

Customer Experience Management – Introduction and Fundamentals

GB962

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Executive Summary

As the Framework Information Framework has formed the distinction between the End User/Consumer of services and the Customer, responsible for the formal relationship with the Digital Service Provider, and as Customer Relationship Management has had Customer Experience added to the total life cycle, a Guidebook to introduce and establish fundamentals of Customer Experience Management was deemed timely.

This document is the preliminary version of that Guidebook, comprising one element of a Customer Experience Management Solution Suite. Other components of the Suite, including Business Benchmarking, Maturity Model, Training, KPIs, and extensions of the Framework business model are now coming on-line to round out the Suite.

1. Introduction

The TM Forum's technical report "Managing the Quality of Customer Experience – TR148" defines the Customer Experience as being the result of the sum of observations, perceptions, thoughts and feelings arising from interactions and relationships (direct and indirect) over an interval of time between a customer and their provider(s). The measurement of Customer Experience is based on measuring the extent to which the customer's needs are satisfied using customer/user centric measures such as:

- Would advocate (e.g. churn and loyalty indicators)
- Would recommend (e.g. Net Promoter Score)
- Would Buy again
- Product availability
- Product usability

The Communications Industry has recognised the need for managing the customer experience for a long time; indeed the TM Forum published one of its first guide books on the subject, [GB923](#) the Wireless Services Handbook, way back in 2004. The Telecom Operation Map (TOM) and the later Business Process Framework (eTOM - GB921) have also included process models supporting Customer Management for many years. This work has been followed by a number of other TM Forum initiatives which have strengthened the understanding of this complex subject. Despite the industry's obvious interest in Customer Experience Management (CEM) it is only in recent years that we have seen a real move towards establishing CEM in the Service Providers organisations.

The reasons for this slow take-up are many fold but are often founded in the traditional way in which we have managed our services in the past i.e. focussed on managing the technology that delivers the service rather than on managing the customer experience. While this 'bottom up' approach may have worked for technical services where all of the service components i.e. resource facing services, were managed internally, the model does not work today with a wide range of customer facing services many of which are dependent on service components from partners and third party suppliers. We will explore the new operating model in more detail in the following sections.

It is also true to say that the customers' expectations have changed in recent years as they gain a greater maturity in understanding what they want from their service providers ... not just in terms of the quality of the technical services but their whole experience 'soup to nuts'. Today, therefore, Service Providers have become very conscious that while they may have gone some way to monitor their customers' experience, it is not enough and they have to be much more **proactive** in ensuring that the level of service has to be managed throughout the customer lifecycle.

2. A Short History

If we go back to the time when most countries had only one service provider and customers had no choice of who they used to deliver their services, the concept of managing customer satisfaction didn't really exist in any tangible form. At the same time the portfolio of services or products available to the consumer were very limited and entirely dependent on resource facing services managed by the provider themselves.

Consequently the need for CEM did not really raise its head until governments around the world started to remove the monopoly held by the incumbent providers and slowly the consumer was presented with choice. The smarter providers began to realise that customer satisfaction was important in order to encourage consumers to move to them and to discourage its existing customers to look elsewhere.



Figure 1 - CEM and CRM

In these early days the main changes were on the internally focussed Customer Relationship Management (CRM) rather than externally focused CEM. While CRM went some way to improving the relationship with the customer, the approach was very internally focussed looking at developing the appropriate processes, systems and skills to manage the relationship with the customer. This certainly improved the customer experience but it was an inside looking out strategy rather than outside looking in. It enabled the service provider to assess how well their services, people and processes were performing, not whether they were meeting the customer expectations. For example, providers measured the average time to answer a call to the customer help desk and measured success against an internally set target representing what the business felt was acceptable but did not necessarily meet the customers' expectations. So while development in CRM helped improve the customer satisfaction it did not go far enough.

A common misconception in the industry is that CEM is a replacement for CRM which simply is not correct. A successful transformation into the CEM world can only be achieved by building on top of good CRM processes and practices. CEM takes us a step closer to achieving improved customer satisfaction. Instead of asking the question, "This is what we are doing, how well are we doing?" which is a CRM approach, CEM asks, "What is important to you, and how well are we doing?" CEM is aimed at turning customers into fans by seeing the world through their own eyes

As we will see in this document, implementing CEM has a wide impact on the service provider's organisation. Whereas CRM was largely centred on the operations groups

within an organisation, CEM must be implemented across the entire organisation and cannot be implemented solely through processes and systems. It must become a key part of the service provider's culture.

In their article "[Understanding Customer Experience](#)" (*Harvard Business Review*, February 2007) Christopher Meyer and Andre Schwager prepared a useful table contrasting the two strategies.

	CEM	CRM
What	Captures and distributes what a customer thinks about a company	Captures and distributes what a company knows about a customer
When	At points of customer interaction: "touch points"	After there is a record of a customer interaction
How Monitored	Surveys, targeted studies, observational studies, "voice of customer" research	Point-of-sales data, market research, web site click-through, automated tracking of sales
Who Uses the Information	Business or functional leaders, in order to create fulfillable expectations and better experiences with products and services	Customer-facing groups such as sales, marketing, field service, and customer service, in order to drive more efficient and effective execution
Relevance to Future Performance	Leading: Locates places to add offerings in the gap between expectations and experience	Lagging: Drives cross selling by bundling products in demand with ones that aren't

While this article only goes part of the way to establishing the key differences between CEM and CRM, it does underline the fundamental principle that CEM drives a proactive approach to managing the customer, while CRM is a measurement of what has happened in the past.

This leads us to where we are today with a rapidly increasing movement towards delivering services whose functionality and performance are underpinned by a good understanding of what the customer expects.

3. Why is CEM important

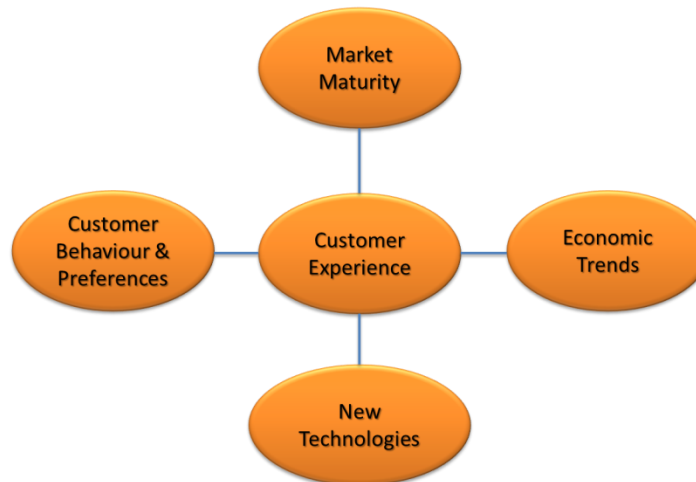


Figure 2 – Why CEM now?

(TM Forum Training - Customer Experience Management Distilled)

As the industry moves into a growing market of digital services built on infrastructures that enable fast development and deployment of new services, the service portfolio itself is not sufficient to establish a lasting differential in the market place. Such a differential is quickly eroded by competitive service providers. Having tried to differentiate through technology and 'clever' pricing models and found the strategy to be short lived, service providers are realising that a more solid differentiation can be gained through managing the customer experience. This does not just mean delivering service that meets the customers' expectations but that all aspects of its business must support the concept of a superior customer experience.

As we can see from the diagram ahead, there are a number of reasons why the market is ready to encourage service providers to introduce CEM programs.

Including:

- Market Maturity - Maturing traditional service markets change the nature of competition
- Economic Trends - Economic trends impact customer spending and service provider investments
- New Technologies - New capabilities drive new services and the potential for better customer experience
- Customer Behaviour & Preferences - Changes in behavior create new risks & opportunities

Whilst not the only factor in managing the customer experience, delivering good service quality is still a corner stone to achieving customer satisfaction. However, this in itself has become more demanding as the rapid increase in digital services has brought with it ever increasingly complex value chains an example of which is shown in the following diagram.

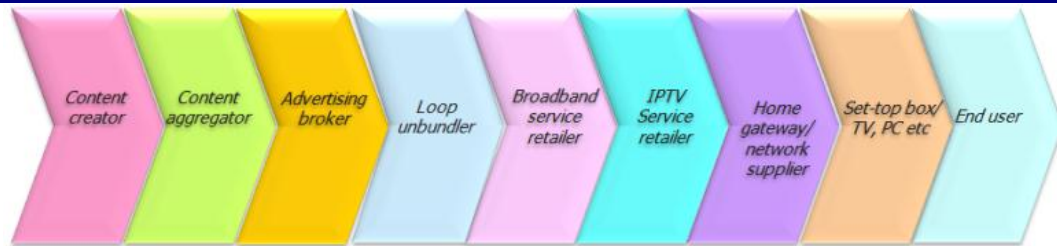


Figure 3 - TM Forum Holistic e2e Customer Experience Framework (TR149)

The implications of these value chains is that the service provider is no longer in control of all of the components that make up the end to end service delivery. Managing service quality through the management technology is not sufficient to guarantee service quality. Indeed in some cases the service provider is no longer responsible for managing any of the service chain components. They do however still own the relationship with the consumer and it is to the service provider that the consumer will turn to if they are not happy with the service quality they are receiving. The way in which the service quality has to be managed must therefore change by ensuring that all parties in the value chain are committed to delivering the quality that the consumer expects. This must include the establishment of clear objectives defined in formal service level agreements between all parties. This will be discussed in more detail later in this document.

To talk of improving the customer experience is in itself fairly meaningless without asking 'why?' and while we may speak of CEM and CRM as being key strategies to achieve better customer satisfaction it is important to remember that the overarching objective is to achieve improved profitability. While this may seem obvious there is a cost to delivering a good customer experience and that cost must be considered as part of implementing a CEM program. Delivering a high quality of service is often not difficult but delivering it in a cost effective way that supports higher profitability can be more demanding.

The [TM Forum Insights Research - Customer experience in a connected world \(Sept 2011\)](#) reported that "service providers seeking to increase profitability, are turning to initiatives in customer experience to differentiate themselves. This is not happening by accident or coincidence; service providers are realising the connection between customer experience and profitability". The survey of 20 service providers carried out by the TM Forum to identify the key drivers for implementing CEM programs is shown in the following chart:

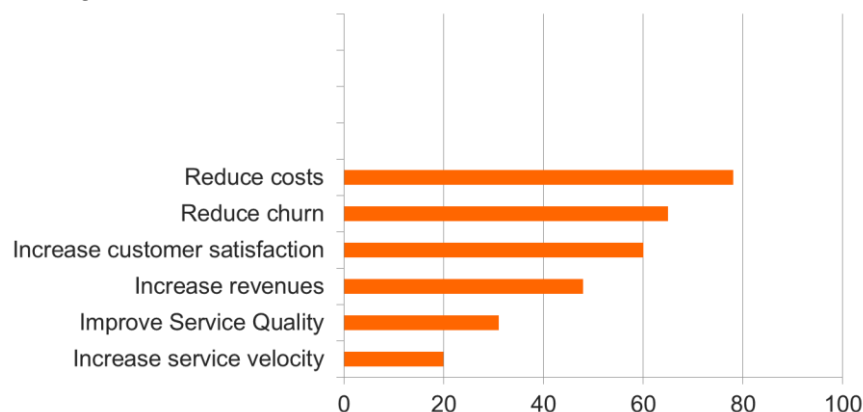


Figure 4 - Key drivers for implementing CEM programs

From this survey we can see that the top two drivers are to reduce costs and to reduce churn. While there are many ways to reduce costs of which CEM is just one approach, reducing churn is heavily dependent on improving the customer experience. It is also important to remember that good customer experience is not just dependent on the quality of service that the service provider delivers but on their total experience which has much wider implications as we will see later in this document. While we have traditionally measured customer satisfaction based on their experience of using the services, the customer's journey actually starts before they subscribe. One of the key drivers to encourage a customer to subscribe often starts with the brand value of the service provider and how that brand and the service offerings are marketed and presented to the potential customer. It is therefore critical that CEM is applied across the whole of the customer's journey.

If proof were needed that the customer experience is much wider and complex than just the service quality we only need to look at a Customer Satisfaction survey of U.K. Cellular Service Providers carried by J.D. Power and Associates. The outcome of the survey showed that service provider that came top of the ranking was a Mobile Virtual Network Operator (MVNO) who resold the network services of the service provider that came last in the survey. Interestingly the top service provider scored higher on technical aspects of its services e.g. coverage, than its network provider. So we can see that customer satisfaction is a complex subject and as already mentioned CEM must be embedded in the culture of the service provider if it is to succeed.

4. The Roadmap for Developing CEM

Delivering an effective Customer Experience Management requires a coordinated program across the entire organisation and is best achieved by adopting a maturity framework similar to the Capability Maturity Model Integration (CMMI) framework. CMMI is a proven process improvement approach whose goal is to help organizations improve their performance. CMMI can be used to guide process improvement across a project, a division, or an entire organization.

Characteristics of the Maturity levels

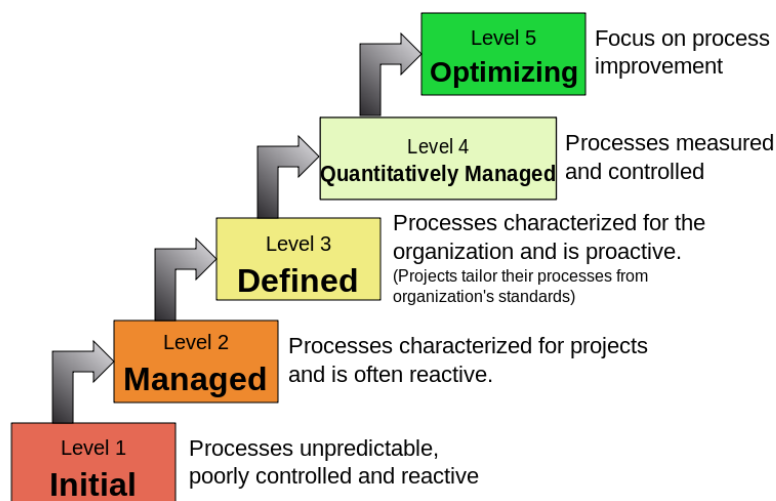


Figure 5 - Capability Maturity Model Integration (CMMI)

The starting point for the maturity model is for the organization to agree that it has a problem and to get support across the appropriate parts of the organization to establish a working program to address the issues. The model then introduces a number of phases to achieve the goal of implementing the program through to developing continuous improvement process to continue to tune and optimize the business processes, systems etc.

Following on from its very successful [Revenue Assurance maturity model](#), the TM Forum is developing a maturity model for the implementation of CEM. As shown below, this model follows the CMMI model very closely starting from level 1 with little or no activity in an organization in the area of CEM. The CEM model, as with CMMI, is a five stage model that guides the service provider on a journey to a fully implemented and controlled CEM environment. A detailed analysis of this maturity model is beyond the scope of this introductory document, however, further information is available on the [Customer Experience Community site](#).

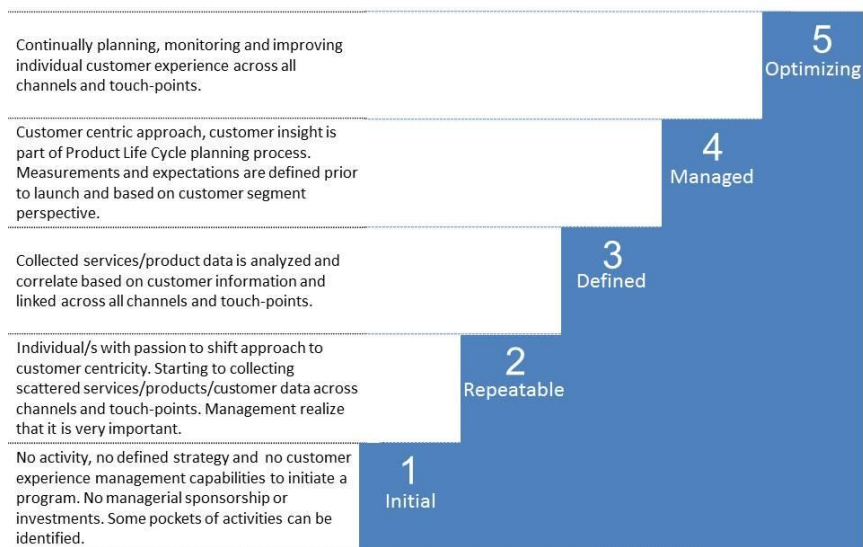


Figure 6 - TM Forum Managing Customer Experience Project Maturity Model

As with any major program of this nature a maturity model can only act as a framework and guide and cannot provide the solution itself. The model does however provide a high level roadmap that provides the user with some clear milestones against which they can measure progress and to compare their advancement with their peers.

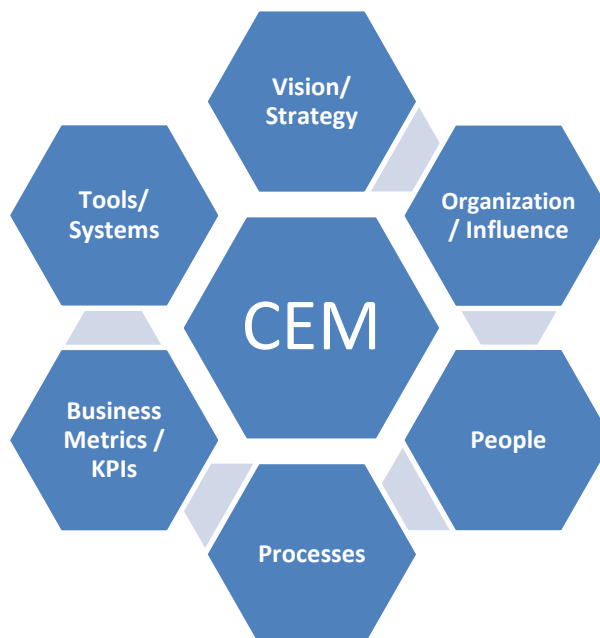


Figure 7 - The six key CEM program components

When developing the CEM roadmap there are four key areas that must be addressed. These, as shown in the diagram above are:

❖ **Vision/Strategy**

A measure of the degree to which there exists a Customer Experience Management theme in the enterprise strategy and of its effective integration

with the other elements of strategy. A measure of the clarity of communication and consistency of actual behavior by the senior management with respect to Customer Experience Management, related to many of the dimensions listed above.

❖ **Organization/Influence**

A measure of the degree of focus of organizations on Customer Experience Management and the degree of cross-organizational coordination toward effective results. This includes aspects of governance and management as applied to Customer Experience Management

❖ **People** (employees, suppliers and partners) -

A measure of the degree of development of awareness, skills, knowledge, and performance of those delivering value to the Customer.

The program must take into consideration the journeys people will need to travel to evolve the working practices, environments and mind-sets that the members of the organisation in order to transform the organisation into a customer centric company. This part of the program must not be underestimated as it may well turn out to be the most difficult to achieve especially for organisations and functions that have historically been very technology focussed. It can be very difficult for some members of staff to make this transition and the reality is that some will not be able to complete the journey and any program must allow for this reality

❖ **Processes**

A measure of the degree to which there exists a process-centric approach to Customer Experience Management and the effectiveness of the processes in place.

In many ways implementing the new processes necessary to support CEM is likely to be the easiest part of the program especially if the organisation has a process culture and its current processes are well documented. Key to implementing the new process model is to be brave but be sensible. Be brave enough to do away with processes that do not support the CEM way of working. The answer to 'why do we need to change, we have always done it this way and it has been o.k. so far' should not be acceptable. It is because it has always been done that way is exactly why it has to change if the company is to refocus on the consumer. Having said 'be brave' it is also advisable to be sensible. Change for the sake of change is always hard to sell and where processes are fit for purpose then they should be left in place.

Fortunately there is help at hand when developing new processes with tried and tested models and frameworks available today. These include the TM Forum Business Process Framework and the ITIL model.

❖ **Business Metrics / KPIs**

A measure of the adoption/use of a system of enterprise-level measures, or operations-level measures, or both, which are related to Customer Experience Management.

❖ **Tools/Systems**

A measure of the intensity of use of business management IT systems in support of Customer Experience Management.

Having the right tools and OSS / BSS environments in place to support CEM is absolutely critical to achieving the end goal. Establishing an early dialogue with tools suppliers (internal and external) has to be a priority in the early days

of the program if for no other reason than the lead times for delivering and integrating the necessary solutions. It is quite probable that this part of the program is the most likely to cause delays and the timing is critical. Having the people in place to support CEM but unable to make the transition due to the lack of a supporting tools environment will lead to frustration and will feed the 'naysayers' with ammunition to criticize the program.

Developing the tools environment is likely to be costly so it is important to establish the budget to support this work early on in the project. This will usually mean developing a solid business case for implementing CEM and to get commitment from key stakeholders and budget holders (see vision and strategy).

5. Customer Centric Processes

The communications industry has recognised the need and has been developing customer centric processes for some time and some service providers are quite advanced in this area. Indeed the TM Forum led the way some years back in developing a framework for measuring customer satisfaction. The following diagram was developed from a piece of work submitted to the TM Forum by O2 (now Telefonica UK) and further developed by the Forum's Business Metrics program. It shows how a service provider must understand the interactions with the customer both from an internal perspective and from the customers throughout the Customer Lifecycle. At the time of the initial contribution, the approach pushed the boundaries of customer relationship management by extending the boundaries from what was, at the time, the norm of only managing the in-life experience to the very start of the interaction ... pre-sales. This framework has been widely adopted by the industry but does it go far enough?

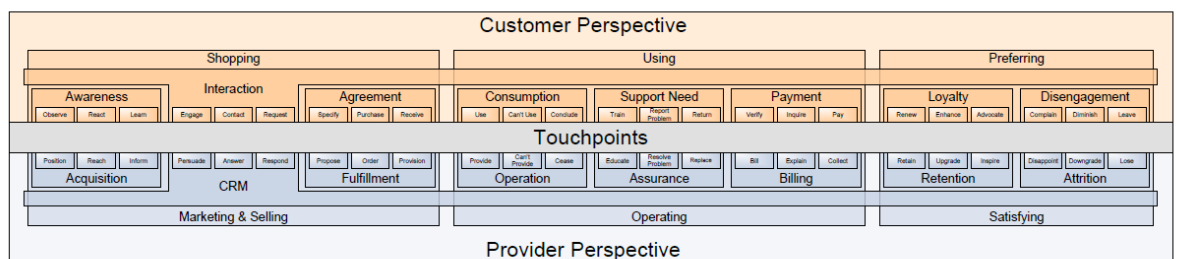


Figure 8 - The Customer Lifecycle

The problem with this framework is that it still only really engages with the customer when the service provider is ready to market and sell the service. There may be some engagement to judge the market readiness for a new service but rarely is there any interaction with the end user during the design and development of the service or product. The TM Forum 'Holistic e2e Customer Experience Framework (TR148 and TR149)' has built upon this model and goes into much greater detail of how CEM must embrace the end to end lifecycle of the customer's experience. Simplistically the lifecycle is shown in the following diagram.



Figure 9 - The Customer Experience Lifecycle (TR149)

Even this very comprehensive piece of work does not go far enough and the next stage must extend the engagement with the user to start at the service design stage. Some forward looking service providers have developed customer centric design processes that include working with users in the early stages of service development to ensure that the service functionality expectations of the user are clearly understood and designed in. The risk of delivering a new service that does not meet the consumers' expectations is therefore minimised and while there may be some

additional time and cost in the early phases of service delivery, service providers using this approach are finding that the costs are rewarded many fold in the long term.

The next generation of CEM is therefore more accurately described in the following diagram with 'Design' as the beginning of the process; no longer acquisition. Another way to look at the 'Design' is as a first and curtail part of the product life cycle management (PLM).



Figure 10 - The Extended Customer Experience Lifecycle

A detailed analysis of the full CEM process or processes is outside the scope of this introductory document but could be summarised by the Business Process Framework diagram shown below. In a nutshell, CEM touches on many of the processes in the framework from Strategy to Billing and from Supply Chain to Customer Relationship Management.

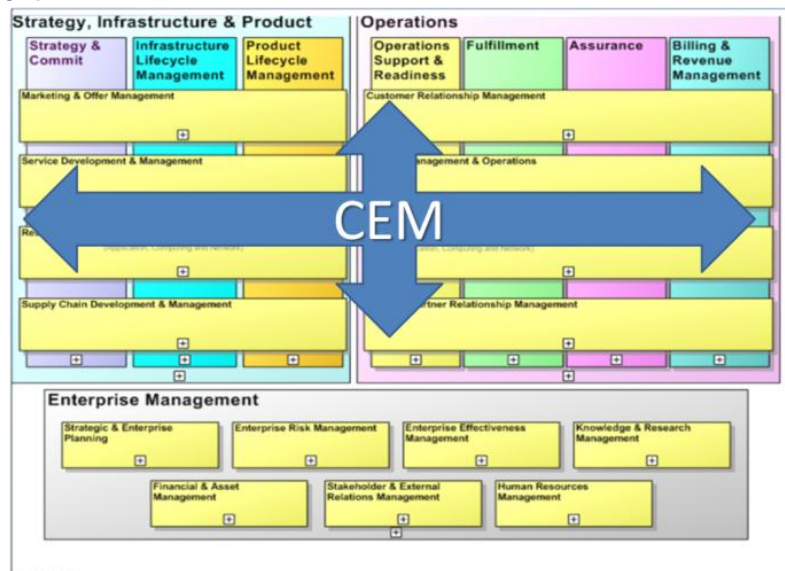


Figure 11 - TM Forum Business Process Framework (GB921)

As more and more providers realise the benefits of a fully embracing CEM environment, so we will see a growth in the adoption of frameworks such as the TM Forum's Business Process Framework. Much of the framework exists today and will be strengthened by wider adoption as is inevitable. For a provider to develop their own process framework will prove not only costly but will lead to delays in achieving the all-important market differentiation through improved customer experience. As mentioned earlier CEM is more than just good processes and there is plenty of scope to establish differentiation while adopting a common process framework.

It is not just the service functionality that must embrace the customers' expectations from the early design phases. The performance characteristics of the service must also meet the consumers' expectations. As we will discuss in the next section, good Service Level Agreement (SLA) management is a corner stone to managing service quality especially in the highly distributed service delivery structures of the modern

digital services. The following diagram taken from the TM Forum's SLA Handbook (GB917) shows how the development of the various forms of SLA spans the various domains of the Business Process Framework, from strategy to in-life management and service retirement.

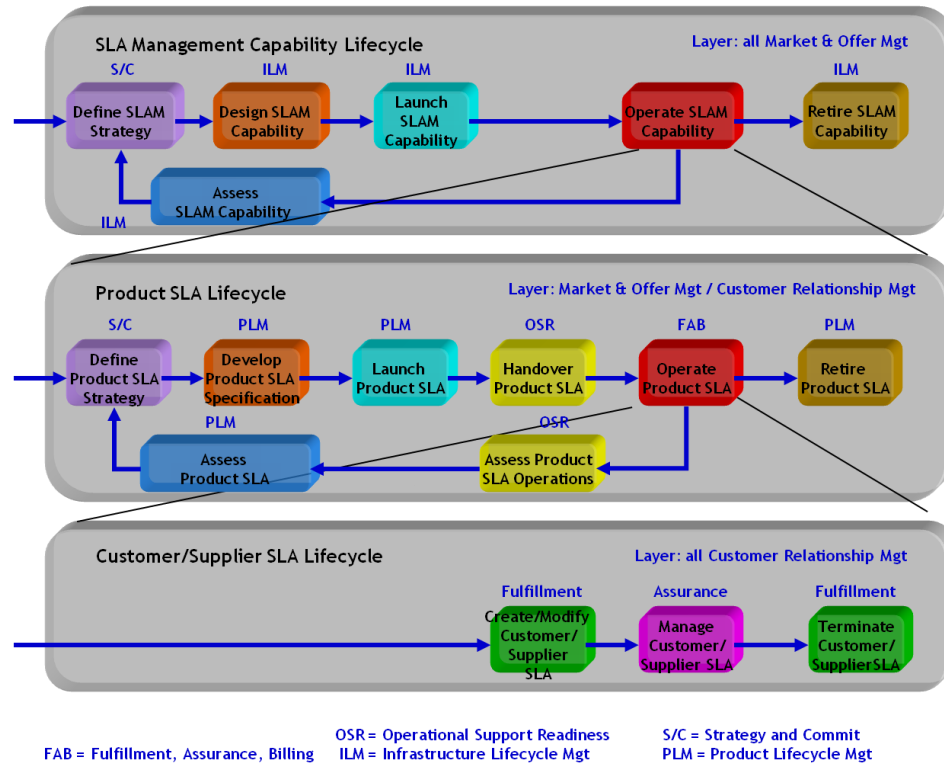


Figure 12 - SLA Lifecycle (GB917)

A full description of this process flow is documented in the TM Forum [SLA Management Handbook \(GB917\)](#)

6. How to do we measure and manage the Customer Experience?

As we have already mentioned the starting point for measuring and managing the customer experience is to understand what is important to the consumer. Too often in the past the provider has set the service operations objectives based on what they believe to be important to the consumer. Unfortunately these objectives have often been influenced or set by technologists and have been based on the performance of the technology components of the service delivery and the functions within the organisation responsible for delivering against those targets.

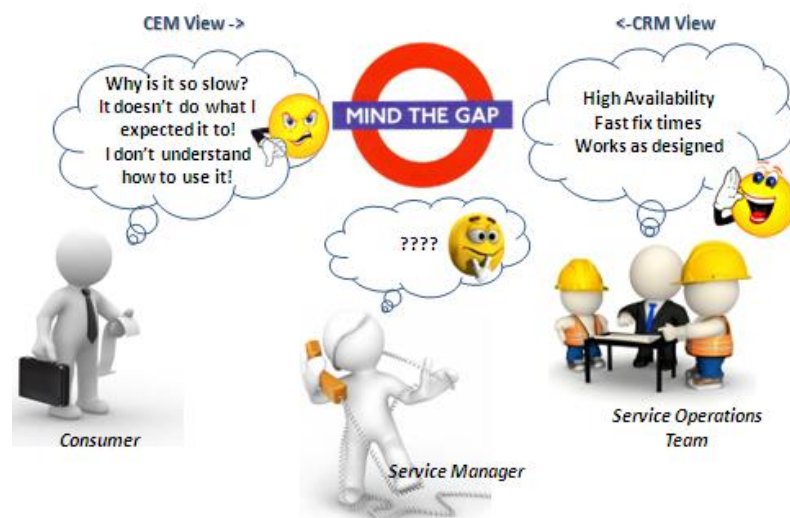


Figure 13 - Customer Expectations vs. Service Targets

The result is a gap between the customer view of service quality and the service provider's view; with the Service Manager trying to act as the bridge across the chasm. A simple example is one of the key quality indicators (KQIs) that service providers regularly use to measure service quality ... [Availability](#). The standard formula for measuring availability does not consider planned outages as downtime so a service that requires regular outages for maintenance may still display a high level of availability. Does the consumer trying to use the service actually care whether the outage is planned? Of course not! A more customer centric measurement of service 'availability' is '[Serviceability](#)' which is a simple measurement of the percentage time that a service is available irrespective of the reason for outage. It would seem to be a simple task to move from measuring Availability to Serviceability but this is often not the case especially where the performance of individuals is measured by the availability of the services that they manage!

Part of the solution to this conundrum is the establishment of SLAs and to use the SLA to measure performance of the different parts of the organisation and its suppliers and partners. The TM Forum's SLA Management Handbook (GB917) is one of the Forum's longest running initiatives and provides a detailed description of how to develop and manage SLAs. The handbook has been widely adopted within the communications industry and beyond and has been developed based on real experiences of member companies implementing SLA Management.

The term SLA is a generic term that is often used to describe a much wider universe of service objectives and agreements, some formal and some informal. The following diagram extracted from GB917 shows the universe of agreements that exist or should exist in most service providers' organisation.



Figure 14 - SLA Universe (TM Forum SLA Handbook GB917)

Before we look at this universe it is important to understand the components of the service structure that the agreements need to be pinned to.

As we have mentioned above, the service delivery chain for modern digital services can be complex with a high dependency on third party delivered services, as shown in Figure 3 - TM Forum Holistic e2e Customer Experience Framework (TR149). A simplified generic structure can be described as follows:

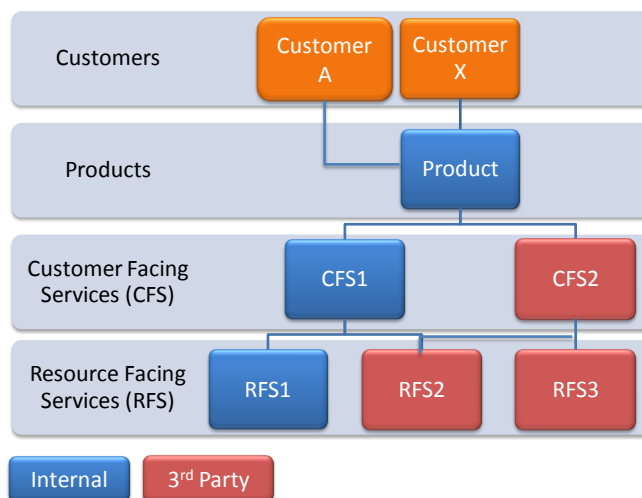


Figure 15 - Service Structure

As can be seen from the diagram, there is a clear hierarchy in a service structure that shows Customer Facing Services (CFS) being constructed from a number of Resource Facing Services (RFS) where each of these components may be delivered internally to the service provider or from an external partner or supplier. One or more CFS are then packaged into the Product that is supplied to the customer. Whereas RFS and CFS may be provided by a third party, the Product is almost always the responsibility of the service provider and tied in to other offerings and the service provider's brand. The quality of service at the product level, therefore, has significant impact on the service providers brand value. Consequently it is imperative to monitor and manage the product quality especially where one or more components (services) are dependent on a third party and outside the direct management of the service provider's operational capability.

Establishing service agreements at each component level as shown below, enables the service provider to not only manage the quality of service delivered to the customer but also that delivered by suppliers, partners and internal groups.

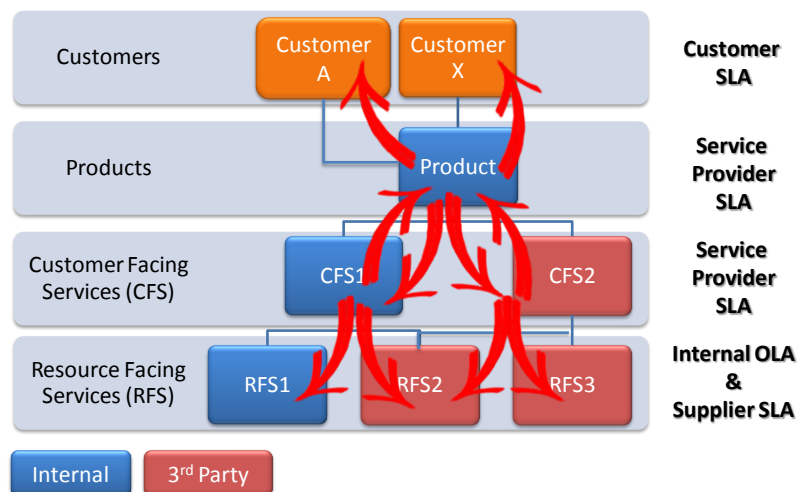


Figure 16 - SLA Hierarchy

Most of the types of service agreement shown in Figure 14 - SLA Universe (TM Forum SLA Handbook GB917) will be familiar to the reader with the possible exception of the Implicit SLA. An Implicit SLA uses the same specification format as an SLA or an OLA, i.e. with a Service Level Specification (SLS) and a description of measurement points and violation procedures, but does not exist within the context of an agreement (whether commercial or internal). It represents a one sided goal stated internally by a service provider, aiming at achieving a certain level of quality for a service, corresponding to the service provider understanding of what the customer expectations are.

Importantly when developing the service agreements all of the SLAs and OLAs must be 'joined up'. In other words, the commitment made to the customer in the Customer SLA must be underpinned by the SLA at the product level which in turn must be supported by the CFS level SLAs and so on through the hierarchy. This does not

mean that the Customer SLA has to match the product SLAs, more that they should not exceed the latter without a good business reason to do so.

While the SLA may be the corner stone for managing service quality it forms only part of a much wider source of information required to understand the customer experience. The true picture has to be constructed from many sources gathered at the different levels of the hierarchy as shown in the following diagram:

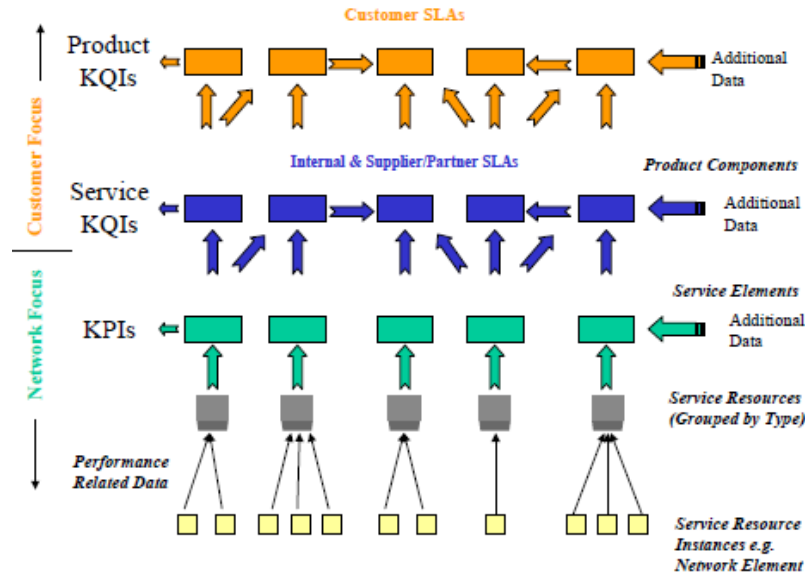


Figure 17 – Key Quality Indicator (KQI) / Key Performance Indicator (KPI) Hierarchy

Traditionally this model has been applied bottom up i.e. from the resources up to the Customer SLA an approach that supported the “what do we think the customer is concerned about” strategy. In many cases there is actually little correlation between the SLA offered to the customer and the service agreements associated with the components that the service depends on. The result is unsupportable customer SLAs! CEM turns this approach on its head by starting with “what is the customer actually concerned about” and mapping these ‘Critical Success Factors (CFS)’ to the lower level measurements and other data sources.

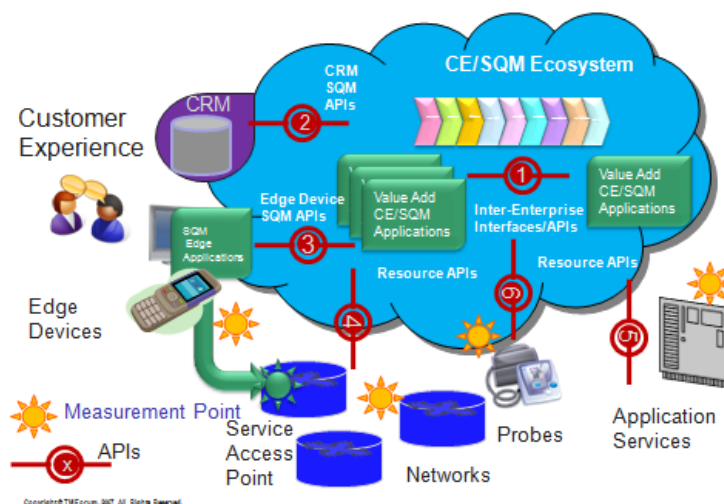


Figure 18 - Value Chain view of e2e Holistic Customer Experience Framework (TR149)

As we can see from the above diagram, measuring the customer experience involves capturing data from a much wider source of data than has been used in the past for technology biased performance measurements. The addition of service testing probes adds an important additional source of information as, if used correctly, they provide true end to end service performance data. The TM Forum Managing Customer Experience program has carried out a significant piece of work on the use of probes and this is documented in 'TR148 - Managing the Quality of Customer Experience'. This work includes descriptions of different types of probes including:

- Passive service and network.
- Active user probes that emulate end user activity.
- Active services probes.
- Embedded agents inside end users' devices.

But even probes have a limitation, with the exception of embedded agents, they only test the service from a limited number of access points and rarely provide information of how the service is performing at the user application, equipment or edge devices. There are two approaches that can help to fill this gap.

The first is to use embedded agents to extract performance data from the users' devices, or at least a sample of them. More and more we are seeing that user application vendors are including the collection of performance data that can then be uploaded to a central service performance management system. Unfortunately there is still a wide reluctance in the user community to allow access to this performance data and service providers sometimes find that they are restricted to collecting data from their own internal users. Even so this technique does provide a good measurement of how a service is performing.

Another technique that is becoming more widely deployed is Business Transaction Management (BTM) which allows the provider to track real user transactions and monitor a number of different performance criteria such as success rate and transaction speed. While this approach may seem to offer the best option, it too has its limitations. Firstly BTM only provides information when a service is being used; it does not enable a provider to monitor the service during 'dark' hours. Secondly BTM solutions often rely on the deployment of agents at different points in the service delivery chain which can prove difficult when components are being delivered by third party providers. The answer therefore is a wide range of data sources aggregated into a single view of service performance as described in much more detail in TR148 and TR149.

Even this comprehensive approach to gathering data from a wide range of sources does not really go far enough. One problem is that it still has a tendency to support a CRM strategy rather than CEM in that it relies on setting up measurement of what the service provider considers to be important to the consumer. If driven by strong input from the user domain the technique does help a service provider to understand the customer experience. There is of course one problem with basing management on input from the user ... they do not always know what is important until they start to use the service, and even then, what is important changes as the maturity of the service progresses.

So how can we measure satisfaction without knowing what to measure? One approach has been used for many years and continues to be a good source of customer satisfaction data, this is the customer survey. Regular polling of a sample of customers using **well-formed questions** continues to enable the service provider to

assess what they are doing well and the level of satisfaction that their customers are experiencing. The survey also helps to build the fan base by sending the message that the service provider wants to engage with them and cares about their experiences. Surveys however can be expensive and can suffer from significant latency between defining the questions and evaluating the results. They can also suffer from 'yesterday syndrome'. For example, while the survey may be intended to measure customer experience over a three month period the answers that they will hear will be heavily biased by the most recent experience of using a service.

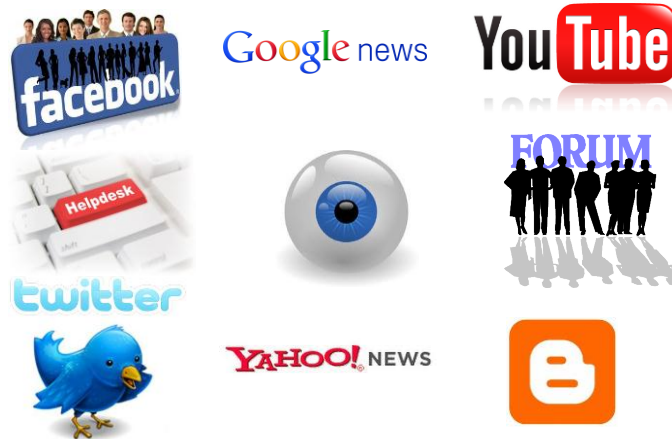


Figure 19 - Social Networking Sources

Increasingly service providers are looking to sources of information that do not rely on them collecting the right data and asking the right questions. Instead they are looking to the social networking sites to provide valuable feedback on what the customer is experiencing. Sites such as twitter™ and facebook™ provide rapid indicators on when things are going wrong. Increasingly systems that automatically monitor key social networking sites are being deployed to flag to the Service Management Centre when traffic increases. Often this is the first sign that a service is failing or a new service does not work the way that it should. There have been numerous examples in the past where these sites have provided early feedback on a new product or service. These social networks are very powerful and ignored at the service providers peril. Unfortunately human nature tends towards using these social networking sites when there is a problem and less for reporting good service. They tend, therefore, to provide a measure of customer dissatisfaction rather than satisfaction.

Recognising that the CEM view is complex, forward looking service providers are developing an OSS/BSS environment that enables them to display this disparate data in one single 'vital signs' view. The following is a picture of such a scorecard being developed by Telefonica U.K. for them to be able to monitor the various performance aspects that represent the customer experience.



The above is an early design view using test data but provides an insight of how Telefonica's approach towards managing the customer experience embraces a multitude of critical success factors including customer surveys, social media activity, contact centre stats and service specific data. From this single view Telefonica UK are able to calculate various Customer Satisfaction Index values which they can then use to drive their customer centric quality improvement programs.

The TM Forum's document **TR149** describes the Customer Experience /Service Quality Management (SQM) Framework that has been evolved to meet the need for assuring e2e Quality of Customer Experience when services are delivered using value chains of co-operating providers. It aims to support business scenarios and requirements described in **TR 148 Managing Quality of Customer Experience**. It models what Customer Experience is, the customer and user needs that must be satisfied in order to give good and improved customer satisfaction, and is based on recent industry research work and standards.

It highlights the importance of knowing customer and user relationships, and the group memberships in which they participate, in order to deliver improved customer and user satisfaction.

The report describes a technique called Key Factor Analysis Methodology (KFAM) for systematically relating technical performance measurements to customer needs, and hence customer experience, as well as the product/service features and SLAs offered by providers. This technique's strength is that it can be used by TM Forum members to track changes in these dependencies over time, and across market segments.

The e2e Holistic Customer Experience (CE) Framework is an ecosystem of six APIs, and a set of application areas that need to be designed and specified as a set, in order to be able to measure and improve Customer Experience across a Value Chain. It identifies a set of Application Framework (TAM) Applications and interfaces that must be delivered as a consistent set with common information models and e2e Holistic CE metrics. It is an end to end design of a subset of the TAM. With the application of these new capabilities it is possible to track customer experience,

predict trends, proactively modify and optimize the product offers made to customer segments, trouble shoot service problems, and build improved level of customer satisfaction and loyalty.

Other work within the TM Forum supporting CEM includes the Business Benchmarking program. The program is unique in delivering objective, standard business performance data to the industry to support business transformations. Developed by service providers, for service providers, the Business Benchmarking Program's quantitative, standard metrics range from tactical to business performance data. The Program also conducts qualitative surveys on topics of service provider interest.

In summary, there is no silver bullet when it comes to measuring and monitoring the customer experience. There is however a clear movement in the industry to rely less on purely internally generated CRM data and broaden the approach to listen to anything that the consumer has to say without trying to best guess what the customer thinks is important. Data from the social networks and consumers interactions with the service provider e.g. via customer services are becoming more dominant as a source for understanding the customer experience. It does not matter what the internal systems are telling the provider; if the user are saying that the service is poor ... it is poor!

7. Summary

The concept of Customer Experience Management is relatively new to the communications industry and while there has been quite a lot of work carried out on Service Management and Customer Relationship Management that underpin CEM, good guidelines and working practices are only just starting to appear. As it did with Service Management and CRM, the TM Forum, through its member companies, is driving out the CEM boundaries and expanding its widely adopted Framework to support CEM.

Unlike Service Management which was very slow to build adoption, there is a much greater push to establish CEM programs in many of the leading service provider companies. This will inevitably lead to better 'standardisation' in the industry. Having said that, the nature of CEM and the fact that it touches on many aspects of a service provider's business, it is unlikely that there will be a fully defined set of standards for CEM. We will, however, see an extension of existing frameworks and development of new good practices that will enable service providers to establish CEM programs with shorter lead times, reduced risk and lower costs. The availability of CEM OSS and BSS systems will also continue to develop, providing the critical tools environment that the service providers need.

The establishment of CEM as a corner stone for achieving market differentiation is already understood by many and because of this the industry will see new and innovative ideas underpinned by CEM. After many years saying "the customer is king" the industry is starting to believe it and the culture change needed to support that standpoint has started. For some it may be a difficult journey but the pain will surely be worth the gain.

8. CEM in the TM Forum

The TM Forum has a number of Collaboration projects that support Customer Experience Management. These include:

The Customer Experience Management Team.

This group has been re-engaged under the influence of the Revenue Management Initiative for the purpose of advancing work on the "Focus on Satisfaction" key. The foundational work in the Customer Experience subject area over the last several years was organized under a Managing Customer Experience (MCE) theme. The project resulted in two substantial TM Forum Technical Reports, **TR148** and **TR149**, developing the subject around a comprehensive model of "Customer Touch Points" and centering on a Service Level Agreement perspective. This work closely coordinated its work with the SLA Management group, whose effort continues apace to the present day, captured in TM Forum publications, particularly the SLA Handbook (GB917). That was the state of affairs encountered at the point in time when the Revenue Management Initiative was set on a course of broadened scope and purpose to address a full gamut of Business Management Layer subjects, including Customer Experience. Their community site may be found here:

http://www.tmforum.org/Community/groups/customer_product/default.aspx

The SLA Management Team

The methodology and tools developed by the SLA Management project have been designed to manage service quality throughout the customer experience lifecycle. This means managing service quality beyond the in-use phase of the lifecycle to include point of sales, provisioning, in-use phase and service termination aspects. It should also be noted that the in-use phase includes service components such as customer services and billing.

The SLA Management team reviews various topics directly related to Service Level Agreements and Quality of Service management. Under this umbrella, the Team develops application notes that address new emerging telecommunication technologies and services based on the principles and concepts of contemporary SLA/QoS management. The team's current deliverables are:

- **GB917** - SLA Management Handbook (latest release is 3.0, release 3.1 is under construction)
- **GB934** - VOIP SLA Best Practices (latest release is 2.0)
- **GB938** - IP Video SLA Best Practices (latest release is 2.0)

The team's community site maybe found here:

http://www.tmforum.org/community/groups/service_level_agreement_management/default.aspx

Revenue Assurance

TM Forum is leading the way in developing this holistic approach to revenue assurance by creating best practices, standardizing the language and processes of revenue assurance, and defining a comprehensive Revenue Assurance Maturity Model, Revenue Assurance Key Performance Indicators (KPIs), and an industry-wide benchmarking program.

TM Forum's Revenue Assurance Solutions Suite and Revenue Assurance Training and Certification programs provide the tools you need to improve the maturity of and transition to a successful revenue assurance program. The team's main deliverables are;

- GB941 – Revenue Assurance Solution Suite
- TR131 – Revenue Assurance Overview

The team's community site maybe found here:

<http://www.tmforum.org/community/groups/revenue-assurance/default.aspx>

Business Analytics and Benchmarking

The TM Forum's Business Benchmarking Program allows you to compare your business and operational performance against the rest of the industry, providing the critical information you need to shape your future strategy. TM Forum Benchmarking is unique in delivering high quality, objective, standard business performance data to the industry to support business transformations. Developed by service providers, for service providers, the Business Benchmarking Program's quantitative, standard metrics range from tactical to business performance data. The Program also conducts qualitative surveys on topics of service provider interest. Further information about the program is available on the TM Forum's website:

<http://www.tmforum.org/BusinessBenchmarking/10227/home.html>

Business Process Framework

The Business Process Framework (also known as eTOM) is a core element of TM Forum Framework program. It provides a business process view across the whole enterprise that serves as the blueprint for process direction, and also as the starting point for development and integration of systems and solutions by TM Forum members. For service providers, it provides a neutral reference point as they consider internal process reengineering needs, partnerships, alliances, and general working agreements with other providers. For suppliers and integrators, the Business Process Framework outlines potential boundaries of software components, and the required functions, inputs, and outputs that must be supported by products. The team's main deliverable is the **GB921** suite of documents.

The team's community site maybe found here:

http://www.tmforum.org/community/groups/the_business_process_framework/default.aspx

Information Model

TM Forum Information Framework (SID) is a key element of TM Forum Framework and is in use worldwide by service providers and vendors. End-to-end service management requires a consistent use of data across the enterprise. Information Framework provides a comprehensive, industry-agreed definition for information that flows through the enterprise and between service providers and their business partners. Supported by off-the-shelf tools, Information Framework provides a common information model, reducing complexity and allowing for the definition of standardized integration points. The team has several deliverables including the **GB922** suite of documents.

The team's community site may be found here:

http://www.tmforum.org/community/groups/information_framework_sid/default.aspx

Application Framework

By breaking out all the rudiments of business process, bus technology and middleware, the Applications Framework bridges the NGOSS Transformation Framework's building blocks—such as the Business Process Framework (eTOM) and the Information Framework (SID)—and real, deployable, potentially procurable applications. It achieves this by grouping together process functions and information data into recognized OSS and BSS applications or services.

In other words, the Applications Framework defines procurable applications that perform the processes defined in the Business Process Framework, and manipulates

the information defined in the Information Framework. In doing so, it subdivides applications into lower-level functional units, and describes specific interactions that can occur among applications. The team's main deliverable is **GB929**.

The team's community site may be found here:

http://www.tmforum.org/community/groups/the_application_framework/default.aspx

Catalog Management

Catalogs are no longer the preserve of the Product Manager but are becoming a fundamental element to the complete Product/Service/Resource hierarchy. As our Industry shifts to using more catalog types beyond the product catalog this team will identify other types of catalogs and relation among these catalog types, scope of these, and usage followed by impact on architecture including the business processes around dynamic concept to lead to order to cash and beyond. The team is currently working on its first deliverable. Their community site may be found here:

http://www.tmforum.org/community/groups/catalog_management/default.aspx

TM Forum Training Program

The TM Forum runs a comprehensive training program on a number of subjects including Customer Experience management. TM Forum Training and Certification provide a consistent approach to Frameworx education across the industry so service providers can more easily source the skills they demand to reduce risk, increase speed of service deployment, and lower costs. Further details on the training program may be found here: <http://www.tmforum.org/TMForumTraining/5912/home.html>

9. Bibliography and References

Reference	Description	Source
TR148	Managing the Quality of Customer Experience	TM Forum
TR149	Holistic e2e Customer Experience Framework	TM Forum
GB917	SAL Management Handbook	TM Forum
GB923	Wireless Services Handbook	TM Forum
GB921	Business Process Framework (eTOM)	TM Forum
GB929	Application Framework (TAM)	TM Forum
GB922	Information Framework (SID)	TM Forum
Understanding Customer Experience	Paper written by Christopher Meyer and Andre Schwager	Havard Business Review 2007
Customer Satisfaction Survey	Independent customer satisfaction surveys	J. D. Power and Associates

10. Glossary

Customer Experience (CX)

Customer experience is the result of interactions between an organization and a customer compared and measured against the customer expectations while interacting with brand, product or/and service.

Customer Experience Management (CEM)

The methodology of designing, executing, monitoring and optimizing the customer experience across touch points while building brand perception, addressing customer expectations and enhancing the long term profitability

Customer Relationship Management (CRM)

Customer Relationship Management (CRM) refers to systems that manage all aspects of a company's interaction with its customers. These are often integrated with other OSS/BSS systems such as billing, trouble ticketing, order entry, marketing, etc.

TM Forum Glossary

Customer Experience Measurement

Measuring experience indicators at multiple touch-points across the customer life cycle to enable experience monitoring

Customer Experience Monitoring (CXM)

Provide a snapshot assessment of the measured experience across the customer life cycle at key touch-points

Touch Point / Touchpoint

The interface of a product, a service or a brand with customers or potential customers across the life cycle

Customer Life Cycle (CLC)

The Customer Life Cycle describes the various steps a customer goes through when shopping, using and preferring a product or a service

End to end Service Quality Management

The management of technical performance of the resources in service delivery chain to produced measurement of the e2e technical performance service delivery chain.

Document TR148.

Key Quality Indicator (KQI)

Key Quality Indicators provide a measurement of a specific aspect of the performance of a product, product components (services) or service elements and draw their data form a number of sources including the KPIs.

GB923 Wireless Service Measurements.

Key Performance Indicator (KPI)

Key Performance Indicators provide a measurement of a specific aspect of the performance of service resource (network or non-network) or group of service resources of the same type. A KPI is restricted to a specific resource type.

GB923 Wireless Service Measurements.

Mean Opinion Score (MOS)

The mean opinion score provides an estimation of the perceived quality of a multimedia service from the edge end perspective. The MOS is expressed as a figure in the range from 1 (worst) to 5 (best) as specified by ITU-T recommendation P.800 for voice service.

Quality of Service (QoS)

The collective effect of service performances, which determine the degree of satisfaction of a user of the service (ITU-T Rec. E.800). So the term Quality of Service is used in this document as a quality figure rather than referring to the ability to reserve resources, i.e. level of Quality of Service.

Service Level Agreement (SLA)

A formal regulated agreement between two parties, sometimes called a Service Guarantee.

It is a contract (or part of one) that exists between the Service Provider and the Customer, designed to create a common understanding about services, priorities, responsibilities, etc. (TMF 701 modified).

An SLA or Contract is a set of appropriate procedures and targets formally or informally agreed between Network Operators/Service Providers (NOs/SPs) or between NOs/SPs and Customers, in order to achieve and maintain specified Quality of Service (QoS) in accordance with ITU (ITU-T and ITU-R) Recommendations. The SLA may be an integral part of the Contract. These procedures and targets are related to specific circuit/service availability, error performance, Ready for Service Date (RFSD), Mean Time Between Failures (MTBF), Mean Time to Restore Service (MTRS), Mean Time To Repair (MTTR) (ITU-T Rec. M.1340).

Service Level Objective (SLO)

An agreement within an enterprise that has the same characteristics as a SLA but without the inter-enterprise contractual aspects. (GB917)

Service Quality Management (SQM)

Set of features displayed by an operation support system (OSS) that allow management of the Quality of the different products and services offered by an enterprise.

11. Administrative Appendix

This Appendix provides additional background material about the TM Forum and this document. In general, sections may be included or omitted as desired, however a Document History must always be included.

11.1. About this document

This is a TM Forum Guidebook. The guidebook format is used when:

- The document lays out a 'core' part of TM Forum's approach to automating business processes. Such guidebooks would include the Telecom Operations Map and the Technology Integration Map, but not the detailed specifications that are developed in support of the approach.
- Information about TM Forum policy, or goals or programs is provided, such as the Strategic Plan or Operating Plan.
- Information about the marketplace is provided, as in the report on the size of the OSS market.

11.2. Document History

11.2.1. Version History

<This section records the changes between this and the previous document version as it is edited by the team concerned. Note: this is an incremental number which does not have to match the release number>

Version Number	Date Modified	Modified by:	Description of changes
0.1	31/03/2012	Ian Best	First draft
0.2	16/4/2012	Ian Best	Updated the Customer Experience Lifecycle diagram and associated text.
0.3	16/4/2012	Ian Best	Updates following review comments
0.4	30/9/2012	Shai Shamir	Terminology/definitions Maturity Model update
1.0	2/10/2012	Mary Amalfitano	Submitted for Team Approval
1.1	8/11/2012	Alicja Kawecki	Minor cosmetic corrections prior to posting and Member Evaluation

11.2.2. Release History

<This section records the changes between this and the previous Official document release>

Release Number	Date Modified	Modified by:	Description of changes
1.0	31/04/2012	Ian Best	First release of Customer Experience Management Solution Suite

11.3. Company Contact Details

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11.4. Acknowledgments

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The many members of the TM Forum Collaboration teams past and present for the hard work on the projects that support CEM.