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  - Service Provider
  - Solution Provider
- Customer Centricity
  - Service Provider
  - Solution Provider
- Open Digital Ecosystem
TM Forum Excellence Awards 2015 Guide

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It is my great privilege and pleasure to welcome you to the ninth annual TM Forum Excellence Awards. Each year they present an opportunity for our endlessly innovative members to showcase how they contribute to the evolution of the communications industry and digital business, and how they – and other members – benefit from their contributions.

This year we have been deeply impressed by the number and quality of the entries. We are grateful to every individual and organization that so generously contributed their time and effort to share their success and expertise in their submissions; this is what makes these Excellence Awards so prestigious.

We would also like to thank our hardworking panel of impartial judges for their Herculean efforts in reviewing so many top-class entries. The panel comprised a mix of leading industry and subject matter experts, analysts and investors (see page 4), all drawn from outside the Forum, working behind closed doors. They embraced their unenviable tasks of drawing up the list of nominees, narrowing them down to a shortlist, then choosing the winners in each of the five categories with great dedication and total discretion.

In recognition of the breadth and depth of our members’ businesses and advances in new areas, this year we have five categories.

- **Agile Business & IT Award – Service Provider** goes to the organization demonstrating the most innovative and effective use of TM Forum Frameworx to improve overall business agility, including improved time to market, scalability, reduced operating costs and improved capital efficiency.

- **Agile Business & IT Award – Solution Provider** is given to the company deemed to show the most innovative and effective use of TM Forum Frameworx to deliver tangible cost reduction, reduced risk and faster time to market.

- **Customer Centricity Award – Service Provider** recognizes the most effective use of TM Forum best practices and standards to improve customer-centricity in terms of better experience and innovation.

- **Customer Centricity Award – Solution Provider** is awarded for the most innovative and effective use of TM Forum best practices and standards to enable tangible improvement in customer experience, drive product and service innovation, or deliver other business benefits around customer-centricity.

- **Open Digital Ecosystem Award** is for the company demonstrating the most innovative service or solution for establishing new digital services, and contributing to an open digital ecosystem.

We are also delighted to appoint two new TM Forum Distinguished Fellows this year (see page 5). The Fellowships are given to those whose contributions to TM Forum, its members and the wider ecosystem, have been sustained and outstanding. This is both in their capacity as individuals, but perhaps even more importantly, as leaders, team players and advocates of the Forum’s collaborative ethos. We salute them both and look forward to working with them for many years to come.

Again, sincere congratulations and thanks to all those who entered for the Awards this year, and those who worked so hard to facilitate them. We look forward to following up with many of you to publish case studies based on your entries to showcase your success and inspire and help others on their digital journeys. They will appear on our inform.tmforum.org channel and be promoted in our newsletters.

If you would like to know more about the Excellence Awards and start planning next year’s entry, you can find details on page 24, along with information about how to submit a case study.

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JUDGING PANEL

TM Forum’s Excellence Awards are judged by an independent, impartial panel. Our sincere thanks to this prestigious panel for their efforts.

Chairman

Dr. Steffen Roehn is Chief Executive Officer, Roehn Management Consulting, which he founded in 2013. His company focuses on helping technology companies grow or restructure by advising executives on major strategy changes and supporting them in transformations and effective security. He also takes accountability as CxO for transitional phases. Dr. Roehn joined Deutsche Telekom Group in November 2000 as Board Member IT at T-Mobile Germany and held a number of positions in the group, including CIO of Deutsche Telekom Group from 2009 to 2012. He has served as a supervisory board member of TM Forum and was appointed TM Forum Ambassador in May 2012. Prior to Deutsche Telekom, Dr. Roehn was CEO, Diebold Management Consulting Group, and Principal, Gemini Consulting. Dr. Roehn has a doctorate in physics from Mainz University, Imperial College London and the European Research Lab CERN in Geneva.

Panel

Elisabeth Rainge is Research Vice President of IDC’s Communications Service Provider Operations Research Program. She is responsible for research into how communications service providers use software-rich technology solutions to improve their efficiency, effectiveness and profitability. Ms. Rainge rejoined IDC in 2013 after spending three years at Nokia Solutions & Networks (formerly Nokia Siemens Networks). In her previous tenure at IDC, she launched the company’s Next-Generation OSS & Billing Service, expanding IDC’s coverage of management of networked infrastructures and the telecommunications industry. From 2007 to early 2011 she also led IDC’s NGN Operations Service as a member of its Communications Service Provider Network Infrastructure Team. In addition, she led IDC’s enterprise network management research from 1996 to 2007. Ms. Rainge has a Bachelor’s Degree in history from Boston College and speaks Spanish.

Kiran Mathew Thomas is Vice President – Products and Innovation, Reliance Jio Infocomm, the telecommunications and digital services venture of Reliance Industries, which is India’s largest private sector company. He was the first employee assigned to Reliance Jio and has been a member of its core leadership team from its inception in 2010. Mr. Thomas joined Reliance Industries in 1997 as Junior Manager (Information Technology) in the process automation group for Reliance’s Jamnagar refinery. In 2001, he was among the initial members of the Reliance Infocomm start-up team, the Reliance Group’s initial venture in telecommunications. In 2005 he was a member of the team that developed the initial business blueprint and project plan for Reliance Retail. Prior to joining Reliance, Mr. Thomas worked with Tata Unisys Limited. He holds an MBA from the Graduate School of Business, Stanford University, and a Bachelor’s Degree in Electronics Engineering from the Cochini University of Science and Technology, India.

Pascal Viginier has led IT strategy at Orange as Group CIO since 2010. He has built up his experience over more than 30 years at France Telecom-Orange in the fields of IT, research and development, sales, and marketing. Mr. Viginier was appointed Head of Research and Development in 1998, transforming the CNET into France Telecom R&D with 4,300 researchers in 15 laboratories worldwide. He was appointed Director of Sales for France in 2006, developing sales and market share for Orange mass-market broadband and mobile services, and he became Director of Operations for France in 2008, managing all the activities of 105 operational units in the sales, services and networks sectors with a workforce of 70,000. Mr. Viginier graduated from Ecole Polytechnique in 1976, and from Ecole Nationale Supérieure des Télécommunications “ (Télécom Paris) in 1981. He is also a graduate of Institut d’Administration des Entreprises.

Keith Willetts is Founder and former Chairman and CEO of TM Forum. He is widely regarded as one of the world’s leading authorities on the business management of digital services and networks. Having stepped down as Chairman, Mr. Willetts continues as a director on the TM Forum Board of Directors. His achievements have been internationally recognized, and he has been voted in the Top 100 most influential people in the communications industry on multiple occasions. He was awarded the Global Telecoms Business lifetime achievement award, has been honored twice in Top 25 awards for industry visionaries, and was awarded both the British Computer Society’s and BT’s Gold Medal for Innovation. Mr. Willetts is author of two influential books, The Lean Communications Provider and Unzipping the Digital World.

Julie Woods-Moss is Chief Marketing Officer, Tata Communications, where she is responsible for company-wide marketing and communications. She is also CEO of NextGen Business, with P&L responsibility for business with ‘silicon valleys’ around the globe. Ms. Woods-Moss has more than 20 years’ experience with leading international corporations including IBM, UPC and BT. She is a member of the Marketing 50 and was recognized in 2012 by Women of Inspiration & Enterprise as a member of the Global Power 50. Ms. Woods-Moss is on the Advisory Board for Tata Group brand and is on the Big Data Advisory Board of The Boston Consulting Group. She has served as advisor to analyst firm Ovum and the X-Prize Foundation. Ms. Woods-Moss has been featured in various print and digital publications like The Hindu BusinessLine, Marketing Week, HumanResources Online and Marketing Magazine, and she is a regular speaker at industry conferences.

Jun (Michael) Wu has been Chief Executive Officer of AisialInfo since March. Before that, he served as Executive Vice President and Chief Financial Officer for the company. From 2008 to 2010, Mr. Wu was Chief Financial Officer of iSoftStone Information Technology Group, a Chinese IT outsourcing company. From 2006 to 2008, he served as Vice President of Finance for Huawei Technologies, where he was responsible for corporate investment, treasury and taxation, planning and reporting, and worldwide financial operation. From 1997 to 2005, Mr. Wu was with Lucent Technologies China, where he led the finance, accounting, contract management, and information system functions. His last position with Lucent China was as Chief Financial Officer. Prior to joining Lucent, Mr. Wu held various financial management positions with SAP (China) and Walls (China), a joint venture of Unilever. Mr. Wu holds an MBA from City University, Seattle, Washington.
TM Forum’s Distinguished Fellow Award recognizes individuals who have made valuable contributions to TM Forum, the communications and associated industries. We are pleased to introduce this year’s Distinguished Fellows, who not only meet but exceed the criteria for this prestigious award. We interviewed them both about their achievements so far and what’s next.

Michel Burger  
Chief Architect, Service Provider, Apigee  

“Michel has been an enthusiastic leader and contributor to the groundbreaking Digital Services Reference Architecture work, and given sustained service and thought leadership to the Strategy & Adoption Subcommittee and Open Digital Program Steering Group. He has helped to materially advance development of TM Forum’s Digital Services Management APIs and portal.”

How and when did you first get involved with TM Forum?  
MB: When I was at Microsoft in 2003, I was appointed as a board member representing Microsoft. Then when I joined Vodafone, I was appointed to the Executive Committee. I am also part of TM Forum’s Ambassador Network.

What did you want to achieve?  
MB: To expand the role of TM Forum beyond telcos and expand the definition of service to digital services, therefore applying service management to digital services and digital service providers.

What are the most important contributions so far?  
MB: At Microsoft, the notion of well-enabled services, which became the origin of the Service Delivery Framework and the Digital Services Reference Architecture. At Apigee, the push towards APIs and the notion of the management API and API-driven common services.

What impact have they had?  
MB: The communications industry, and to a large extent the service provider industry, is now more aware of the management aspect of digital services. The push towards the health toolkit is an example of that.

What’s next?  
MB: Transitioning to the digital economy is a key issue for service providers. By providing an API gateway, Apigee enables many TM Forum members to quickly migrate to the digital economy. The work on the Open Digital Ecosystem, Digital Services Reference Architecture and Internet of Things projects are all contributing to that.

Andrew Thomson  
Director for Infonova R6 Solutions, BearingPoint  

“Andrew has given sustained service as a leader and mentor to the Strategy & Adoption Subcommittee and Open Digital Program Steering Group, and he is a strong advocate and executive sponsor of the Catalyst program. Andrew has driven the use of TM Forum standards in Infonova through to successful commercial implementations, and contributed significantly to the development of the Forum’s widely implemented best practices and standards through collaboration.”

How and when did you first get involved with TM Forum?  
AT: Around 2002 when I was working on a business transformation design and initialization program for an incumbent communications service provider client in Asia.

What did you want to achieve?  
AT: We used the Business Process Framework (eTOM) extensively to help articulate the business process responsibilities and interface points between the client’s corporate functions, its market-facing business groups and the back office and technology groups. This helped the client establish a common approach for its end-to-end business operations.

What are the most important contributions so far?  
AT: BearingPoint and Infonova have worked with a number of the Forum’s members over the last six years across a string of innovative Catalyst projects. They have all focused on multi-party scenarios, exploring how service providers might partner, monetize and orchestrate cross-industry scenarios in the open digital economy.

What impact have they had?  
AT: The key proposition of this effort has been to bring alive the possibilities provided by business partnering – B2B2X capabilities – and what this can offer in terms of positioning service providers as enablers for other service industries to be successful in the open digital economy [see page 20].

What’s next?  
AT: Enabling smart cities and smart citizen scenarios are key topics. B2B2X is a key enabler for members of a community to contribute different services and capabilities for re-use and repackaging by third parties, ensuring they will be correctly compensated.
CATEGORIES

Agile Business & IT Award

Service Provider
Awarded to the service provider demonstrating the most innovative and effective use of TM Forum Frameworx to improve overall business agility: improved time to market, scalability, reduced operating costs and improved capital efficiency.

Agile Business & IT Award

Solution Provider
Awarded to the solution provider demonstrating the most innovative and effective use of TM Forum Frameworx to deliver tangible cost reduction, risk reduction and improve time-to-market.

Customer Centricity Award

Service Provider
Awarded to the service provider demonstrating the most effective use of TM Forum best practices and standards to improve customer centricity in terms of experience improvement and innovation.

Customer Centricity Award

Solution Provider
Awarded to the solution provider demonstrating the most innovative and effective use of TM Forum best practices and standards to enable tangible improvement in customer experience, drive product/service innovation or deliver other business benefits in terms of customer centricity.

Open Digital Ecosystem Award

Awarded to the company demonstrating the most innovative service or solution for establishing new digital services, and contributing to an open digital ecosystem.
China Unicom has proactively pursued a transformational strategy of ‘leading mobile broadband and innovating operational integration’, after the issue of 4G licenses.

By leveraging its Business Support System (cBSS), the company has also pushed forward with its centralization operations, along with unifying its products, system support and customer services. In the process, China Unicom has established a newly-structured and unified product portfolio for integrated online and offline operations covering all businesses and customer segments across 31 provinces of China.

By March 2015, the number of users supported by the cBSS system had reached 30 million. As the centralized system avoids duplicating investment in each province, China Unicom estimates the immediate annual savings, based on first-phase system users, to be about Rmb30 million ($4.8 million). By the end of 2015, the number of system users is expected to be 120 million.

By referring to the TM Forum Business Process Framework (eTOM) and Information Framework (SiD) guidebooks, the development effort was greatly reduced: The implementation time for this large-scale system took less than six months to complete.

The company can now use cBSS to deploy a unified operational process framework and a full-service information model to enforce nationwide operational management thereby improving market response. This means the company can rapidly launch services and products to meet the market’s needs across China, using flexible system configuration management and a unified operational model. This has resulted in an 80 percent improvement in product management nationwide, without compromising the flexible marketing policy.

The Application Framework (TAM) helped define the cBSS system functional view, especially in the three important areas of service provisioning, product management and billing. cBSS also makes full use of TM Forum’s Integration Framework to allow the easy integration of more than 100 peripheral systems.

China Unicom also took TM Forum’s best practices, models and guides on cloud and infrastructure management, big data analysis and revenue assurance into consideration for system development and deployment. These effectively reduce business risk for nationwide unified credit control, blacklisting functions and securing against international call fraud.

Furthermore, the company participates in TM Forum Catalyst projects on a regular basis, including data-driven network performance optimization, NFV, SON and Smart City. It also reviews the released papers to provide feedback and intends to share its best practice within TM Forum.

CHunghwa Telecom

The booming growth of Internet of Things, cloud services and software-defined networking impact the digital service industry profoundly. They introduce more elements into the digital service ecosystem, and more participants are joining in. For service providers, the challenge is to manage the increasing complexity of service operations: The big question is how to improve time to market and assure quality effectively?

Chunghwa Telecom (CHT) previously operated mainly in the area of communications technology, for example constructing the largest communications infrastructure in Taiwan. In recent years, the company has developed a clear roadmap to gradually move from a telecommunications company to an ICT service provider.

Many domestic service providers are partners using CHT’s ICT service infrastructure. In 2015, the revenue ratio of digital services is expected to hit 5 percent, equating to about NT$11.4 billion ($373 million). More powerful and service-oriented BSS/OSSs are required during this massive business transition.

CHT’s NGOSS project was kicked off in 2006. During that time, dozens of information systems have been converged into several major BSSS/OSSs to support daily operations. To cope with business transition, the aim of the next phase of CHT’s NGOSS project is to establish a comprehensive service-oriented platform to support digital services management.

For this project, CHT introduced TM Forum’s Frameworx and Digital Service Reference Architecture (DSRA) to develop the CHT Digital Service Lifecycle Management system (SLM). The company manages company-wide standardized digital service specifications centrally, through catalog-based service provision.

It also referred to the best practices of the Forum’s Open Digital Program, adopting established common management APIs to encapsulate service management capabilities from different domain information systems. CHT built an API Broker to handle interactions between SLM modules.

The SLM enables the rapid deployment of operational functions for new digital services with up to 70 percent fewer development staff. It also dramatically boosts the operational agility to reduce service delivery cycle times by between 50 and 66 percent. Better quality management provides ‘real-time’ analysis to monitor the health of services from end to end. Used with operational key performance indicators, they locate the root cause of failure within ten minutes to reduce the mean time to restore.

In the future, CHT expects to provide an open service development platform for external partners using the concept of digital service lifecycle management. By expanding the number of ecosystem participants, the company will help create richer applications and lead Taiwan’s ICT business sector towards becoming the next trillion-dollar industry.
Far EasTone Telecommunications

Far EasTone attributes its ability to successfully offer, sell and deliver innovative products and services to its customers to the way in which it has applied TM Forum standards when implementing its product-driven order management project.

The project was designed to transform Far EasTone’s legacy IT systems and operations, which involved re-engineering its mobile business processes based on TM Forum’s Business Process Framework (eTOM), a new hierarchy of product information based on the Information Framework (SID) and a refined IT enterprise architecture and application map based on the Application Framework (TAM).

Far EasTone was having problems because it had five separate product systems and product catalogs that were scattered across those product systems. This meant the company couldn’t provide a single view of its products to its marketing personnel, customer service representatives, network engineers and IT solution designers. Also, the lack of centralized product management meant it had inconsistent product definitions across its various lines of business.

In addition, it was unable to leverage system capabilities to create product bundles and individual customer solutions in time to maximize revenue opportunities. Having implemented the Information Framework model however, the various teams can use the same language for effective communication among partners. Also, Far EasTone can now categorize its products and technical services to simplify bundle creation, product rule definition and product portfolio management.

The successful conclusion of the project has bought tangible business benefits including reductions in cost and risk along with the ability to roll out products and services faster than ever. With the integration completed, 14 legacy systems and seven customer-related databases can be decommissioned, which means the CapEx budget on IT is expected to decrease by 10 percent on an annual basis and OpEX to decrease by 5 percent on an annual basis within three years.

Risk reduction around issues such as product combination and the implementation of rules was also reduced significantly.

The time-to-market benefits of the project are also very clear. Far EasTone started to provide its 4G LTE service in June 2014 and has since launched more than 75 4G products. Combined with the bundled contract and content services, the network operator has launched more than 4,000 promotion packages and by the beginning of 2015, it has signed up more than 1 million 4G subscribers. Currently Far EasTone commands 28.5 percent of the mobile market share in Taiwan.

Verizon Communications Inc.

Verizon Enterprise Solutions has fundamentally transformed the way it does business on a global scale by standardizing processes, optimizing its systems architecture, and rationalizing its product suite. The result of this transformation is called Verizon Rapid Delivery (VRD).

Verizon developed a next-generation configure, price and quote solution and connected it to its customer relationship management systems. At the core of VRD is a single product catalog which drives pricing, contracting, workflow, billing, activation, and invoicing.

Product availability is maintained in the catalog to drive the right product recommendations to meet customers’ needs and satisfy regional regulatory requirements. It also supports product bundling, selling configurable solutions and underpins multiple business-to-business (B2B) business models.

Sales are enabled with standardized worldwide contract terms using online presentation and an engine that can uniquely price a dynamic service configuration. VRD also improves speed to market by enabling Verizon to quickly partner with third party vendors to create new solutions.

This integrated topology enables a global quote-to-bill process that provides real-time visibility into the customer’s service lifecycle and ensures there is a feedback loop to improve customer experience. This ensures consistency between what is quoted, what is ordered and what is billed, thereby providing a competitive advantage by rolling out new products quicker, delivering a better service and realizing revenue faster.

Using the Business Process Framework (eTOM), Verizon streamlined the process for selling and order handling. On average, this reduced the quote to order interval from 25 days to eight and reduced price calculation from five days to near real-time. The Information Framework (SID) compliant product catalog simplified the quote process and significantly reduced the quote configuration time.

Before VRD, access quoting was done in multiple systems resulting in a lengthy process to determine availability and pricing of all locations. VRD performs searches for access availability and pricing for last mile access anywhere in the world within minutes. Previously, approvals for discounts were manual and time intensive.

Finally, Application Framework (TAM) adoption helped the order flow through and enabled integration based on business rather than protocol. With 98 percent order flow through to billing, the quote, provisioning information and bill all tie together. This benefits Verizon and customers, enabling a more accurate and efficient billing system.
Virgin Media is a quad-play mobile virtual network operator in the UK, where it uses EE’s core network capabilities and mobile radio access. The company launched the Virgin Media Mobile Transformation Program to evolve its BSS/OSS IT Systems to:

- replace legacy IT stacks with best of breed and best practice products and solutions;
- decouple IT from EE to allow innovation on business models and increase flexibility and shorten time to market;
- increase focus on customer-centricity and transparency, providing a better customer experience;
- simplify the IT stack using pre-integrated out-of-the-box solutions standardized to TM Forum’s Frameworx;
- enhance BSS-enabling capabilities for revenue growth from existing subscribers; and
- set the foundation for converging BSS IT with other IT stacks.

The Business Process Framework was used to rework business processes throughout the BSS organization, by analyzing the existing processes and defining a quantitative assessment of value, cost and performance of processes. This helped to eliminate duplication and find missing steps in processes, leading to more efficient operations. It also helped to expedite the development of new processes.

To build an open, future-proof IT stack, conformance with the Information Framework (SID) was a key criterion. During the project implementation, Virgin Media and Huawei performed a systematic mapping of the business processes guided by the Business Process Framework (eTOM) with the Information Framework (SID) to transform the legacy stack into the new BSS one.

Consolidation of data models with clear definition of data elements and relationship improves the standardization of interfaces and data across the solution, greatly simplifying the systems and data. This means that 25 percent of legacy processes (mainly used for data cleansing) and fuzzy matching purposes are redundant. The main product offerings configured in the system have been cut by 74.45 percent (that is the number of rows in the master product catalog)

Virgin Media referred to the Application Framework (TAM) to help define system functions and boundaries. The MTP Design Authority has governance and the application architecture refers to the framework (3.0) throughout the solution definition and detailed design stage.

Through TM Forum standards Virgin Media created process and solutions to bring new innovations quicker to market through this transformation program and improve competitiveness by: reducing four-fold its CRM systems; a five-fold consolidation of its offerings; a four-fold gain in the journey for new sales; six-fold improvement in changes to offers, and a three-fold improvement in order fulfillment.
Being closely aligned with TM Forum’s Frameworx, Singleview, CSG’s real-time charging and postpaid solution, shortens implementation time and effort, and makes it easier for customers to understand which functional areas are supported by the solution.

Frameworx enables a template Singleview solution which is modified on a country-by-country basis to support market-specific and statutory requirements. The template approach obviates the country specific solution approach and reduces on-going support costs. It also facilitates a common approach to user testing, training and operational readiness thereby further reducing the cost of deployment.

Companies implementing Singleview have benefited from shortened implementation times and reduced implementation risks as well as a faster time to market for new products and services.

In the case of a large pan-national operator, CSG has achieved a reduction in implementation effort of between 20 to 30 percent thus far and expects the level of reduction to further improve. Just as important, as the implementation effort reduces so too does the implementation timeframe, meaning that companies can quickly realize business benefits and bring new offerings to market faster.

In the case of an Eastern European MVNO, which required a rapid implementation project to support a strategic re-launch, a 40 percent reduction in the implementation cost was achieved, resulting in direct and tangible benefits to the customer. CSG has also based the Singleview user documentation on Frameworx by organizing the content around Business Process Framework (eTOM), Application Framework (TAM) and Information Framework (SID).

CSG has leveraged the Business Process Framework to construct a set of customer journeys business process flows, using discrete processes as the building blocks. This means that CSG can communicate meaningfully with business users as well as the communication services provider technical staff and bring a greater level of clarity to the requirements definition process, minimize misunderstandings and avoid costly reworking at the user test stage.

Based in Englewood, Colorado, USA, CSG International leverages TM Forum standards to the benefit its client base worldwide, which includes the majority of the top 100 global communications service providers.

Ericsson’s Charging & Billing in One (CBiO) is the company’s end-to-end real-time convergent business support system. It allows service providers to support a full range of charging and billing needs for all market segments, including retail, wholesale, residential and corporate, in a single product.

The solution handles all customers, partners and services in a streamlined, convergent process, covering pre-paid and post-paid, voice and data, fixed and mobile, retail and wholesale. It provides customer, product and order management, real-time rating, discount and promotion handling, balance management, billing, finance and partner settlements.

With hyper competition and more application usage, retail customers expect proactive choice with cost control, paired with the flexibility for accounts and services to span family groups and not just individuals.

By bringing all relevant customer data together, CBiO enables customer care staff to resolve issues quickly and to provide comprehensive self-care support so customers have a simple, convenient and personalized way of handling their accounts. Service providers can configure a wide range of marketing initiatives, such as the use of differentiated tariffs, promotions, discounts, incentive programs, targeted campaigns and cross-service bundles.

CBiO includes a flexible, easily managed and configurable rating engine, making it possible for service providers to quickly create personalized offerings and promotions for different customers and partners. CBiO takes advantage of TM Forum Frameworx and uses communications-grade technologies to provide accurate, reliable, real-time, end-to-end functionality.

By using TM Forum best practices and standards, Ericsson, its customers, and its partners reduce the risk of miscommunication, enabling substantial cost savings, faster integration and simplified collaboration.

CBiO helps service providers to deliver multiservice offerings which meet user expectations of convenience, simplicity, spending control and billing clarity, as well as providing customer-facing staff with unified tools for efficient sales and customer support. In addition, service providers can gain increased cost and process efficiencies through a streamlined, single convergent system for all users, products and services, as well as providing real-time credit control to prevent credit overruns and to reduce bad debt.

Ericsson has provided operators with real-time charging capabilities since 1996. It’s charging and billing solutions support more than 2 billion subscribers worldwide at more than 20 Service providers. Founded in 1876, Ericsson has its headquarters in Stockholm, Sweden. Net sales in 2014 were SEK228.0 billion ($33.1 billion).
Etiya and TierOne are helping a large North American communications service provider reduce costs by virtually eliminating major IT spending on the introduction of new, complex network-oriented business services and processes.

Using Etiya’s Telaura Product & Catalog Management and Sales and Order Management systems in conjunction with TIERONE’s NETPortal CMDB, the service provider has saved on system interfaces and upgrades required to launch new services, and has been able to delay IT computing infrastructure expansion and upgrades.

The company, which sells services to enterprise customers, also has been able to reduce time to market through easier service-configuration capabilities. Problem resolution and configure, price, quote times have dropped as well.

The service provider is using Etiya’s Telaura Catalog, which is Frameworx-compliant, and TIERONE’s NETPortal, which provides a Frameworx-compliant graphical user interface, to drive component-based assembly of new products, fulfillment flows and assurance models. Complex workflows are simplified and managed directly by the end users within NETPortal projects, while the Telaura Sales and Order Management solution manages workflow for all service interactions at the corporate level.

Under the Business Process Framework (eTOM) service-fulfillment model, order handling and service configuration processes were followed to ensure unified integration between Telaura and NETPortal, while support integration of activation and provisioning processes followed the existing legacy systems in place. This allowed for a deployment-ready solution to be available in just eight weeks, which would not have been possible without the framework.

Since both Etiya’s Telaura and TIERONE’s NETPortal have data models that conform to the Information Framework (SID), integration at the data level was greatly simplified and the concept of customer- and resource-facing services provided the demarcation point to interact with the end business customer and network implementation in a consistent fashion.

The Application Framework (TAM) was used as a guideline to outline the applications and their functional domains and was used to design the high level architecture of the overall systems.

Overall, the combined solution has improved efficiency of fulfillment and assurance processes, created end-to-end views of customer-to-service-to-resource relations and differentiated customer experience delivered through self-service reconfiguration capabilities.

Huawei’s BSS solution leverages a fully integrated stack of modularized components to offer service providers a business enabler as a service platform to roll out digital services. Such a business enabler is key to changing the digital service landscape in which success will be driven by a number of core capabilities.

These capabilities include the ability to support multi-channel customer journeys with all online marketing, sales and service while enabling cross-channel collaboration, and enabling flexible and fast configuration with diversified products from both the service providers as well as their third party partners.

Customer engagement is also important for enabling delivery of proactive care strategies to optimize customer value through consistent anytime, anywhere and any-channel customer experience. The business model, too, is important for generating new revenue streams through open digital ecosystems, based on partner aggregation and enablement.

In terms of architecture and infrastructure, Huawei enables lower total cost of ownership through cloud-based and componentized solutions. The company uses TM Forum standard terminology and references to document customer requirements in a clear, organized and structural manner.

Huawei BSS utilizes TM Forum Frameworx throughout the various phases of product and solution planning; architecture and design; presales and consulting; requirement analysis documentation and project implementation. These practices have already been successfully deployed in the many projects such as Virgin Media, China Mobile, KPN, Ooredoo, Telefonica and Celcom.

Huawei’s out-of-the-box BSS solution is based on Business Process Framework (eTOM), Application Framework (TAM) and Information Framework (SID). Utilizing its flexible data model as well as the layered configuration model, Huawei is able to replace customization by configuration for about 80 percent of customer requirements, excluding integration. In business process optimization in real projects, the company is able to achieve 20 to 30 percent process efficiency gain.

By utilizing the Integration Framework, Huawei can reduce the integration workload by between 10 percent and 30 percent with external data interfaces, as well as having the number of products significantly reduced. Furthermore, its configuration approach is capable of eliminating the need for customization and coding for new product launches in about 80 percent of cases.
Service provider agility is dictated by strong market demand and has a direct impact on average revenue per user and the total cost of ownership. Most providers face the challenge of either being as agile as possible at an incredibly high cost or following the market leaders and losing customers. NetCracker enables service providers to address these challenges on the technology side by modular, catalog-based provisioning and technology-agnostic modeling.

NetCracker’s products are all pre-integrated on a single platform, so when it designs a solution, only the modules for the current business needs are included, but more can be added as required. NetCracker’s service and resource management capabilities are certified as conforming to TM Forum Frameworx, giving customers full transparency into the solution design as well as decreasing the implementation timeframe.

NetCracker provided a Tier 1 US mobile operator with a consolidated, centralized way to manage and provision its new mobile infrastructure. Its solution helped the operator capture, assure and record critical provisioning information as it deployed and operationalized a nationwide program. The operator was also able to offer an enhanced LTE service, which supports advanced mobile services and applications including high-bandwidth cloud services, virtual reality environments and peak wireless speeds of 50Mbps to 60Mbps.

This project is an example of the high degree of efficiency possible when using TM Forum’s Application Framework (TAM), which provides a common language for various stakeholders when building the solution architecture. It proved particularly useful when classifying existing and legacy systems and designing the target solution and an automation strategy. It also facilitated the decommissioning of legacy systems, reducing time spent by a factor of three compared to estimates without the use of the Application Framework.

From NetCracker’s experience with this customer, the use of the Application Framework functional demarcation allowed it to carry out the architectural design almost twice as fast and prevented functionality duplication when compared to non-standardized approaches. The utilization of the Application Framework common language allowed NetCracker to optimize the time taken for architecture engineering and integration time, lowering it by a factor of 2.6.

In the development and delivery of ZTE’s ZSmart application programming interface (API), elements of TM Forum’s Frameworx were widely utilized, including Business Process Framework (eTOM), Information Framework (SID) and Application Framework (TAM). ZTE used them to map the concepts, goals, structures and flows of APIs during the implementation to identify what the new entities are and which existing entities need to be changed according to new business requests.

It also deployed the elements to efficiently design and implement these new entities with explicit attributes and operations drawing on the Information Framework to easily reconcile legacy BSS/OSS components and the API itself, in line with the principles of the Business Process and Application Frameworks. In addition, these elements were used to simplify and increase the reusability and interoperability of the API within a clearly defined scope.

Individually, Frameworx elements were utilized in a number of specific ways. The Business Process Framework was used for regulating all internal business processes and standardizing the interoperability of the overall ecosystem. The Information Framework was used to create a rational data model and define business rules. The Application Framework was used for system development, based on standardized components.

In addition, parts of the Integration Framework were used to develop software-oriented architecture (SOA)-based integration and a set of standard interfaces were used to enable rapid, reusable and flexible integration between legacy systems and the ZSmart API. Also, the ZSmart API utilized the specifications of TM Forum’s APIs, resulting in a dramatically shortened time to market without compromising the standard of the implementation.

Some of the main benefits of utilizing Frameworx included a 20 to 35 percent reduction in the cost of communication between carriers and ZTE, a marked improvement in the efficiency of knowledge transfer from ZTE to customers, and faster introduction of new features plus simplified updates in line with Frameworx updates.

ZTE Corporation is a global provider of telecommunications equipment and network solutions. With operations in 160 countries, the company was founded in 1985. ZTE is listed on both the Hong Kong and Shenzhen Stock Exchanges.
Avea, the sole GSM 1800 mobile operator in Turkey, chose Etiya’s Telaura solutions to launch Project UNICORN, which places a centralized product catalog, unified order capture and customer order orchestration layer at the core of the company’s digital ecosystem.

Driven by a spirit of innovation, Avea, the youngest operator in Turkey, has a nationwide customer base of 16.6 million subscribers (as of the first quarter 2015) and offers services to 98 percent of Turkey’s population. Project UNICORN is expected to reduce capital and operational expenditure (CapEx and OpEx) for the company by 70 percent over the next three years and has already reduced OpEx in the dealer channel by 18 percent. The project also has cut the number of complaints from customers by standardizing customer service.

Avea’s Telaura implementation is outlined and designed based on TM Forum’s Frameworx suite of standards-based tools and best practices, with Etiya completing TM Forum Frameworx Conformance Certification. By using Frameworx, Avea was able to mitigate risks and will be able to launch real-time complex device campaigns. The company also will have a consistent model for creating multiple product offerings, and it will be able to standardize customer service by adding a user screen for call-center agents and dealers to know why a customer isn’t eligible for products at time-of-purchase.

As part of the UNICORN Project, business requirements in requests for proposal (RFPs) were mapped to Level 3 and Level 4 processes in the Frameworx Business Process Framework (eTOM), which reduced the time required for preparation of RFP responses by 60 percent. The processes were effectively used in impact, requirement and gap analyses during the advanced stages.

Customer relationship management-related entities in the Information Framework (SID) also were examined in detail. Suitable Level 1 Aggregated Business Entities were used as a starting point for designing the data model, and 13 Level 1 Information Framework business entities were included.

The Information Framework was used for defining common data model of integration and related entities in order to drive a smooth integration phase and shorten the project lifecycle, and the Business Process Framework provided a perfect guide to handshake on the scope. Avea also used the Application Framework (TAM) in its implementation.

China Unicom

Amid a changing competitive landscape and industrial challenges, China Unicom is focusing heavily on customer centricity, with big data analytics becoming one of the key enablers to evaluate customers’ potential value and create new revenue. The company now operates one of the largest big data platforms in China – a 2,000-node network with 4 petabytes of data from more than 300 million customers.

China Unicom’s annual revenue from marketing operations for customer retention supported by its big data platform reached RMB 119.15 billion ($19.2 billion) in 2014 and covered 145 million customers. Its marketing target rate is seven times more precise than before, and it has reduced churn by 12 percent through its customer experience improvement program which focuses on network, sales, service, product, consumption and application.

As a result of precision marketing, China Unicom’s mobile market share increased 5.3 percent in 2014, while sales costs decreased 21 percent.

China Unicom also has been able to launch a series of innovative new services to create new revenue, such as its real-time bidding advertisement service, online financial services, and services for smart transportation and smart cities.

TM Forum’s Frameworx suite of standards-based tools and best practices has helped China Unicom with its big data transformation. The company used: the CEM Use Case Standard, which provides a template to helps companies develop big data use cases; the IG1125 Omnichannel Introductory Guide, which explains the importance of an omnichannel strategy; and the TM Forum Customer Life Cycle Experience Model (GB962), which defines a three-layer, multi-phase model that allows service providers to define interactions with their customers based on their unique journeys.

Using the standards and best practices helped China Unicom develop its customer segmentation models, effectively shortening the initial design time and deepening the company’s understanding for improving model accuracy.

Meanwhile by referring to the Big Data Analytics Guidebook Addendum A (GB979A), in particular the business value roadmap, China Unicom has been able to develop data products to explore new businesses and monetize network assets and customer data. The company is hoping to contribute back some of what is has learned to Frameworx.

China Unicom also participates in Forum working groups and Catalyst projects on a regular basis. The company is currently championing two Catalysts that are being demonstrated this week at TM Forum Live!: Smart Cities: Fast Building Environment for Value Generation and Multi-cloud SDN-NFV Service Orchestration.
During the past four years cable operator Liberty Global has undergone an IT transformation including development of a new custom multichannel digital ecosystem, built using TM Forum’s Frameworx standards and best practices.

The new ecosystem has enabled Liberty Global to achieve its business vision through the launch of new digital products and services as well as multichannel sales and care capabilities with a fast time to market. It has enabled standardization, which translates to a reduction in capital and operating costs.

Liberty Global has launched more than ten new digital services in ten European markets. In every subsequent country where services have been launched, the rollout has happened within two to three months with 75 percent total effort reusability. A traditional approach would have yielded less than 30 percent reusability.

The core business drivers for the transformation were to:

- increase customer engagement via multiple channels for self-sales and self-care, making the online channel the top commercial and customer-preferred channel while enabling personalized customer interactions and journeys;
- enable new digital services and bring the ‘in home’ experience to customers when they’re away from home by enabling them to access services anywhere on any device.

Liberty Global based its information model for the transformation fully on the Information Framework (SID) and used the Business Process Framework (eTOM) to map and validate process coverage for product catalog, order management and multichannel applications. The company also used the Application Framework (TAM) to map the functionality coverage and the REST API Design Guidelines and the Catalog to Catalog Interface to build and define standardized interfaces and patterns.

With 25.8 million customers in Europe, Liberty Global is the largest international cable company. The company’s consumer brands include Virgin Media, UPC, Ziggo and Unitymedia.

PT is a leading customer-oriented service provider operating mainly in Portugal. It has implemented a project to deploy a unified Customer Problem Management (CPM) system that can provide end-to-end insight, addressing all service portfolios, and can be used by front office, back office and engineering teams.

PT’s primary focus is providing innovative and evolved services to more than 8 million customers, with activities that extend across all telecommunications segments: fixed line, mobile, data, TV and convergent services to residential and corporate markets. The company’s CPM project was based on NOSSIS NetQ product from the NOSSIS Suite, which has been certified as conforming to TM Forum’s Frameworx.

NetQ is a unified multi-vendor end-to-end, CPM solution where test, diagnosis, troubleshooting and problem correction are key features covering major parts of the customer relationship lifecycle. TM Forum Frameworx was widely used as a main reference to guarantee the specification and implementation of the project with the correct functional and information scope.

TM Forum Frameworx alignment, mainly with the Information Framework (SID) and the Business Process Framework (eTOM), guaranteed the best results for implementing customer-centric processes, convergent customer service and focus on the customer problem management processes, within a short period of time.

The project, which lasted seven months, deployed NetQ in phases. The first phase addressed double- and triple-play residential services in gigabit-capable passive optical networks (GPON), while the second focused on asymmetric digital subscriber line (ADSL). With the successful implementation of the project, NetQ became PT’s unified CPM system across the organization.

When adopted by non-specialized teams at the first call attendance, using the correct and accurate algorithms for diagnostics, NetQ solves up to 60 percent of customer problems at the front office. If the problem is not solved by front-office teams, NetQ provides additional expert information and tools in order to facilitate problem resolution, giving an overall reduction of up to 20 percent for service problem resolution (MTTR).

As a consequence of the huge gains of the problem resolution from both front-office and back-office teams, and because the system covers all end-to-end service resources, it enables a very significant reduction in truck rolls and field force team allocation expenses, and at the same time improves customer experience.
With nearly 150 million subscribers, Reliance Communications (RCOM) is India’s second-largest communications service provider. The company implemented a data-driven initiative offering service packs with free Facebook and Twitter at fixed rates, as part of handset bundles. It also used business intelligence and analytics to deliver hashtag tweets offering customers products designed specifically for them.

As a result, RCOM has been able to reduce customer churn by at least 8 percent and has seen incremental savings of 2.5 percent in operational expenditure for customer service operations. The company has also increased revenue by 2 percent.

RCOM recognizes the importance of developing business strategy and using technology based on knowledge of the customer’s experience, and the company relied heavily on three key business drivers for this project: increasing revenue, reducing costs and retaining customers, as laid out in TM Forum’s Frameworx suite of standards-based tools and best practices. Specifically, the company implemented principles defined in the TM Forum Customer Experience Management Solution Suite (GB962).

The CEM tools helped reduce the cost of providing customer service by decreasing dependency on manned interactive voice response channels, and they helped to optimize customer-oriented processes laid out in the CEM roadmap.

Using the CEM solution suite has helped RCOM map, measure and monitor customer behavior and build relationships with customers. This has helped to break down silos to create a seamless experience across the various channels of customer service that RCOM offers, and in providing personalized customer service in near-real time, which in turn increases retention.

As part of RCOM’s new data-driven initiative, Twitter pushes tweets using the RCOM handle to RCOM’s Twitter application. In development and delivery of the application program interface management, RCOM used the TM Forum Business Process Framework Getting Started Guide (GB921) to understand the common concepts, goals and structure of business processes.

By employing TM Forum’s Customer Centricity best practices, Optus, one of the largest communications service providers in Australia, is successfully transforming its Consumer Business Unit fixed-line call center operation from reactive to a focused, customer-centric organization. The target results are impressive: more than a 30 percent reduction in average handle time; a 14 percent improvement in first-call resolution; and up to a 25 percent improvement in net promoter score.

The Effective Call Centre Management (ECCM) solution is one of the key initiatives that the Optus Customer Experience Transformation team embarked on as part of its transformation. The TM Forum Customer Experience Management Guidebook was used to provide the guiding principles during the analysis and design phase of the project.

Optus used the guidebook to develop an intuitive user portal with an interface that resembles Facebook rather than a typical back-office, Windows-based application. The goal was to create an application that empowers call center agents to support customers’ needs with the right information at the right time.

Optus is integrating more than 15 systems as part of the transformation, with call flows and processes being standardized and optimized according to TM Forum standards and best practices to ensure repeatability and consistency across customer interactions.

With implementation of the first phase of ECCM complete, care operators are now able to focus on interacting with the customer. As the solution automatically performs pre-checks, customer validation and initial fault diagnostics and testing, the customer care agent fielding an incoming call has immediate insight into a customer’s account, services and the fault they are calling about.

The increased speed of information gathering coupled with the way it is presented at the start of a call makes the interaction more proactive than reactive, which in turn improves customer experience. Overall, the average handling time for calls to customer service centers is targeting to decrease from 20 minutes down to 13.3, which is a 30 percent improvement.

The experience of the customer care operator, who is in a customer-facing role, has been greatly enhanced as well, with a well-designed, intuitive, guided solution that empowers them with the right information, at the right time, to provide superior customer service on every call. Optus supports the idea that happy call center agents result in happy customers – and much improved experience.
Amdocs

A North American cable operator had high support costs to serve habitual callers who were asking for a credit for dropped international long-distance calls of less than one-minute duration. The cost to credit these customers was more than the actual credit amount. But by using Amdocs Proactive Care, the operator was able to proactively provide credit and reduce call rates.

In addition to crediting the calls, the service provider was able to proactively provide an explanation for ‘abnormal’ fees not listed on previous bills that could cause customers to call the contact center. The solution enabled a 14 percent reduction in call rates (for customers calling within 30 days) for bills containing an abnormal fee, and a 40 percent reduction in call rates by automatically issuing credit to customers who habitually called to request credit for dropped calls shorter than one minute.

Proactive Care provides personalized service for each customer by leveraging customer context to anticipate potential care needs and proactively addressing them before the customer is even aware of an issue. It helps operators increase profitability by improving their all-critical net promoter score, while reducing costs. For example, one operator reported a 12.5 percent saving per credit adjustment.

Proactive Care uses the Frameworx Business Process Framework (eTOM), Information Framework (SID) and Application Framework (TAM). In fact, Amdocs proposed a new layer within the customer management domain of the Application Framework that was subsequently modified and adopted as a standard in Frameworx 13.

When Amdocs started developing Proactive Care, the company reviewed the existing Application Framework and the associated foundation of its Insight decisioning/analytics engine, but could not find a direct mapping between the two. Amdocs subsequently proposed a new layer called Customer Insight Management, which provides the technical and business process framework to help service providers leverage insight gained from customer transactions, interactions and activities to provide personalized service. It can be applied to many customer experience-related actions such as customer service, cross/upsell, retention, etc.

Other related benefits of using Frameworx include reduced system-integration costs: The Business Process and Information frameworks enable Amdocs to bring in external system data using simpler ETL (extract, transform and load) processes, reducing data movement costs by over 70 percent. Proactive Care’s extensive use of the Information Framework and pre-configured libraries based on entities outlined by the framework has also resulted in up to an 80 percent reduction in time to roll out new proactive care use cases.

BONC 东方国信

Business-Intelligence of Oriental Nations Corporation Ltd.

By adopting a big data platform, companies can realize a 20 percent reduction in capital expenses and a 40 percent reduction in operating expenses, according to Business-Intelligence of Oriental Nations Corporation (BONC), which provides its big data solution to major Chinese service providers including China Mobile, China Telecom and China Unicom.

BONC serves 26 China Unicom provinces, 14 China Telecom provinces and 14 China Mobile provinces, plus the group operating company of each. The supplier’s big data platform has already been successfully used by 17 provincial operators, with the dedicated big data processors installed by 13 customers. The company’s big data governance ETL (extract, transform and load) products are used by more than 40 customers, and over 60 companies have adopted its big data analysis and presentation tools for do-it-yourself data acquisition and analysis.

Service providers are saving an average of 25 percent on the time it takes to develop programs for improvement of existing customer management by using the BONC solution. In addition, 70 percent of customer segmentations are fruitful; marketing costs are cut by 40 percent; and the rate of customer loss is reduced by 3 percent.

BONC also supports non-telecom data operating services, with almost 10 projects carried out so far. While building its big data platforms, BONC referred to TM Forum’s Frameworx suite of standards-based tools and best practices including the Business Process Framework (eTOM), the Information Framework (SID) and the Customer Experience Management Program, which improved end user experience before, during and after sales, as well as end-to-end service quality.

BONC built nine customer identifying models by referring to the Customer Experience Management Guidebook (GB962), which helped the company accurately identify users and discover customers’ needs in depth. BONC also used the Big Data Analytics Business Value Roadmap and other use cases in the Big Data Analytics Guidebook (GB979A) to improve customer profiles.

BONC estimates that risks in platform development and usage were reduced by at least 20 percent and integration risks by 25 percent by using the Frameworx customer management information model and referring to a standard interface and information model.
In order to transform from a service provider focused on network resources to one focused on customer centricity, a Tier 1 Chinese service provider launched its big data center in 2014 leveraging the Huawei Universe Solution.

The new big data center has measurably improved customer experience. The service provider’s previously varied customer engagement interfaces are now integrated into a single unified customer care handling platform, which increased the customer handling rate by 7 percent and lowered the average time for handling a single customer call by 11 percent. This has led to better experiences for customers, with the monthly average for complaints decreasing by 30 percent after a half year rollout.

The service provider is also now able to develop and deploy new products, services and applications more quickly. The time needed for precise product design based on automatic group feature identification has been cut in half, and new services like 4G user promotion can be conducted with the customized marketing capabilities, which has increased effectiveness by 140 percent.

New applications like store siting and customized ads are ready to be launched, expanding the service provider’s business to vertical areas. With the big data center, the company can move its business to the next level, delivering government and enterprise cloud services, e-commerce and other new services.

Use of TM Forum’s Frameworx suite of standards-based tools and best practices has played a critical role in the development and implementation of Huawei’s Universe Solution. For example, Huawei puts to use the 51 big data analytics use cases contained in the TM Forum Big Data Analytics Guidebook in the solution and also has used the templates to develop 176 new use cases from three business perspectives: operation and support; customer and market; innovation and growth.

The Universe Solution’s Data Framework references the Information Framework (SID) to build its seven major business domains, 23 entities and 153 structured data models. This forms an entity-centric unified model framework, which reduces the workload for data modeling and efficiently supports product performance.

Finally, the Big Data Analytics Guidebook provides a baseline for building application scenarios, and it empowers the Universe Solution to integrate big data analytics into an operator’s core business processes.

IBM’s Web Self Service Portal is helping Idea Cellular, India’s third-largest integrated communications operator, improve customer experience as part of an overall digital transformation.

Idea Cellular is using the portal as part of its Web Self Care Project to empower customers by making real-time account information available and providing online access to all services. The portal also empowers the service provider’s marketing team with a completely new channel of revenue generation through launch of new product offerings and segmented offers, which customers can access online.

Idea has been able to launch 600 new plans, special tariff packs, Internet data packs, telephony features and value-added services (VAS) options made available to customers for instant activation or deactivation. During the past eight months, the company has generated about $53 million in revenue through postpaid payments, $17 million through prepaid recharges and $1.5 million through additional revenue streams (for example, VAS activations and deposit collections) created through the launch of the project.

The project has also increased customer traffic on the Idea website by 25 to 30 percent, with now close to 35 million page views monthly on the site. There is further potential to reduce operational expenditure by half a million dollars due to shifting customer service requests from other channels and savings on commissions given to agents.

The self-service layer that IBM designed for the project is exposed to different customer channels like kiosks, mobile apps, SMS, integrated voice response and unstructured supplementary service data, which provides a uniform customer experience across channels and provides new channels for revenue generation. Now virtually all customer relationship management details are available to customers to manage their own accounts seamlessly over the web.

Use of TM Forum’s Frameworx Business Process Framework, Lifecycle Model (GB926C) and Lifecycle Metrics Standard helped IBM develop the list of key business processes that its Web Self Service Portal needed to support. This also cut in half the time and effort required from project initiation to finalizing scope when compared to development without standards and best practices.

The IBM team provided consulting and end-to-end delivery of the project, which included the launch of a completely new prepaid self-care portal for Idea’s 150 million subscribers, along with revamping the postpaid portal, which serves close to 7 million customers. The technical solution involved highly complex integration with nearly 24 back-end systems. IBM delivered the project, including full integration with the back-end systems, within six months using an agile work methodology.
In today’s highly competitive environment, communications service providers must transform their service provisioning models to become more customer-centric. NetCracker Technology, based in Waltham, Mass., provides customer management solutions to ensure a consistent customer experience across all touchpoints and put the customer at the center by providing capabilities for end-to-end customer care and loyalty management as well as personalized self-service.

A US cable provider serving residential and business customers, wanted to bring its residential services to the next level with more flexible service bundles and expand its business-to-business service portfolio. This change to a more customer-centric approach required complex and flexible rating and billing capabilities. NetCracker implemented a next-generation revenue management solution in less than ten months, extending the operator’s customer care and billing system with innovative service-agnostic rating and billing capabilities.

For a North American Tier 1 provider, NetCracker helped rearrange its provisioning and fulfillment process and bring innovative improvements to the customer-facing layer. The operator implemented a self-service portal to deliver better customer interactions and reduce costs, and built a fully automated provisioning system over the new infrastructure. These innovations accelerated the entire order-to-activate process to improve service experience and increase customer acquisition rates.

In all its solutions, NetCracker strives to incorporate TM Forum standards and frameworks because they facilitate control over the whole deployment and implementation process in terms of time and cost. NetCracker has been actively involved with TM Forum as a key partner and contributor for more than ten years.

The company has achieved TM Forum Frameworx Conformance Certification for its TOMS Suite Release 8.2 in the Business Process Framework (eTOM), Frameworx 10 and the Information Framework (SID).

More specifically, the use of the Application Framework (TAM) helps optimize the time required for architecture engineering (including integration time) – lowering it by 2.6 times – thanks to the common customer-supplier language. It also helps accelerate decommissioning of legacy systems by almost three times compared to estimates without the use of the framework.

In addition, the Business Process Framework (eTOM) allows for business process mapping to be completed approximately three times faster compared to non-standards-based approaches. This not only helps save implementation time, but also gives a solid basis for end-state definition and testing.

Oracle’s strategy is to commit to alignment and, where applicable, conformance to TM Forum standards. The goal continues to be one of adoption, high-level interoperability so that communications service providers can reduce risk and cost of implementation. The company also seeks to demonstrate leadership in evolving standards by leading key programs within the Forum and heavily contributing to others.

Oracle CX is designed to deliver benefits to communications service providers across all stages of the customer lifecycle through one or a combination of solutions areas including:

- Cross Channel Commerce
- Cross Channel Customer Service
- Corporate Sales Optimization
- Corporate e-Enablement
- Rapid Offer Design and Order Delivery
- Customer Insight Analytics.

Each of the areas is specifically targeted across buying, sharing or using lifecycle phases as defined in the TM Forum Customer Experience Management Solution Suite, specifically in the Lifecycle Model.

Using Oracle CX, Vodafone New Zealand achieved 27 percent deflection from assisted to unassisted channels, which led to reduction in annual costs of approximately $1 million. The solution supports retail/sales, care, digital and marketing, and key functionality delivered includes knowledge, incident and workflow management, sales support, and email management.

Mobile operator Telekom Deutschland, a subsidiary of Deutsche Telekom, was able to reduce calls to its contact center 20 percent by empowering customers with a self-care solution that allows them to activate service plans, order devices, track assets and orders, and access product and account information. Customer satisfaction has increased with response times that are 10 percent faster. System availability has increased by 25 percent, and there has been a 10 percent drop in IT administration costs and revenue increases in millions of euros thanks to 24-hour, continuous operations several days a week.

Similarly, a Tier 1 wireless operator in Southeast Asia used Oracle CX to transform sales and service functions, delivering an integrated channel experience across direct (online, retail, contact center) and indirect (dealers, partners) channels. Results included completing more than 90 percent of postpaid orders with zero touch in less than two minutes – a three-fold reduction in registration time, which has led to improvement of overall customer satisfaction and lower operational costs. The service provider has since improved its customer-satisfaction ranking to the number-one slot across all wireless operators in the region.

Oracle’s approach to TM Forum adoption is characterized by the continued commitment to alignment and, where applicable, conformance to TM Forum standards. The goal continues to be one of adoption, high-level interoperability so that communications service providers can reduce risk and cost of implementation. The company also seeks to demonstrate leadership in evolving standards by leading key programs within the Forum and heavily contributing to others.
Redknee’s converged billing and customer care solution is supporting Digicel, a global communications provider with operations in the Caribbean, Central America and Asia Pacific, to address the full range of the company’s billing requirements from a centralized platform. Today, with Redknee’s support, Digicel is offering prepaid electricity to residents and business owners in Papua New Guinea.

Digicel uses Redknee’s converged solution and SMS gateway to deliver its Easipawa (Easypay) prepaid electricity metering service, which enables customers to purchase electricity at any time directly from their mobile phone. Energy customers simply enter their meter number and the required amount of electricity. They receive an SMS message confirmation, and the payment is deducted directly from their airtime balance. Digicel’s postpaid customers can also utilize the prepaid electricity service, in which case the purchased amount of energy is added to the monthly bill.

Redknee’s converged billing and customer care solution goes beyond traditional billing and works as a merchandising platform that optimizes and improves the overall subscriber service experience, enabling operators to manage partner relationships, quickly roll out new services, and deliver targeted, real-time promotions to generate additional revenue from subscribers.

Built in accordance with TM Forum’s Frameworx suite of standards-based tools and best practices, Redknee’s solution recognizes that convergent services are a complex process. The solution concentrates on delivering a truly converged and open architecture-based solution that allows service providers to easily access information from across a variety of sources.

Redknee’s real-time rating and charging capabilities enable service providers to process all payment types including prepaid, postpaid and hybrid accounts. The solution can be deployed as a fully hosted cloud-based, software-as-a-service solution, meaning there is no need to rely on the expertise of in-house staff from network and IT to manage upgrades and on-going support of the system. It allows the service provider to focus more on its core business, resulting in improved products and services and better subscriber lifecycle management.

By utilizing Redknee’s converged solution, Digicel has the capability and agility to efficiently manage subscribers and service revenue. Also, by consolidating the billing functions onto a core platform and managing its multiple operations from one base, the company is able to control costs and achieve operational and capital savings.
In 2006, a BearingPoint client asked Infonova to add online, real-time product management and multi-tenancy to its BSS solution. This resulted in the creation of Infonova R6 being built as JavaEE software that directly leveraged TM Forum’s Frameworx standards and artifacts.

The speed, flexibility and agility advantages of R6 for B2B2X service bundling have been well proven, in live deployments and TM Forum Catalyst projects, since 2008. R6 has been regularly used to define, bundle, sell, bill and collect multi-service deployments in telco, TV, utilities, smart grid, smart city, banking, mobile payments, entertainment, road tolling, pharmaceuticals and connected car, and other sectors.

The BSS platform R6 is certified by TM Forum as being Frameworx-conformant and provides a full business lifecycle, end-to-end multi-tenant capability. It enables different tenant organizations to run their own operations on the platform simultaneously.

Each tenant has its own use of R6 product management, customer management, order management, billing and accounts receivables as well as the opportunity to partner, bundle and monetize other tenant services in an ecosystem approach enabling an array of B2B2X business models.

In 2010 BT’s cloud research leveraged R6 in various trials including TM Forum innovation Catalyst projects: Cloud Service Broker (2010), Richer Services Richer Ecosystems (2013) and Smart Cities with MK:Smart (2015).

In Jan 2015 BT and BearingPoint announced that BT Compute had incorporated the R6 platform within its existing cloud service and to support third party compute offerings.

In a collaborative program between BT, BearingPoint and Infonova, the R6 platform has been used to enhance BT’s data center co-location and cloud services portfolio which include storage offerings as well as software applications from third parties, across multiple countries, with the appropriate language and currency.

BT’s Cloud Compute helps CIOs build powerful ‘pay as you go’ cloud solutions with high levels of security, quality and service delivered from BT. It is available in 20 sites across five continents and is used by multinational companies from a variety of industry sectors. By using BT’s advanced cloud orchestration of infrastructure, network, applications and services, customers can align costs directly to their business needs.

The R6 platform enables BT to seamlessly on-board and aggregate new cloud services and software applications so that they can be offered as new products and services to customers who can exploit the full benefits of cloud and digital transformation.

R6 also enables BT to provide white-label facilities to third parties that are seeking to sell their own cloud and application services. It enables them to offer and monetize their services as bundles in combination with BT and other third-party services.
DGIT Systems’ Telflow software allows service providers to rapidly create new products by combining resources from their internal network and systems with partners’ resources. Partners can simply ‘plug in’ and set up their configurations using ‘drag and drop’. This is possible because in Telflow, products, services, resources, partner resources, order types, offers and Business Process Model and Notation 2.0 processes are all pre-configured. All of the products, services and resources, including their respective processes for management, are then available for re-use within the platform. This level of configurability for product and partner integration is key to Telflow’s success, enabled by the architecture being based on TM Forum’s Frameworx suite of standardized tools and best practices.

Telflow was launched in 2014 with impressive results. First-hand experience by a government-owned network operator in the Asia-Pacific region has seen new product creation times shrink by more than 90 percent. In terms of risk reduction, the rapid implementation supported by Telflow has allowed a Tier 1 New Zealand carrier to quickly prototype a product previously seen as “too complex to deliver” for business customers. As the ability to deliver was proven upfront, the project could proceed.

The New Zealand operator’s entire wholesale order management, customer portal and partner integration solution was implemented using Telflow within five months, without incurring capital expenditure while reducing operating expenditure by 50 percent when measured against legacy systems.

Telflow has implemented and contributed to best practices regarding the use of TM Forum’s Information Framework’s (SID) metadata patterns to govern name value pairs. Telflow allows new products to be designed and tested in hours using visual tools to edit Information Framework specifications.

DGIT’s extension of the Information Framework is being added to it, including for the Forum’s network functions virtualization (NFV) initiative, ZOOM.

For ZOOM, the specifications and policies are visually edited within Telflow and used to provide governance of the configurable elements within the Telflow system and as metadata to govern message payloads when TM Forum’s dynamic application program interfaces are used. Other TM Forum assets used by Telflow include:

- the Information Framework in a wider context than the meta-data patterns;
- the Business Process Framework (eTOM) including the technical report on touchpoints;
- The Business Partnering Guide (B2B2X), specifically the Product Definition Specification (using Information Framework patterns);
- Product Ordering REST Specification from the Integration Framework; and
- Catalog Management.

Huawei Technologies Co., Ltd.

Huawei is committed to creating maximum value for telecom carriers, enterprises and consumers. Through dedication to customer-centric innovation and strong partnerships, the company has established end-to-end capabilities and strengths across the carrier networks, enterprise, consumer, and cloud computing fields. Its products and solutions have been deployed in over 170 countries and regions, serving more than one third of the world’s population.

Huawei Digital inCloud is an end-to-end ICT solution that enables operators to build and monetize a digital ecosystem, helping them to increase their revenue. It enables service innovation by expanding digital services into new domains that serve Individuals and new businesses, ranging from the digital home to enterprise and industry. The solution is based on software-defined architecture to provide a unified open digital platform to support agile innovation for applications.

Operators can aggregate and distribute ready-to-go global digital services and content from partners, from various domains, and optimize digital business operations, like e-commerce, in the cloud. This reduces time to market and fosters innovative, win-win business models for partnerships, based on sharing risk and reward.

Huawei Digital inCloud solution has a proven track record in helping mobile operators to increase digital service revenue and the odds of succeeding in digital service transformation. Huawei Digital inCloud leverages the TM Forum Frameworx suite in the following ways:

- The Business Process Framework (eTOM) forms the basis for the business processes. In particular, it deploys key process elements, such as engaged party, product, service and resources. Vertical and horizontal process groupings were used to define the architecture’s design parameters, while the Framework’s multi-level hierarchy enabled a holistic view of processes.
- The Information Framework (SID) is utilized for planning data domains and defining aggregated business entities, resulting in a high degree of simplification of interfacing data models across various solution activities.
- The solution’s application system is designed in line with the Application Framework’s (TAM) principles, as a multi-level hierarchy of applications with clearly defined functions and boundaries.
- The solutions aligns with all three layers of Digital Services Reference Architecture; for example, service exposure is a key component of the solution, along with the API Service Broker.

Huawei participated in the Digital Transformation: Operations Perspective zone at TM Forum Live! in Nice in 2014 through its contribution to Catalyst Big data, big profits: Harnessing the power of analytics. At the same event, it took part in the Virtualize Everything zone and as part of the Cloud/NFV: Dynamic, data-driven management and operations Catalyst team, won an award for being the most innovative project.
TM Forum’s Frameworx suite is used to develop Tech Mahindra’s Wellness as a Service cloud platform, which offers real-time health monitoring services to patients. This Internet of Things platform supports a variety of remote health monitoring devices, collecting and sending the health parameters to the server.

TM Forum’s standards and best practices helped the company to achieve many direct benefits, including to improve clarity between supplier and customer, through the Forum’s customer experience models and best practices. The services are offered on a no-delay basis to meet customers’ expectations.

TM Forum’s cloud management best practices helped Tech Mahindra define the scope and focus on the technology parts of the solution, but rapid time to market was a real challenge. The complete solution as a service depended on large scale development of various frameworks for other essential components beyond technology – from engineering around customer experience to cloud management – and there was a significant risk of delay.

Here Tech Mahindra leveraged TM Forum’s assets, using ready-to-use frameworks and guidelines to reduce the risk of delay and instability: The company achieved a 30 to 35 percent reduction in development time overall.

Models and best practices for customer experience and cloud management helped cut implementation time by between 30 and 40 percent, on average. The management or cloud services part was drawn from TM Forum’s standards and used without modification.

Tech Mahindra Limited is an Indian multinational provider of information technology, networking technology solutions and business support services to the telecommunications industry. It is a part of the Mahindra Group conglomerate.

Tech Mahindra was ranked fifth in India’s software services (IT) firms and overall 111 in Fortune’s Indian 500 list for 2012. The combined entity has 98,009 employees, as of 2014, across 51 countries, servicing 632 customers globally. It has 15 overseas offices for business process outsourcing operations and software development. Its revenue for 2012-2013 was put at $3 billion.

Three years ago Vodafone started to evolve M-Pesa into an open digital platform to provide a financial ecosystem to give the ‘unbanked’ of an emerging market broader access to financial services enjoyed by the ‘banked/affluent’ communities. At this time Vodafone M-Pesa was five years old and had been successful in Peer2Peer financial transactions – and still is.

The company wanted to enable more B2C and C2B types of interactions. It recognized that by integrating more businesses and financial institutions, it could help business to happen faster and more efficiently by enabling payments between customers and service providers.

Two years ago Vodafone M-Pesa established a program to build its next generation platform and implement a new approach to interfaces on the platform in parallel. The new interfaces are based on a secure implementation of a service-oriented architecture. They enable the company to expose any transaction-based business operation to identified businesses and financial institutions using a simple connection over the Internet.

In developing these new application program interface-based (API) services, the company followed TM Forum best practices for digital payment scenarios (B2B2X). It also took a series of the Forum’s commercial scene analysis templates and methods on digital payment and applied them to Vodafone M-Pesa’s own business scenario analysis.

The new API services are easy for third parties to integrate and now account for up to 20 percent of transaction volumes on some platforms: In Kenya alone they facilitated the acquisition of over 100,000 merchants in a year. The company is continuing this strategy to expand the scope of the Vodafone M-Pesa ecosystem with some more advanced commercial transaction templates.

Many live services across both platform generations are based on this approach such as M-Shwari, M-Pawa, Lipa Na M-Pesa, Lipa Kwa-M-Pesa and Bank2M-Pesa services with many commercial banks and more in the pipeline.

Implementing the next generation interfaces on the legacy platform has helped to drive transaction volumes by reducing the barriers to and cost of third-party integration. This has also significantly reduced the cost, risk and complexity of migration to the next generation platform.

Using these approaches helped Vodafone M-Pesa create an open, secure and trusted ecosystem where people and organizations can conduct their affairs safely, using the simplest mobile devices in some of the remotest parts of the network. M-Pesa has improved the overall level of economic activity bringing benefits to individuals and businesses alike while providing considerable revenue for network operators.
Customers using ZTE’s ZSmart Customer Care solution in smart city implementations are saving money, reducing time to market, optimizing resources and delivering better customer experience.

ZTE’s customers, which include governmental organizations developing smart cities, have been able to reduce costs by 35 percent. For example, ZSmart CC has a “one-stop service for community affairs”, which allows community service and government affairs centers to provide one-stop, 24-hour self-service to residents. In addition, governments have been able to reduce time to market by 25 percent because the system is adaptable enough to work with existing systems, which improves overall efficiency.

ZSmart CC also helps customers optimize government resources. By managing dedicated resources through a well-organized architecture and workflow, the solution can dynamically allocate resources to accommodate diversified residents’ requests.

Finally, by reusing standardized hardware through network functions virtualization, ZSmart CC provides customizable cloud computing and all-in-one functionality to integrate software and hardware flexibility. Governments using the solution have been able to save 70 percent on operations and maintenance costs by using the tools to simplify cloud computing and related IT development and management.

ZSmart CC uses many of the Frameworx suite of standards-based tools and best practices including the Business Process Framework (eTOM), the Information Framework (SID) and the Application Framework (TAM).

In developing the solution, ZTE used the Business Process Framework as a bridge between business requests and technical implementation, and to regulate all internal business processes. The Information Framework was used to define categories of Aggregated Business Entities and Attributes.

The Application Framework helped to create a common architecture for all of ZSmart CC’s applications, and it was also used to map the functions, entities and processes of a smart city to the Business Process and Information frameworks. ZTE also has used the TM Forum Big Data Analytics Guidebook in developing its products. For example, it uses big data-based prediction for community affairs management.

With operations in 160 countries, ZTE describes itself as a leader in technology innovation, delivering products and business solutions to clients all over the world. Founded in 1985, ZTE is listed on both the Hong Kong and Shenzhen Stock Exchanges.
Could you be an Excellence Awards winner in 2016?

Collaborative genius is what TM Forum is all about. The collective experience and expertise of dedicated professionals within our member organizations around the world can accelerate the progress of all our members and the wider ecosystem on our shared digital journey. The Excellence Awards are designed to showcase just how powerful collaboration can be.

We hope these brief summaries of our short-listed entries will inspire and encourage you to share your successes by entering the Awards in 2016. In line with the rapidly shifting digital market, we review the categories each year. We are particularly keen to re-establish the Digital Humanitarian Award next year, for the company showing the most innovative and impactful use of technology to save lives, alleviate suffering, and maintain and protect human dignity, for example in the aftermath of emergencies.

There’s more information about the Awards [here](#) and you can also contact Rebecca Huft, Marketing Manager – Member Engagement & Acquisition, TM Forum via [rhuft@tmforum.org](mailto:rhuft@tmforum.org). It’s never too early to start planning your entry!

Call for case studies – we need YOU!

You don’t have to wait until 2016 to share your success though.

TM Forum regularly publishes case studies on our [inform](#) channel and we also promote them in our newsletters, which go to an opted-in subscriber base of more than 100,000.

The essential ingredients of all our case studies is how the Forum’s assets and activities delivered tangible business benefits to your company. In the first instance, please contact Dawn Bushaus, Editor, TM Forum via [dbushaus@tmforum.org](mailto:dbushaus@tmforum.org) with your idea. Working closely with you, a member of the Content team develops and drafts the case study. We then provide you with the draft so that you can make any alterations or additions before sending you a final version.

We also produce a short animation and infographics to accompany the case study online, which you are free to use for whatever purposes you wish, including marketing activities and internal presentations.

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