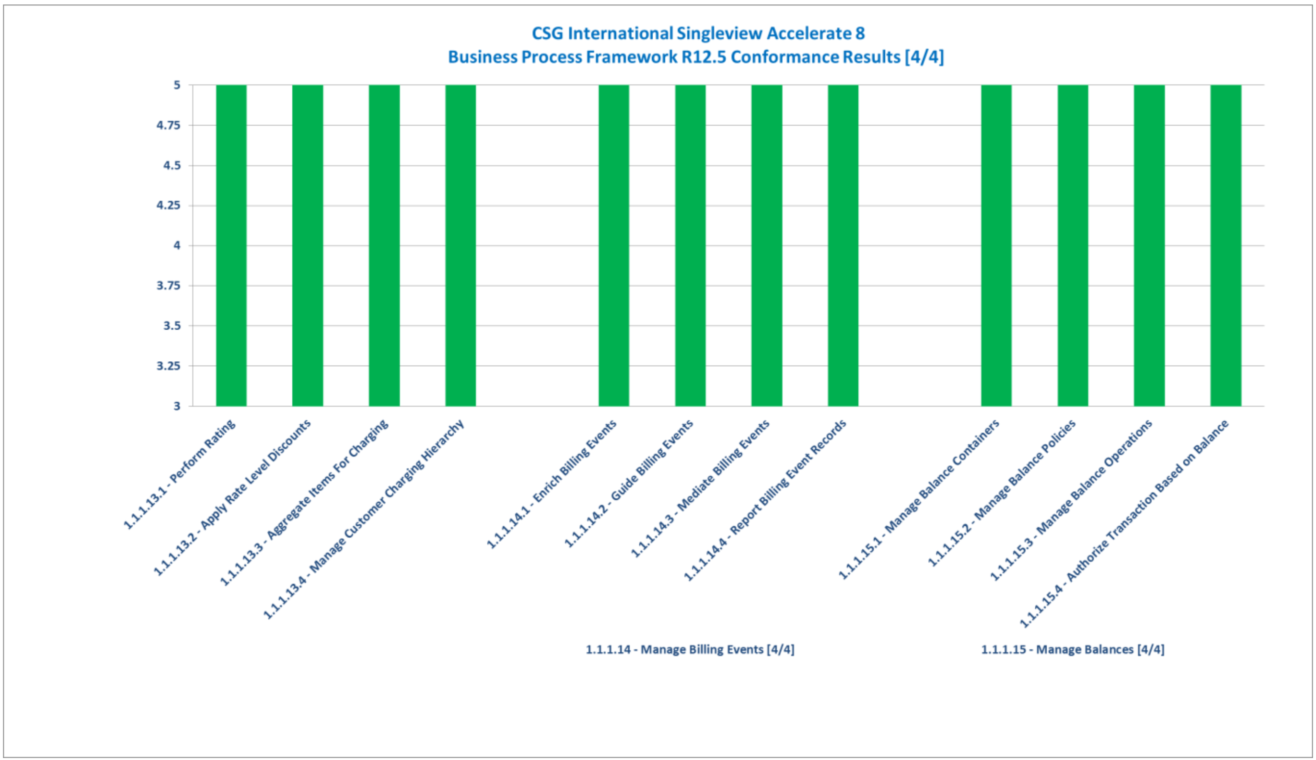


Figure 6.5 Business Process Framework: Conformance Result Summary [4/4]

6.3 Business Process Framework – Detailed Conformance Results

The following table provides a more detailed breakdown of the scores awarded with some additional commentary

Table 6.1 Business Process Framework: Detailed Conformance Results

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
Level 1: 1.1.1 - Customer Relationship Management		
1.1.1.1 - CRM - Support & Readiness	**[9/14]**	
1.1.1.1.1 - Support Customer Interface Management	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.1.2 - Support Order Handling	4	**Partially Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM) but with some deviations. See Mapping Table for more details.
1.1.1.1.3 - Support Problem Handling	4	**Partially Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM) but with some deviations. See Mapping Table for more details.
1.1.1.1.5 - Support Retention & Loyalty	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.1.6 - Support Marketing Fulfillment	*0*	*Not submitted for assessment.*

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
1.1.1.1.7 - Support Selling	*0*	*Not submitted for assessment.*
1.1.1.1.8 - Support Customer QoS/SLA	*0*	*Not submitted for assessment.*
1.1.1.1.9 - Manage Campaign	*0*	*Not submitted for assessment.*
1.1.1.1.10 - Manage Customer Inventory	4.8	**Partially Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM) but with some deviations. See Mapping Table for more details.
1.1.1.1.11 - Manage Product Offering Inventory	4.8	**Partially Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM) but with some deviations. See Mapping Table for more details.
1.1.1.1.12 - Manage Sales Inventory	*0*	*Not submitted for assessment.*
1.1.1.1.13 - Support Bill Invoice Management	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.1.14 - Support Bill Payments & Receivables Management	4.3	**Partially Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM) but with some deviations. See Mapping Table for more details.

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
1.1.1.1.15 - Support Bill Inquiry Handling	4.7	**Partially Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM) but with some deviations. See Mapping Table for more details.
Level 2: 1.1.1.2 - Customer Interface Management	**[4/4]**	
1.1.1.2.1 - Manage Contact	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.2.2 - Manage Request (Including Self Service)	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.2.3 - Analyze & Report on Customer	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.2.4 - Mediate & Orchestrate Customer Interactions	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
Level 2: 1.1.1.5 - Order Handling	**[7/7]**	

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
1.1.1.5.1 - Determine Customer Order Feasibility	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.5.2 - Authorize Credit	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.5.4 - Track & Manage Customer Order Handling	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.5.5 - Complete Customer Order	4.5	**Partially Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM) but with some deviations. See Mapping Table for more details.
1.1.1.5.6 - Issue Customer Orders	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.5.7 - Report Customer Order Handling	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
1.1.1.5.8 - Close Customer Order	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
Level 2: 1.1.1.6 - Problem Handling	**[6/6]**	
1.1.1.6.1 - Isolate Customer Problem	*0*	*Not submitted for assessment.*
1.1.1.6.2 - Report Customer Problem	*0*	*Not submitted for assessment.*
1.1.1.6.3 - Track & Manage Customer Problem	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.6.4 - Close Customer Problem Report	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.6.5 - Create Customer Problem Report	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.6.6 - Correct & Recover Customer Problem	*0*	*Not submitted for assessment.*
Level 2: 1.1.1.9 - Retention & Loyalty	**[3/5]**	

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
1.1.1.9.1 - Establish & Terminate Customer Relationship	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.9.2 - Build Customer Insight	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.9.3 - Analyze & Manage Customer Risk	*0*	*Not submitted for assessment.*
1.1.1.9.4 - Personalize Customer Profile for Retention & Loyalty	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.9.5 - Validate Customer Satisfaction	*0*	*Not submitted for assessment.*
Level 2: 1.1.1.10 - Bill Invoice Management	**[3/3]**	
1.1.1.10.1 - Apply Pricing, Discounting, Adjustments & Rebates	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.10.2 - Create Customer Bill Invoice	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
1.1.1.10.3 - Produce & Distribute Bill	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
Level 2: 1.1.1.11 - Bill Payments & Receivables Management	**[3/3]**	
1.1.1.11.1 - Manage Customer Billing	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.11.2 - Manage Customer Payments	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.11.3 - Manage Customer Debt Collection	4.9	**Partially Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM) but with some deviations. See Mapping Table for more details.
Level 2: 1.1.1.12 - Bill Inquiry Handling	**[6/6]**	
1.1.1.12.1 - Create Customer Bill Inquiry Report	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
1.1.1.12.2 - Assess Customer Bill Inquiry Report	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.12.3 - Authorize Customer Bill Invoice Adjustment	4.8	**Partially Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM) but with some deviations. See Mapping Table for more details.
1.1.1.12.4 - Track & Manage Customer Bill Inquiry Resolution	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.12.5 - Report Customer Bill Inquiry	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.12.6 - Close Customer Bill Inquiry Report	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
Level 2: 1.1.1.13 - Charging	**[4/4]**	
1.1.1.13.1 - Perform Rating	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
		(eTOM).
1.1.1.13.2 - Apply Rate Level Discounts	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.13.3 - Aggregate Items For Charging	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.13.4 - Manage Customer Charging Hierarchy	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
Level 2: 1.1.1.14 - Manage Billing Events	**[4/4]**	
1.1.1.14.1 - Enrich Billing Events	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.14.2 - Guide Billing Events	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).

CSG International Singleview Accelerate 8 Business Process Framework (eTOM) Release 12.0 Conformance		
L1 / L2 / L3 Process	**L3 Process Score [L2 Coverage]**	**Comments**
1.1.1.14.3 - Mediate Billing Events	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.14.4 - Report Billing Event Records	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
Level 2: 1.1.1.15 -	**[4/4]**	
1.1.1.15.1 - Manage Balance Containers	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.15.2 - Manage Balance Policies	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.15.3 - Manage Balance Operations	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).
1.1.1.15.4 - Authorize Transaction Based on Balance	5	**Fully Conformant** Supporting evidence and documentation submitted for the assessment of this level 3 process fulfilled alignment criteria with the standard Business Process Framework (eTOM).

6.4 Information Framework – Scoring Rules

The conformance scores granted were based on the following TM Forum scoring rules:

Frameworx 12.0 Conformance Certification (Product/Solution/Implementation)	
Information Framework (SID) - Conformance Score Descriptions	
Conformance Score	**Qualifier**
Non Conformance [Score = 1]	The content of the model is compatible with a subset of the Information Framework (SID) ABEs that define its domain coverage. This provides two interacting components/solutions with a common vocabulary and model structure. The subset represents the scope of the model, expressed in Information Framework (SID) domains
Non Conformance [Score = 2]	The model has passed level 1 conformance and the content of the ABE, part of the domain coverage and defined in the model, contains the ABE's core business entity or entities. A core business entity is an entity upon which other entities within the ABE are dependent. e.g. Service in the Service ABE. A core entity is also an entity whose
Very Low Conformance [2.0 < Score <= 3.0]	The model has passed level 2 conformance and *<u>a percentage of the required attributes of the ABE's core entity or entities</u> are defined in the model.
Low Conformance [3.0 < Score <= 4.0]	The model has passed level 3 conformance and <u>*a percentage of the dependent entities</u> within the ABE are defined in the model. A dependent entity is one whose instances are dependent on an instance of a core entity. For example, a ServiceCharacteristic instance within the Service ABE is dependent upon an instance of the Service entity.
Medium Conformance [4.0 < Score <= 5.0]	The model has passed level 4 conformance and <u>*a percentage of the required attributes</u> of the ABE's dependent entities are defined in the model.
High Conformance [5.0 < Score <= 6.0]	The model has passed level 5 conformance and <u>*a percentage of all attributes</u> of the ABE's core entities are defined in the model.
Very High Conformance [6.0 < Score < 7.0]	The model has passed level 6 conformance and <u>*a percentage of all attributes</u> of the ABE's dependent entities are defined in the model.
Full Conformance [Score = 7.0]	The model has achieved Level 7 conformance (Full Conformance) and <u>all</u> attributes of the ABE's core & dependent entities are defined in the model.
** For each level, according to what is required, a value is calculated based on the percentage of entities/attributes supported - as appropriate. This will result in a decimal figure (rounded to one decimal place).*	

Figure 6.6 TM Forum Information Framework: Conformance Scoring Rules

<u>Notes:</u>

*A **core business entity** is an entity upon which other entities within the ABE are dependent. For example, Service in the Service ABE. A model should strive to attain as high a level of Information Framework (SID) conformance as possible. A core entity is also an entity whose absence in the ABE would make the ABE incomplete.*

*A **dependent entity** is one whose instances are dependent on an instance of a core entity. For example, a ServiceCharacteristic instance within the Service ABE is dependent upon an instance of the Service entity.*

6.5 Information Framework – Conformance Result Summary

The following graphs provide an overview of the conformance levels granted to the ABEs presented in scope for CSG's Singleview Accelerate 8 Information Framework Assessment. Each ABE was measured using an Information Framework (SID) conformance scale of 1–7 as described in section 6.4.

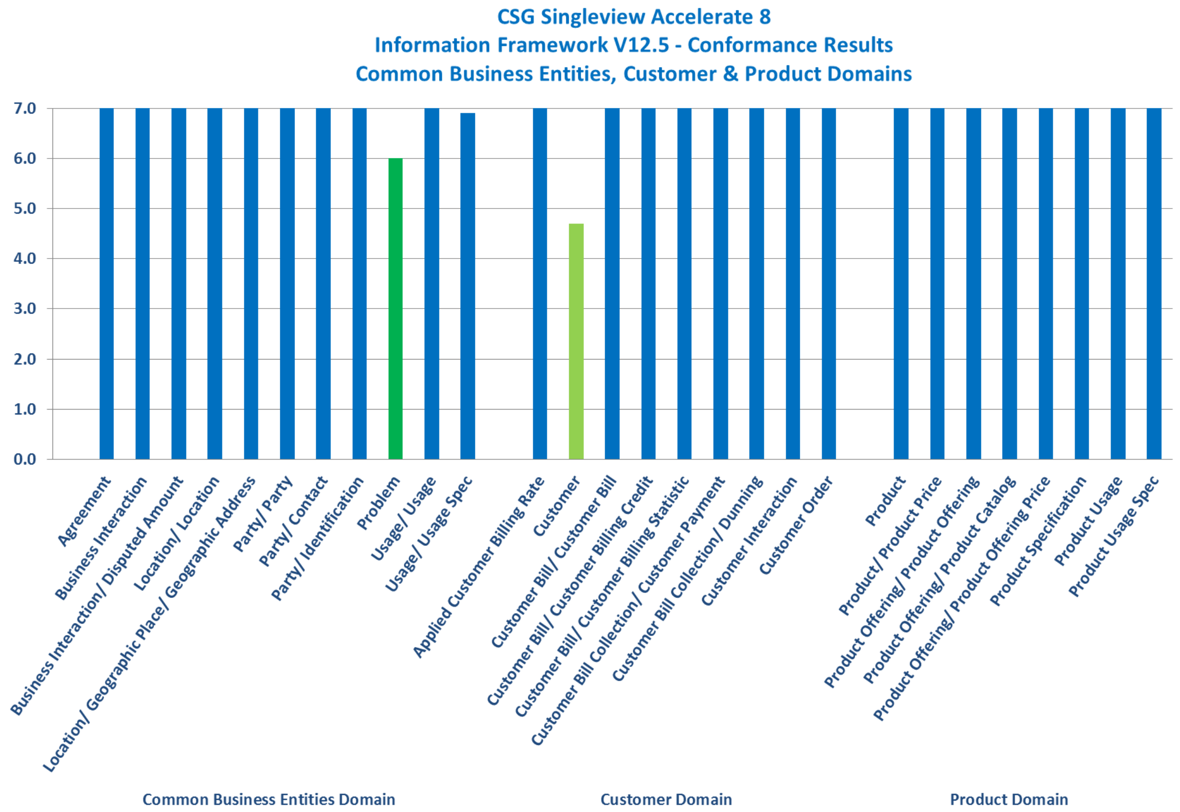


Figure 6.7 Information Framework: Conformance Result Summary CBE, Customer & Product

6.6 Information Framework – Detailed Conformance Result

The following table provides a more detailed breakdown of the scores awarded with some additional commentary.

Table 6.2 Information Framework: Detailed Conformance Result

CSG International Singleview Accelerate 8 Information Framework (SID) R12.5 - Conformance Scores		
ABE	**Conformance Score**	**Comment**
Common Business Entities Domain		
Agreement	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Business Interaction	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Business Interaction/ Disputed Amount	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Location/ Location	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Location/ Geographic Place/ Geographic Address	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Party/ Party	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Party/ Contact	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.

CSG International Singleview Accelerate 8 Information Framework (SID) R12.5 - Conformance Scores		
ABE	**Conformance Score**	**Comment**
Party/ Identification	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Problem	**6.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all optional attributes of the core entity.
Usage/ Usage	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Usage/ Usage Spec	**6.9**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all optional attributes of the core entity, 90% of optional attributes of dependent entities supported.
Customer Domain		
Applied Customer Billing Rate	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Customer	**4.7**	Core entity, required attributes, dependent entities, 70% of required attributes of dependent entities supported.
Customer Bill/ Customer Bill	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Customer Bill/ Customer Billing Credit	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.

CSG International Singleview Accelerate 8 Information Framework (SID) R12.5 - Conformance Scores		
ABE	**Conformance Score**	**Comment**
Customer Bill/ Customer Billing Statistic	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Customer Bill Collection/ Customer Payment	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Customer Bill Collection/ Dunning	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Customer Interaction	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Customer Order	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Product Domain		
Product	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Product/ Product Price	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Product Offering/ Product Offering	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.

CSG International Singleview Accelerate 8 Information Framework (SID) R12.5 - Conformance Scores		
ABE	**Conformance Score**	**Comment**
Product Offering/ Product Catalog	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Product Offering/ Product Offering Price	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Product Specification	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Product Usage	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.
Product Usage Spec	**7.0**	Core entity, required attributes, dependent entities, required attributes of dependent entities, all attributes of the core entity, all attributes of dependent entities supported.