The Digital Revolution

We are in the middle of a Digital Revolution that is deeply transforming our lives and opens new growth opportunities. The rules of this new 'Digital World' are not yet written; we are all in the process of shaping the change aggressively while challenging the status quo.

Communications Service Providers (CSPs) have started the journey to transform into a Digital Service Providers (DSPs), opening the window to this 'digital world' for their customers, but will they make it? This is a relevant question because so many of the systems required to support that move are simply not up to the task.

Digital services can best be defined as anything that can be delivered through an information infrastructure such as the internet. Keith Willett's, Chairman of the TM Forum in his book "Unzipping the Digital World" describes them as covering everything from the underpinning communications services through to storage services and computing services, as well as applications and content and the brokerage and aggregation of them via app stores and service delivery channels.

The catchcry of this new world is that "if anything can be digital, it will be."

SunTec™

DECLINE IN THE REVENUE FROM TRADITIONAL VOICE AND SMS SERVICES DUE TO MOBILE IM AND APPS

### FIXED AND MOBILE VOICE REVENUE TRENDS 2010 - 2017 (Millions of Dollars)

Mobile Voice

Fixed Voice
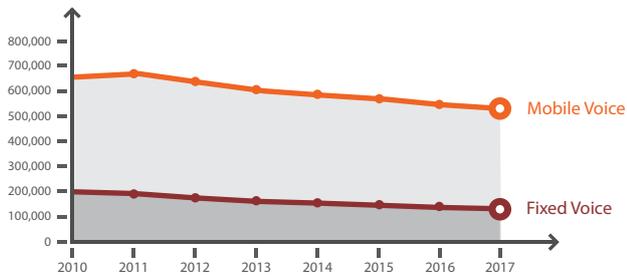
Source : TM Forum report 2012

IN 2012, FOR MOBILE VOICE, THE REVENUE LEAKAGE DUE TO MOBILE IM IS APPROXIMATELY $17^B GLOBALLY

$14^B in developed markets
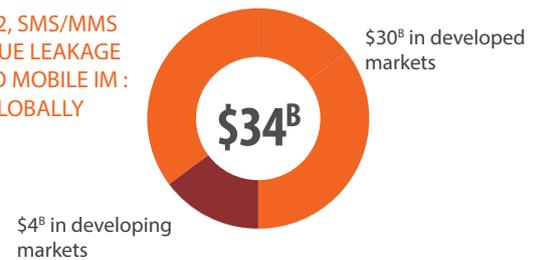
$17^B

$3^B in developing markets

Source : Gartner Research 2013

IN 2012, MOBILE IM AMOUNTED TO 25% OF TOTAL GLOBAL MOBILE MESSAGING

25%

13% Developing countries : 13%

41% Developed countries : 41%
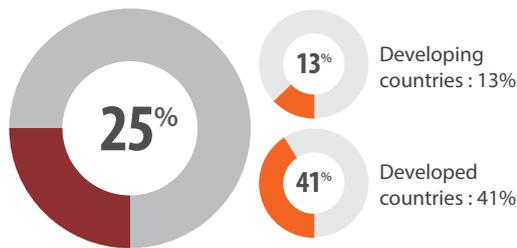
Source : Gartner Research 2013

IN 2012, SMS/MMS REVENUE LEAKAGE DUE TO MOBILE IM : $34^B GLOBALLY

$30^B in developed markets

$34^B

$4^B in developing markets

Source : Gartner Research 2013

DIGITAL SERVICES AND M2M - THE NEXT OPPORTUNITY FOR CSPs

DIGITAL SERVICES REVENUE

30%

10%

10% of total revenue in 2012

Expected to reach 30% by 2015

Source : Gartner Research 2013

EXPECTED REVENUE TO CSPS FROM DIGITAL SERVICES AND M2M

$172^B

$114^B

$96^B

$82^B

$71^B
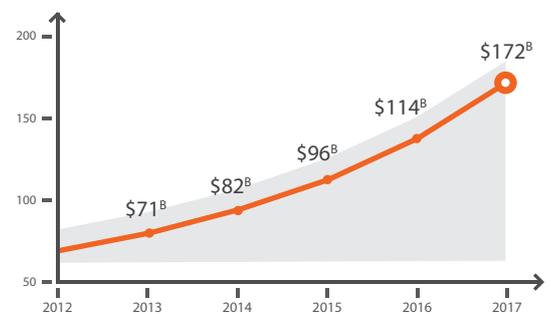
Source : SunTec Internal Research 2013

Defining Digital Services

In view of this, any type of application, information, entertainment, or any other type of service innovation in the digital retail arena should be included.

Examples include:

- **Media** - visual and audio content that is downloaded or streamed, with no overt interaction required by the user;

- **Gaming** - services where the leisure component of the service outweighs other interests and consumers actively interact with the digital content;

- **User-Created Content (UCC)** - services that require an active contribution from users in the form of creating own content, moderating and reviewing existing content or otherwise interacting with the creations of other users;

- **Personalisation Services/Add-ons** - content and services that enable consumers to personalise existing hardware or software, very common not only for mobile phones but also for searches, websites and personal profiles, such as those on social network sites;

- **Communication** - services that allow consumers to interact with others via a digital medium without changing the existing content or creations of other users;

- **System Software** - services that help run the computer hardware and computer system, and provide a platform for running application software;

- **Software-as-a-Service (SaaS)** - software where applications are hosted by a vendor or service provider and made available to customers over a network, typically the internet;

- **e-Learning** - the delivery of a learning, training or education programme by electronic means;

- **e-Health** - the delivery and monitoring of health programs and services programme by electronic means;

- **Machine-to-Machine (M2M)** - refers to technologies that allow both wireless and wired systems to communicate with other devices of the same ability. Modern M2M communication has expanded beyond a one-to-one connection and changed into a system of networks that transmits data to personal appliances.

Managing and Monetizing Digital Services

The management and monetization of digital services like those listed above is proving to be a challenge for many traditional CSPs mainly because their existing systems were designed for specific services like voice and data and not easily optimized for the broader range of digital services now being offered. These 'legacy' platforms of CSPs are simply not agile enough or designed to cope with the variety of new digital services. The extended time required to get new services to market, in this context, translates directly to lost revenue opportunities.

The digitization of the world economy is opening up new business opportunities, not only to CSPs, but any business wanting to deliver digital services to customers – whoever or wherever they are. Yet, they too, will need to be able to monetize those services and collect money from the users of the services.

You will constantly hear that we are evolving towards a hyper-connected and intelligent digital world, but this can only be achieved if the transport mechanism or network is in place. CSPs and internet service providers (ISPs) provide this, but often in highly regulated yet very competitive market spaces. They traditionally do this by establishing high quality networks and data management techniques but these alone will not guarantee their survival in the long term.

The erosion of their traditional voice and messaging revenues by so-called over-the-top (OTT) players is forcing them to also look at services beyond connectivity. This puts them under constant pressure to maintain not only revenues, but also margins, by constantly looking at new market opportunities. Latest reports indicate eroding margins for traditional services. Net income for the top 100 operators in 2012 fell by €27bn to €101.1bn (ca. 20% in one year).

This in turn puts pressure on the business systems that have to support the management, delivery and charging of new services - often a far more challenging task.

If CSPs will continue to play the key role in the digital world they will need to be able provide varying degrees of network and business system support to all customers, be they end-users or partners.

Customer Expectations of Digital Services over the Internet

CSPs should never second-guess the expectations of their customers with regard to digital services. On the one hand they are demanding an open environment that will allow them to use any device, with any operating system to access digital services. This includes portability of

any applications they may purchase as well as a broader interoperability of networks and their corresponding ecosystems.

On the other hand they expect a commensurate level of privacy with a clear and stable privacy policy in place and confidence that their data will be used in appropriate fashion. But even this expectation varies from customer to customer – some wishing to be left completely anonymous, others happy for CSPs to profile them in order to offer them with the services and products they will be most interested in.

Customers also expect a high availability of services and if there is any disruption, for whatever reason, they will almost certainly call their CSP first or lay the blame at their feet, even if the DSP is at fault. The same applies to security of the communication links expected from the CSP regardless of the third party service being consumed.

Above all, today's digital services consumer expects transparency in his dealings with both CSPs and DSPs. Term and conditions need to be clearly laid out in layman's terms and complexity needs to be avoided. Any hidden or unexpected clauses or behaviour on the part of the CSP, especially with regards to advertising, will be magnified via social networks in an instant and have an undesirable bounce back effect.

Maintaining Customer Satisfaction

The simple inability to be able to deliver and monetize digital opportunities quickly creates a series of critical 'pain' points for CSPs having to compete with OTT players and the content developers themselves selling direct.

CSP customer loyalty diminishes at a rapid rate when they find they are able to source digital services direct from the likes of iTunes, Google Play, Apple's App Store, Amazon and Netflix. Once driven by subsidized handset contracts, the digital consumer is now more concerned with 'immediacy' and bundled data traffic than having the latest phone. As handset subsidies diminish and cheaper smartphones are offered by the likes of Google there will be little incentive for them to stay with their CSP unless they can match the OTT competition.

Many CSPs still suffer from poor visibility of customers and products because of the fragmented development of their business systems over the years. They are still unable to deliver consolidated, real-time customer experience, or to deliver on accurate compliance reporting.

This is not helped by the fact that multiple platforms for charging/billing/invoicing still exist, inherited from mergers and acquisitions and legacy system growth over many years. This contributes to a continuation of information and process silos that contribute to business risk, high operational costs and stifled innovation.

Being able to monitor customers and offer them services they may be interested in requires a real-time, 360 degree view of each individual and is core to improving the experience and increasing satisfaction levels.

The Pressure of Digital Services on "Legacy" Systems

All of the above issues eventually lead CSPs to take on major 'transformation' projects process of migrating TDM and ATM networks to a single, service-delivery oriented, end-to-end all-IP infrastructure at the network level. The evolution from legacy technologies to an end-to-end, converged, IP-based network is the basis for IP network transformation. Convergence implies one network for all traffic. End-to-end implies IP everywhere, from core to access in the telecom operator space[1].

Operational support systems (OSS) that are network facing and (BSS) business support systems (encompassing software that supports billing and charging; customer management; product design and management; sales and marketing; order and order activation) are highly complex transformational projects[2].

The line between OSS and BSS have become so blurred the terms are being used less and less. The transformation OSS/BSS is aimed at replacing, converging, optimizing and streamlining business operations. For many, breaking down the arbitrary and unnecessary distinction between BSS/OSS replacing it with a distinction between real-time (i.e. interacting with the user while they are doing something: using a service, ordering a service, etc.) and non-real-time (either before or after the user performs their interaction) has become the expectation in the digital services era.

(1) Wikipedia.com
(2) Wikisperience.com

Digital Services Trends Shaping Today's CSP

DIGITIZATION
Digitization is enabling completely new disruptive business models

CONVERGENCE
Convergence of sectors is driving innovative commerce models

REAL-TIME
It's increasingly becoming a real-time world, where trust, quality of service and transparency are key

The objective of every CSP involved with digital services must be to:

- **Add new digital services faster** through a unified and agile platform that can add any new digital service in quick time, unlock new revenue streams and gain competitive advantage by providing innovative services to the consumers;

- **Actively drive real-time customer experience** and build lasting loyalty through modeling a complete picture of the customer's connected life and consistently delivering a timely, appropriate and context-sensitive experience in real-time;

- **Reduce the time to market for new products and services** by being able to introduce new products in minutes, not months. Model, test and launch services in response to continuously changing commercial context and customer preferences;

- **Eliminate business risk** by monitoring margin and return from every asset of the business in the connected digital ecosystem in real-time, rapidly responding to threats from fraud, attacks on information and service integrity;

- **Do better product management** of all products effectively by having a complete 360 degrees and real-time picture of the product lifecycle, key business parameters of the product, breaking all the information silos;

- **Do convergent revenue management** consolidating information from all the information silos and processes, and present a single view of customer and product;

- **Grow value from the most profitable customers** through pervasive real-time analytics and policy delivery ensuring highly valued customers are treated as individuals with specific and personalized offers at all times.

The OTT Impact

Many industry experts and surveys point to the need for mobile operators to embrace OTT as a way of delivering a new incremental revenue streams that will partially substitute the decline in voice and messaging revenues and will experience exponential growth in the long term.

Blocking OTT services is simply not a viable long-term strategy and will inevitably drive customers away and increase churn.

By retaining the billing relationship, mobile operators are able to partially monetize the access to OTT services via data charges bundled within the monthly package, but this clearly needs to be expanded by adopting a multiple OTT strategy founded on developing a long-term relationship with the customer.

OTT players will continue to offer services, often free of charge, to mobile network customers but they, too, will need to be able to monetize those 'free' services at some stage to remain in business. If mobile network operators (MNOs), in particular, are able to withstand the incremental revenue loss from declining voice and messaging traffic they should be able to position themselves as an effective 'monetization' partner for the OTT providers. Presuming, of course, their business systems are up to the task.

Our 10 Point Checklist for Digital Ecosystem Success

1. Think like a start-up, not market gorilla - be ready to try a lot of different ideas - fast launch is very important, but so too is fast teardown of ideas that don't work.

2. Partnership is everything - you no longer own all the components that make up the service, and should not, so identifying, evaluating, on-boarding and off-boarding partners efficiently is key.

3. Model and monitor value - knowing in advance whether an idea is likely to make money, and optimizing pricing and contracting up-front will save a lot of wasted cycles. Equally the ability to visualize how real services are performing in the market, and how key partners are delivering will help drive optimisation of product lines and value chains.

4. Maximise velocity - the old world was about building hugely reliable platforms to support services (Voice, SMS, Data) that would be in place for 30 years or more with a high-level certainty that millions of subscribers would sign up. The new world is more like a trading platform - partnerships and service lifecycles might last a few millisecond or a few weeks.

5. Create and share value - CSP procurement departments are used to taking months or years to negotiate supply contracts, squeezing every last cent out of every deal. The ecosystem is like any other market, and will value contribution to end-user and require contracts that can be rapidly agreed and executed in real time.

6. Track and manage the cash - ecosystems are complex, and sharing the revenue, and ensuring that it gets to the right account in a timely fashion, and can be audited throughout its journey is no mean task.

7. Standards are needed - trading systems have always relied on standards to allow parties to interact efficiently - protocols like TAP for roaming, OTP for Open Trading, SSL for secure transactions, but no standards yet exist for the new ecosystem.

8. Choose the right brand - this will not always be the brand of the biggest player in the partnership - pick a brand that most effectively targets your chosen market.

9. Measure customer experience across the whole service - some components may be working fine, but the customer will judge you on the weakest link.

10. Scalability - both up and down - is critical to maximising market opportunity whilst minimising risk.

How Suntec can Help

SunTec has been providing innovative product offerings to meet the challenges pertaining to the pricing and billing space for both CSPs and financial institutions for over 20 years.

SunTec's productized approach, standardized architecture, and its ability to support both in-network as well as cloud-based solutions provides service providers the agility needed to scale up as their business grows. By combining its rich industry expertise and extensive product portfolio with a wide range of proven services SunTec has been able to guide its customers through the digital services maze without the need for major transformation projects.

SunTec recently announced the launch of Xelerate, its next-generation revenue management and business assurance product suite. Xelerate, continues the evolution of SunTec's award-winning TBMS product suite, empowering providers of financial, communications and digital services to create real-time personalized offerings tailored to customers.

Built on a highly scalable platform with technology-agnostic and bottom-up service-oriented architecture, Xelerate enables service providers to combine large volumes of customer and product performance data, including live profitability views, to make decisions in real-time that can enrich the customer experience. For example, Xelerate enables the instant delivery of flexible, personalised offerings and bundles, underpinned by business assurance and complex revenue management and flexible settlement needs of organizations.

This can best be illustrated by the following case study.

Success Story - Mobile Digital TV and Video On Demand in Asia

This particular operator faced the following major problems that were all addressed by SunTec:

No well-defined system
• Digital TV was a new market in India and there were no revenue management systems that could be easily customized and quickly implemented for Digital TV providers.

Need for an agile system
• The system needed to be agile enough to quickly add new content partners and service operators, as the number of content partners is a crucial factor for success.

Required faster time to market
• Quick integration with external partner systems, creation of flexible price plans and packages are key to reducing the time to market for new products.

Ineffective partner management
• Partners are an important part of the Digital TV/ video-on-demand eco system. Highly secure, 100 per cent accurate and easy to operate partner management system was required.

Need for accurate and high speed processing
• The number of simultaneous users was expected to exceed several million during cricket matches. The solution required an accurate high-speed real-time billing system to avoid revenue loss.

Again, these issues were all addressed by the introduction of SunTec'sXelerate solution, as illustrated in the following diagram.