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Comverse ONE 3.7.7

Level 2 Process: 1.1.1.1 CRM – Support & Readiness, part 2

Version 1

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Self-Assessment Process Mapping Report

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About Comverse

Comverse is the world's leading provider of software and systems enabling value-added services for voice, messaging, mobile Internet and mobile advertising; converged billing and active customer management; and IP communications. Comverse's extensive customer base spans more than 125 countries and covers over 450 communication service providers serving more than two billion subscribers. The company's innovative product portfolio enables communication service providers to unleash the value of the network for their customers by making their networks smarter.

For more information on our products and services, visit our website at: www.comverse.com or contact us at: information@comverse.com

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1 L2: 1.1.1.1 CRM Support & Readiness

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

Note: mappings for L3 1.1.1.1.10 Manage Customer Inventory were previously provided earlier in this review cycle. This document includes the remainder of the in-scope L3 eTOM processes for the 2015 recertification: 1.1.1.1.1 Support Customer Interface Management, 1.1.1.1.9 - Manage Campaign, and 1.1.1.1.11 - Manage Product Offering Inventory.

1.1 L3: 1.1.1.1.1 Support Customer Interface Management

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.

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.

1.1.1 L4: 1.1.1.1.1.1 Ensure Customer Interface Capability – Mapping Details

Process Identifier: 1.1.1.1.1.1

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.

LEVEL 4 PROCESS MAPPING DETAILS

1.1.1.1.1.1 Ensure Customer Interface 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 includes localization support and personalization support, and itcould be in updating agent scripts, IVR announcements, Web pages, etc. Customer Interface Support processes keep up to date all information concerning customers. [AM]

All the information related to a customer is stored in the customer model, as described in the mappings for 1.1.1.1.1.10 and its children.

The Comverse ONE Customer Care GUIs (e.g. CSR Portal, Customer Center, Customer Self-Service) access the customer model through a single Application Programmer Interface (S-API). S-API and the GUIs that use it also expose the ability to modify the customer model (again, see the mappings for 1.1.1.1.1.10 and its children) which includes modifying all the above information.

Scripts for handling customer interactions can be defined via Case Handling Scripts (see **Error! eference source not found.**).

Unusual requests based on temporary situations often have standardized solutions. For example, standardized rates for offers, bundles and services may need to be overridden to reflect special circumstances; the Comverse ONE S-API and customer GUIs expose this ability both through Individual Case Basis override rates and through Promotion Plans (for example, a CSR might issue a “10% off all charges for offer X” contract to a subscriber to reflect a negotiated lower rate). As another example, unhappy customers may be mollified through the issuing of cycle-independent free usage contracts (e.g. “100 free minutes”) or currency rebates. These capabilities are exposed through S-API and customer GUIs, and much of their operation is automated.

The customer model includes all contact information for contacts associated with the customer, all accounts and subscriptions associated with the customer, all services and product offerings and bundles and contracts associated with those accounts and subscriptions, and notes about previous interactions with the customer. This is similarly exposed through S-API and customer GUIs. The CSR Portal GUI in particular is the primary tool for managing contact with a customer, and provides the

user with access to all the information and capabilities required to complete such contacts effectively and (where feasible) automatically.

For cases where CSRs must be allocated to specific contacts or banks of contacts, either to handle anticipated volume of contact requests in a timely manner or to ensure an ongoing relationship with a particular set of representatives (for example, if a customer service center is providing support to multiple distinct sets of customers operating under different brands), customer segmentation can be implemented and the appropriate CSR user groups assigned to the appropriate customer segments.

Standardized solutions like the above reduce the situations where actual changes to the customer interfaces are necessary. Where such changes *are* necessary, Comverse ONE supports several approaches depending on the scope and nature of the desired change:

- Configuration of the interface and/or product offerings
  For example, customer segmentation as described earlier can be defined through Comverse ONE configuration without any recoding or. Other aspects of interface behavior, such as the availability of ICB override rates and Promotion Plans, the language in which the interface displays, geographic localization features such as currencies and customer notification text and language support and offer filtering based on geographic service availability and compliance with various local regulations, and the information captured and exposed for contacts and accounts and subscribers, can similarly be controlled by the service provider through configuration without the need for any Comverse involvement at all. The Comverse ONE *System Parameters Guide* describes the hundreds of user-specifiable system parameters that configure the system, and the *Product Catalog User Guide* describes how to define configurable elements of the Comverse ONE system.
- Customization of the interfaces
  Comverse personnel can make modifications to our GUIs and the system elements on which they rely (e.g. S-API and the database) to support localization and personalization. This process involves a Statement of Work or Integration Points Analysis that describes the scope of desired changes, a Requirements Specification that details those changes, and a contract governing payment and delivery of the work.
- Third-party interfaces
  The same S-API interface that Comverse ONE GUIs use to access the data and services described above is available to custom and third-party tools as well, allowing service providers or integrators to develop their own tools to expose that data and services without Comverse involvement.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.1.2 L4: 1.1.1.1.1.2 Undertake Customer Contacts Trend Analysis – Mapping Details

Process Identifier: 1.1.1.1.1.2

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.

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]

All the information related to a customer is stored in the customer model, as described in the mappings for 1.1.1.1.1.10 and its children. This includes information about residential vs business customers, detailed service usage history, what offers and bundles were purchased at what time, etc.

In addition, every time a CSR accesses a customer account through Comverse ONE tools an Interaction is stored in the database capturing information about the CSR/customer interaction, including the direction, method of contact, any events that occurred during the session (such as the creation of a Case), begin and end time, etc. These Interactions form the basis from which trend analysis can be undertaken – for example, regular reporting on the frequency and duration of Interactions and the CSRs involved can provide information about resource utilization and the rate

of change of that utilization, and reporting on the Cases associated with those interactions and the close status of those Cases can provide information about the outcomes of customer contacts.

Also, the Case Handling Script created for particular kinds of customer interactions can specify notifications to be issued, data to be stored and updated, and more generally tracking and alarming behavior that can support not only periodic trend analysis but timely responses to exceptions.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.1.3 L3: 1.1.1.1.1 - Support Customer Interface Management – TM Forum Assessor Scores

<to be provided by TM Forum on closeout of the assessment>

1.2 L3: 1.1.1.1.9 - Manage Campaign

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

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.

1.2.1 L4: 1.1.1.1.9.1 Ensure Campaign Support– Mapping Details

Process Identifier: 1.1.1.1.9.1

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.

LEVEL 4 PROCESS MAPPING DETAILS 1.1.1.1.9.1 Ensure Campaign Support
Brief Description Ensure that Marketing Fulfillment Response is staffed, trained and equipped appropriately to support the specific campaign, whether direct mail, TV ad, etc [AM] For some campaigns, no staff is required – the campaign is entirely automatic. For example: • Marketing messages can be automatically distributed along with customer invoices. This is performed as part of defining relationships with print-shops and invoice display (see **Error! eference source not found.**) through the Product Catalog GUI and Invoice Designer. When Comverse ONE generates an invoice for a customer, it evaluates that customer to determine what messages are appropriate (based on location, jurisdiction, customer type, etc.) and includes those messages. Individual messages can also be defined for individual customers. • Similarly, marketing messages can be implemented through bill inserts. This works like invoice messages above, except an insert code appropriate for the customer is automatically selected and included on the bill and the code guides insert inclusion by the printshop. • Marketing messages can be incorporated into notifications and automatically delivered to subscribers alongside those notifications. For example, when a prepaid balance is close to

expiration, a “balance low” notification might also include prompts to upgrade to a higher-capacity Promotion Plan that includes more free usage.

- Marketing messages can be incorporated into Case Handling scripts (see **Error! Reference ource not found.**) and Outbound Communications Templates (see **Error! Reference source not found.**) – for example, upsell scripts. (In practice this might require some training as well; see below.)
- Marketing messages can be incorporated into collections activity. (see **Error! Reference ource not found.**) This is most common for customers who pay their bills, but are routinely late in paying them. Comverse ONE allows for definition of custom collections events for customers in this category that encourages changes in default payment methods and associated offer swaps.

For other campaigns, staff hiring, equipping, and training of campaign staff might be necessary and is performed by the service provider and entirely outside the scope of Comverse ONE, but these operations are nevertheless supported by Comverse ONE in several ways. See **Error! Reference ource not found.** and **Error! Reference source not found.** for more information.

For clarity, note that marketing campaigns that don’t involve direct contact with customers (for example, television or newspaper ads) don’t involve Comverse ONE at all.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.2.2 L4: 1.1.1.1.9.2 Undertake Campaign Trend Analysis – Mapping Details

Process Identifier: 1.1.1.1.9.2

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.

LEVEL 4 PROCESS MAPPING DETAILS 1.1.1.1.9.2 Undertake Campaign Trend Analysis
Brief Description Monitor and undertake trend analysis on the effectiveness of the campaigns [AM] The Plan Campaign process (see **Error! Reference source not found.**) includes providing trend nalysis reports and data to sales managers. Trend Analysis graphical reports can include account/subscriber information, associated Offers , Charges, Payments, Invoices, Usage Events, Leads, Cases , and Responses to earlier Campaigns. They can inform the sales manager of the effectiveness of different channels (e.g. mail, email, passive campaign or other media) for a single Campaign and the effectiveness of different Campaigns in terms of changes in product usage, sales, or revenue among affected customer segments. Comverse ONE also allows users to define and execute queries to view more specific trends. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Reserved for future use. **Optional** Not used for this process element **Interactions** Not used for this process element

1.2.3 L4: 1.1.1.1.9.3 Modify Campaign – Mapping Details

Process Identifier: 1.1.1.1.9.3

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.

LEVEL 4 PROCESS MAPPING DETAILS

1.1.1.1.9.3 Modify Campaign

Brief Description

Modify campaign to improve on the effectiveness [AM]

The process for modifying a campaign is effectively the same as that for creating a campaign in the first place, as described for 1.1.1.1.9.1 Ensure Campaign Support above. See **Error! Reference source ot found.** for more information on campaign planning.

Configuration changes support point-in-time configuration, so modifications can be defined ahead of time and switch over automatically, and the active date ranges for different configuration sets remain in the database to support proper handling of late-arriving events.

Choosing the actual modifications to be implemented is outside the scope of Comverse ONE, of course, but the data provided on current campaigns (as described for 1.1.1.1.9.2 Undertake Campaign Trend Analysis) is of course available to support that process.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.2.4 L4: 1.1.1.1.9.4 Report Campaign Effectiveness – Mapping Details

Process Identifier: 1.1.1.1.9.4

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.

LEVEL 4 PROCESS MAPPING DETAILS 1.1.1.1.9.4 Report Campaign Effectiveness
Brief Description Report results on campaign effectiveness. [AM] The Plan Campaign process (see **Error! Reference source not found.**) includes providing analysis eports and data to sales managers. The Campaign management system collects various transaction data from a variety of systems which can typically include Account/Subscriber information, their Offering , Charges, payments, Invoices, Usages, Leads, Cases , Responses to campaigns etc. The Plan Campaign process allows Sales Manager or marketing managers to generate reports based on these data or execute queries to view trends to satisfy the campaign needs. **Extended Description** Not used for this process element **Explanatory** Not used for this process element **Mandatory** Reserved for future use. **Optional** Not used for this process element **Interactions** Not used for this process element

1.2.5 L3: 1.1.1.1.9 - Manage Campaign – TM Forum Assessor Scores

<to be provided by TM Forum on closeout of the assessment>

1.3 L3: 1.1.1.1.11 Manage Product Offering Inventory

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 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.

Managing product offering inventory includes product creation, modification, update, deletion to the product offering inventory.

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.

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1.3.1 L4: 1.1.1.1.11.1 Identify Relevant Product Offering Inventory Information – Mapping Details

Process Identifier: 1.1.1.1.11.1

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.

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] Client-required product offering attributes are mapped to standard attributes of the core Comverse ONE Config data model via the Product Catalog GUI, in particular to Offer attributes and Offer hierarchy entities such as Bundles, Promotion Plans, Recurring and Non-Recurring Charge Terms, Usage Rates, Adjustments, Tax Parameters, Booking Parameters, as described in the Comverse ONE user documentation. These Offers and their associated hierarchy configurations are then associated to Dealers and Resellers through which they can be assigned to Customers. See *API Guide* Table of Contents (provided along with part 1 of this L2 mapping document) for an overview of relevant information and data objects provided in the Comverse ONE API documentation. Where no such mapping is possible, Comverse personnel can make modifications to the Product Catalog GUI and the system elements on which it relies (e.g. S-API and the database) to support additional customization. (This is rarely necessary.) This process involves a Statement of Work or Integration Points Analysis that describes the scope of desired changes, a Requirements Specification that details those changes, and a contract governing payment and delivery of the work. See also the following related business processes: • **Error! Reference source not found.** • **Error! Reference source not found.** • **Error! Reference source not found.** • **Error! Reference source not found.** • **Error! Reference source not found.**

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Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.3.2 L4: 1.1.1.1.11.2 Maintain Product Offering Inventory facilities – Mapping Details

Process Identifier: 1.1.1.1.11.2

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.

LEVEL 4 PROCESS MAPPING DETAILS 1.1.1.1.11.2 Maintain Product Offering Inventory facilities
Brief Description

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

The actual housing of physical product inventory (such as handsets and set-top boxes) is outside the scope of Comverse ONE; service providers and resellers must account for this on their own.

However, Comverse ONE *does* provide inventory tracking services to keep track of what physical inventory is associated with which resellers and to track the identifiers associated with that inventory. See the 1.1.1.1.11.3 L4 mapping below for details.

For the most part, however, the Product Offerings defined by service providers through Comverse ONE are not physical products but telecommunications and information services, for which physical inventory is not generally relevant (beyond a handset or set-top box or computer to serve as a network delivery point for the subscriber's services). The necessary facilities are information-based, not physical: the Product Catalog database server(s), S-API, and user interface.

See **Error! Reference source not found.** for more details about how these facilities are established nd maintained.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.3.3 L4: 1.1.1.1.11.3 Manage Product Offering Inventory Capture – Mapping Details

Process Identifier: 1.1.1.1.11.3

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.

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]

The telecommunications and information services that make up the bulk of the product offerings managed through Comverse ONE are configured and defined through the Product Catalog interface. The Product Catalog data model and the default flows implemented through the Product Catalog GUI in effect define the processes whereby relevant information (see 1.1.1.1.11.1 Identify Relevant Product Offering Inventory Information mapping above) is stored in the Product Catalog database, in the form of Bundles, Promotion Plans, Recurring and Non-Recurring Charge Terms, Usage Rates, Adjustments, Tax Parameters, Booking Parameters, and other data model elements.

In addition, as noted in the 1.1.1.1.11.2 Maintain Product Offering Inventory facilities mapping, although physical inventory is not the primary component of most of the product offerings managed through Comverse ONE by service providers, Comverse ONE does provide inventory tracking services for physical product inventory such as handsets and set-top boxes and similar units. The processes that manage this inventory and capture the associated information are configured and defined through the Product Catalog interface as well. For example, ranges of handset identifiers (e.g. SIM card IDs) can be provisioned to specific resellers, allowing the reseller to subsequently resell those IDs. When a service is resold to an end-user the inventory ID is automatically tracked along with the service/subscription details.

In many cases (for both information services and physical inventory), these processes are extended by regular bulk data transfers, where manual data entry for large data sets would otherwise be onerous. These data transfer processes are managed by the Comverse ONE Bulk Load tool. See **Error! Reference source not found.** for more information.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.3.4 L4: 1.1.1.1.11.4 Control Product Offering Inventory Access – Mapping Details

Process Identifier: 1.1.1.1.11.4

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

1.1.1.1.11.4 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]

The Comverse ONE Security Server manages the registration and access control processes that enable users (including the user IDs associated with automatic processes) to access all Comverse ONE GUI operations, including but not limited to those associated with creating, modifying, updating, and deleting product offering data in the Product Catalog database.

See **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference rce not found.**, **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.**, and **Error! Reference source not found.** for more information. See the 1.1.1.1.10.4 Control Customer Inventory Access mapping for a more complete list.

Downloading product data is not managed as a separate access permission; if a user is authorized to access data in the first place it is assumed the user can also copy that data if desired. (Indeed, as a

practical matter it is difficult to prevent the latter while permitting the former, though admittedly it doesn't stop some systems from trying.)

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.3.5 L4: 1.1.1.1.11.5 Ensure Product Offering Inventory Data Quality – Mapping Details

Process Identifier: 1.1.1.1.11.5

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 1.1.1.1.11.5 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]

The product offering data model in which the Comverse ONE product offering inventory resides is instantiated in an Oracle database system (Comverse ONE Product Catalog database) which maintains records of all product offerings and all the configuration details associated with those offerings, including the parameters that specify how each product is taxed, booked, invoiced, formatted, etc., as well as the serviceability and related constraints that govern what subscribers are permitted to sign up for the product through Order Handling. All of this information is exposed through the single API and the Product Catalog GUI.

The association between customers and purchased product offering instances is stored in the Comverse ONE Customer database, along with other customer-specific information, which includes customer-specific overrides of the defined product offering attributes. For example, if a CSR defines an individual-case-basis override of the recurring charge rate defined for a particular Offer, the base rate is maintained in the Product Catalog database and the override rate is maintained in the Customer database.

These records are exposed via a common API.

Automatic data-replication tools and database integrity checks ensure that the data in these two databases remain synchronized, such that the product IDs used in product instances in the Customer database match up to the product ID definitions stored in the Product Catalog database. Additional attributes are also checked to ensure integrity. ID values are not reused, even when product offerings are retired, to avoid collisions. Database level checks ensure that new product instances cannot be created once the corresponding product offering has been retired.

In addition, the billing, rating, and customer care tools that comprise Comverse ONE are responsible for confirming the validity of underlying data when performing operations such as generating invoices, processing usage, booking financial transactions, handling payments, calculating taxes, and so forth.

In all of these cases, any discrepancy in the underlying data results in an error (either a database replication error, a database trigger error, or an application-later error). Critical errors (for example, those that prevent invoice generation or usage authorization) generate notifications to operations personnel; all errors are logged and available for review.

All of the above audits are automatic. In addition, the underlying data is available for review via S-API, supporting any custom data audits a service provider may wish to perform, be they automatic or manual.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.3.6 L4: 1.1.1.1.11.6 Track Product Offering Inventory Usage – Mapping Details

Process Identifier: 1.1.1.1.11.6

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

1.1.1.1.11.6 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[M]

The product data model in which the Comverse ONE Product Offering Inventory resides is instantiated in an Oracle database and exposed via a common API. In practice, the size of a deployment's product inventory and the complexity of associated rating and handling rules is the most significant source of variation among deployments in terms of customer inventory usage costs, and is consequently the most significant variable factor in determining costs. This includes costs associated with storage and backup of product offering and product instance data, with processing associated transaction records, and with maintaining the requisite database connections. Other contributing factors such as the structural implications of system architecture, storage of associated

configuration data, support for nonfunctional requirements such as disaster recovery or high availability, etc., are also significant but tend not to vary as widely between deployments.

Since the products managed through Comverse ONE are primarily information services, the costs associated with accessing the product offering inventory itself are typically simply those associated with hosting the database and associated network. This is estimated based on various service provider attributes using a sizing profile estimation tool (see example provided with part 1 of this L2 mapping).

Non-variable or low-variability parameters are captured by formulas within the Profile, and as the variable parameters that contribute to the required sizing change, or as normal system administration processes determine that available space or available connections are becoming an operationally constraining factor, the Sizing Profile is adjusted to reflect the new parameters and sizing recommendations are revised accordingly. The Sizing Profile and similar tools also take these parameters into consideration to recommend staffing levels based on expected customer base, expected costs based on platform properties (e.g., high-availability platforms are typically significantly more expensive than other platforms, but are required for certain operations such as call authorization), and other related factors. These recommendations then contribute to a manual cost-determination process.

Tracking, monitoring, and reporting on these costs is essentially a matter of standard database administration: paying for hardware maintenance and DBA time to perform routine database-server services. (As well as paying for the hardware itself, of course, and periodic upgrades.)

More important than the financial costs are potential performance costs – avoiding database contention, for example, and keeping data access times to a minimum. Here again, the tracking, monitoring, and reporting on these costs is standard database administration -- making sure that database connections and the database server CPU are not overloaded, for example, and that obsolete data is routinely archived and purged. (This is done automatically by an Archiver process in Comverse ONE.)

In addition to the above, some product offerings may also involve network costs. The tracking, monitoring, and reporting on these costs is similarly a process of standard network administration.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element

1.3.7 L4: 1.1.1.1.11.7 Identify Product Offering Inventory Shortcomings – Mapping Details

Process Identifier: 1.1.1.1.11.7

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

1.1.1.1.11.7 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. [M]

Where possible, client-required Product Offering attributes are mapped to standard attributes of the core Comverse ONE Product Offering data model. See mapping details for 1.1.1.1.11.1 Identify Relevant Product Offering Inventory Information and 1.1.1.1.11.3 Manage Product Offering Inventory Capture for additional information.

It's perhaps also worth noting that the single API can be extended through dynamic linkage with other data stores to supplement the information in the Comverse ONE product offering repository, although the specifics of this process is highly dependent on the specifics of a service provider's needs and their existing information systems.

Other technical driven shortcomings related to throughput, latency, availability, security, auditability, usability, and other functional and non-functional considerations do not have a specialized handling process for product offering inventory. They are instead handled as a subset of the more general process for raising and resolving defects against the Comverse ONE code base, or requesting and implementing features against it. This is because, since the customer inventory is

implemented as a subset of the database and APIs, such defects tend not to be localized to product offering inventory, nor do their solutions.

Extended Description

Not used for this process element

Explanatory

Not used for this process element

Mandatory

Reserved for future use.

Optional

Not used for this process element

Interactions

Not used for this process element