



Powering Mobile Evolution

VAS CONSOLIDATION, VIRTUALISATION AND THE CLOUD

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Executive Summary

Over the past decade, computing power and the bandwidth to deliver it have become extraordinarily efficient, fast and ubiquitous. New types of communication services are launched and reach enormous scale by leveraging this technology shift. In order to facilitate the next step in the evolution of mobile networks, mobile operators should also embrace these technologies and leverage them to consolidate the legacy service platforms that subscribers rely on every day.



INTRODUCTION

Over the past two decades, the mobile industry has conceived, launched and enhanced some of the most innovative communications services since the invention of the telephone itself. That innovation continues apace today with the global roll-out of 3G mobile broadband, LTE and the first developments of LTE-Advanced networks. Few would deny that “an all-IP world is just a matter of time”.

This technological change is having a major impact on the way consumers are using mobile networks, resulting in new challenges for the operator on both a commercial and technical level.

THE CHALLENGE OF THE DOUBLE EDGED SWORD

The rapid adoption of smart phones and burgeoning consumption of data over our expanding IP networks is driving the need to build better and faster networks with broader coverage than ever before, driving up the operator’s capital investment and operational costs. This is a double-edged sword for the mobile operator.

Faster networks can deliver new revenue streams by winning new customers and service revenues, but it also enables alternative communication services and over-the-top (OTT) providers that threaten and dilute traditional Operator-delivered value-added services.

Worse still, while Smartphone sales are helping to drive retail sales for operators and increase the uptake of mobile data services plans, once a subscriber has upgraded to a Smartphone, service differentiation becomes almost impossible, as OTT service providers deliver massively compelling applications and charging models that are hard to resist.

In markets where mobile penetration has reached saturation levels, operators find themselves fighting furiously to avoid churn and maintain ARPU. As a result, almost all traditional mobile operator services are now offered as part of flat rate combinations or offered in unlimited bundles – leading to higher usage but at much lower margin.

All of this leads to continued pressure on mobile operator business models and drives a need to rapidly innovate business models. In fact, we are already seeing increasing signs of this with large consolidation and collaboration projects in the form of increased M&A activity, Joint Ventures, spectrum sharing on 4G and use of shared services.

There is no way to predict how all of this will unfold and how it will ultimately affect mobile operators. But what we do know for sure is that in a commoditised market, a fundamental way to remain profitable is by consolidating infrastructure for better cost management.

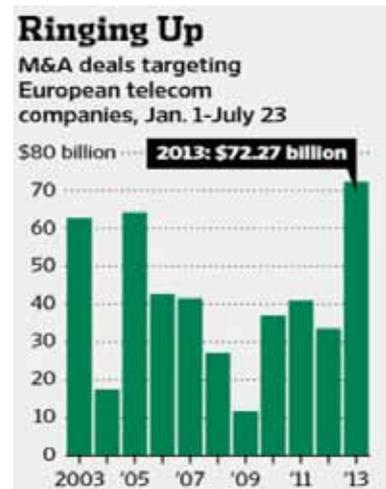


Figure 1: M&A activity in Europe (source: Wall Street Journal)



NEW ENTRANTS AND TECHNOLOGY INNOVATION

Over the past two decades mobile operators have built up infrastructure that supports their “carrier grade” communication services, giving most Tier-1 operators the capacity to handle many millions of voice calls and hundreds of millions of SMS per day. Significant and iterative capital investment has allowed this infrastructure to gradually evolve to deliver the mobile broadband services that everyone demands today.

In contrast, in the short space of just four years, a number of start-up companies have shot to prominence with services that cannibalise mobile operators’ traditional services. These companies have managed to leverage the roll-out of mobile broadband services and quickly build competing services with comparable capacity and reliability because of recent developments in computing technology.

Whatsapp and Viber, some of the most popular ‘OTT’ services in the world, have built and run their services completely in the cloud. Whatsapp uses a flexible Private Cloud Infrastructure to manage an average of 30 billion mobile originated messages a month. That is equal to the total MO SMS traffic of all mobile operators in France, Germany, Italy, Spain and the UK combined. This same infrastructure scaled up to 7 billion messages on New Year’s Eve 2012, Whatsapp’s busiest day so far. Viber is almost completely built on Amazon Web Services’ Public Cloud and supports an average of well over 100 million voice minutes per day, equal to the traffic on a mobile network with several million subscribers.

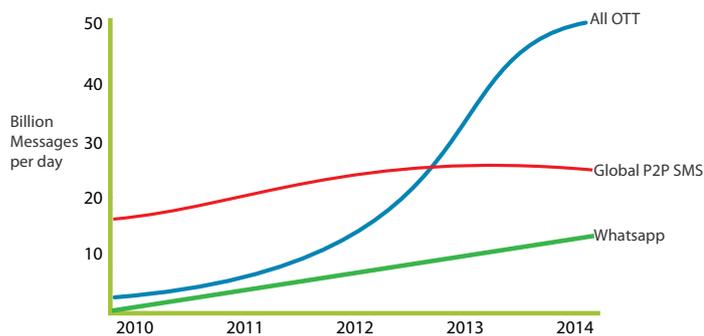


Figure 2: Total number of messages (in billions) sent through Whatsapp, P2P SMS and all popular OTT services combined

The opportunity exists for mobile operators and service providers to embrace the same developments in computing to deliver the equivalent flexibility, scalability and performance for all new and existing services. Cloud Computing and Virtualisation can deliver strong savings, enable growth and boost an operator’s profitability.



VIRTUALISATION AND THE CLOUD

Each application is encapsulated together into a single entity with its own Operating System, performance and configuration parameters, as well as a security environment so that a spike in traffic in one service does not negatively impact other services.

When hosting different applications within a virtualised environment, the service provider can theoretically offer any number of services from a single physical server with multiple instances of the same product serving different internal or external customers. By the same token, it can have any number of instances hosting the same application in any type of size and configuration to serve multiple customer tiers and types. Virtualisation is a powerful tool which allows for greater efficiencies in IT infrastructure but there is another development in computing that accelerates this ability, which is Cloud Computing.

Cloud Computing

Cloud Computing took legacy IT systems with scheduled capacity, physical infrastructure and manual operation to on-demand capacity, virtual infrastructure with automated operation options.

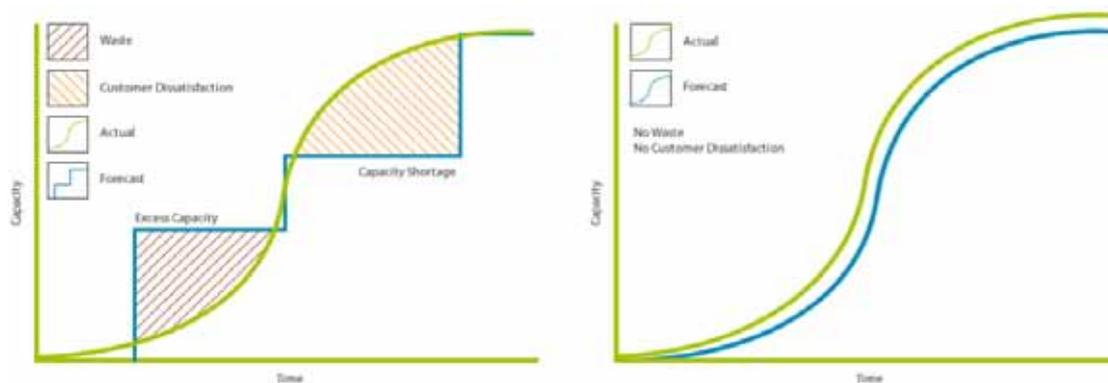


Figure 5: Capacity planning and usage of CPE vs Cloud

Cloud computing enables organisations to keep compute requirements in line with actual usage: rather than to dimension a system for maximum capacity, to have capacity assigned based on what is, invariably, a flexible input. When choosing a cloud configuration, there are different deployment options, each with their own advantages and drawbacks: Private and Public Cloud.

In a Private Cloud, server capacity is installed in a dedicated hosting environment and parts of the capacity are activated only to support spikes and deactivated when there is a decline. In this scenario, the customer buys software licenses and owns the different platforms (and the hardware it is installed on). Hardware is installed on customer premises so there are no CapEx savings but in this scenario, the customer retains full control over the technical infrastructure. In this model, OpEx savings are achieved through economies of scale.

In a public cloud deployment, no hardware is installed on customer premise so there is no CapEx at all. The customer buys service availability with infinite scalability instead of restricted hardware licenses so OpEx is greatly reduced. In this case, customers have less control over technical infrastructure but the cost of service follows actual usage and the keyword is flexibility.

In between the two, there is a hybrid option: A Private cloud with the option of expanding capacity from a public cloud when required.



VAS CONSOLIDATION

Mobile network operators are seeing declines in revenue from legacy services while at the same time subscribers expect these services to be available to them. One of the options open to operators is to make the delivery of these services much more cost effective. One of the ways in which this can be achieved is by consolidating the different platforms used to host VAS services.

Hosting and Cost Saving

VAS consolidation leverages the main benefits of virtualisation and can include many associated with cloud hosting models. VAS consolidation can be implemented centrally for multiple services, each serving an individual operator as well as in other cases, allowing for multiple services for several operators in multiple countries.

While most consolidation projects are driven by cost control, some projects may have a different background such as a desire to reduce the complexity of the network architecture and the associated software- and hardware components or, because the resources dedicated to managing and supporting it need to be reduced.

A key challenge for operators is the complexity of deployment, integration and operation of multiple VAS platforms from multiple VAS vendors. This process is kept simple if a single vendor is selected to manage the transition period, or when all VAS platforms can be procured from one vendor. This brings the benefits of simplifying integration to billing, signalling interfaces and provisioning and most importantly, significant reductions in capital and operational costs for the operator.

Outcomes

The core aim of VAS consolidation projects is to optimise physical (compute) resource allocation (CPU, Memory, and Disk space) and physical (human) management resources and to make sure that the total footprint (energy and staff allocation) is minimised.

Commercially, there are benefits in rationalising licensing costs, for example savings on software licenses required to support different voice applications as well as through unifying the cost of licensing and leveraging economies of scale in throughput allocation across multiple platforms.

Consolidating VAS on a central platform brings down the time to market for new applications and services because of the simplicity of standard interfaces across all platforms and it can help operators avoid conflicting ideas about technology direction and supported roadmaps which can hinder the evolution to future technologies and create expensive, time consuming interoperability issues.



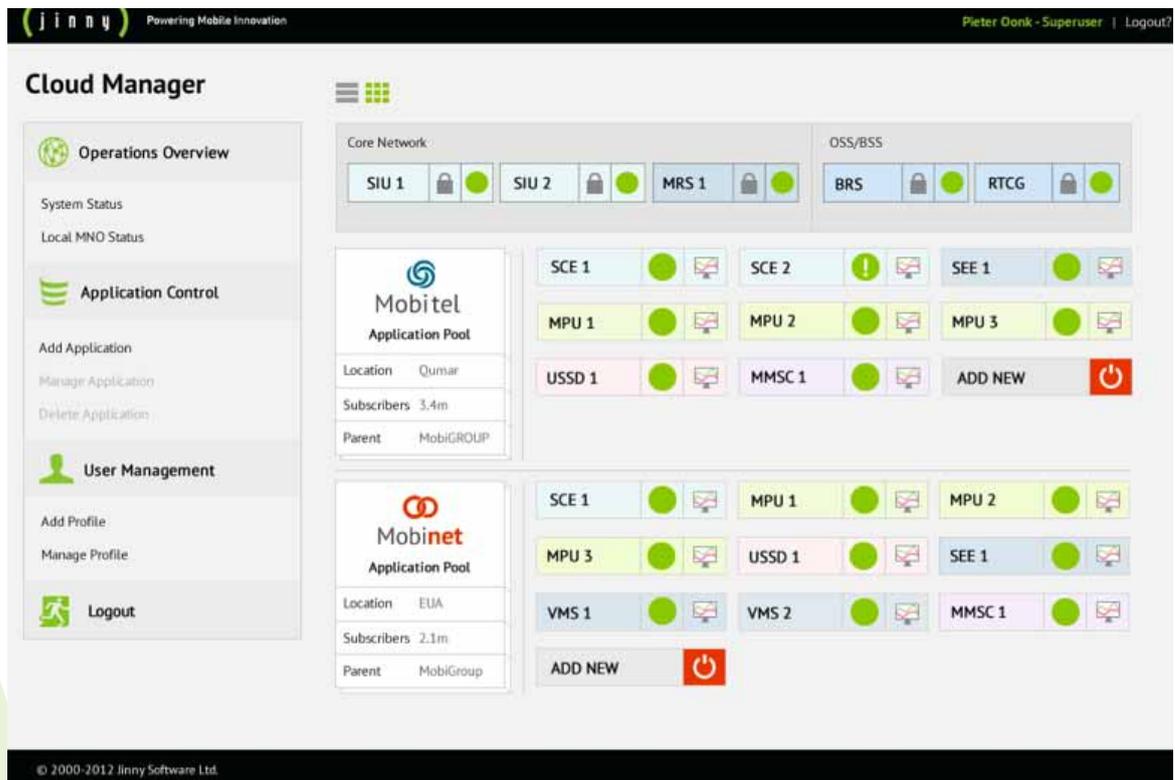
EVOLUTION OF A VAS VENDOR

Interestingly, in many ways the evolution of Jinny Software from origins in traditional mobile messaging into a leading supplier of solutions that all help mobile operators ensure profitability of core services and manage the transition to 4G Networks, follows a similar trend as laid out in this whitepaper:

In 2008, we consolidated all our products on to a fully unified environment, one that still underpins each new platform or application we develop, consisting of a common operating environment and a common middleware layer.

Recognising that one of our greatest strengths is the breadth of our portfolio, we launched ViO – VAS-in-One in 2010, which is specifically designed to help mobile operators quickly and seamlessly consolidate VAS platforms on to a standardized platform that offers a single interface and integration point to OSS/BSS and other core network nodes. Over the past several years, we have successfully deployed VAS solutions for a significant number of leading global operators.

In 2013, we announced the latest addition to our consolidation portfolio with the release of Cloud Manager – a single interface to manage complex cloud infrastructure of messaging, multimedia and call management applications that can support or host multiple operators. This new solution will bring together the best of our Virtualisation and Cloud solutions and and give mobile operators the commercial and technical benefits they need.





If you are looking at consolidating, we would be delighted to talk to you. Contact us on email, LinkedIn or Twitter.



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For more information on our services please email enquiries@jinnysoftware.com or reach out to us through LinkedIn and twitter channels:

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About Jinny Software

Jinny Software offers a comprehensive range of messaging, rich communications and signalling management and VAS Consolidation solutions aswell as Anti-Spam, Filtering and Network Security solutions. Jinny's 70+ customers are spread across 60 countries and include mobile network operators, virtual network operators and enablers, as well as other enterprises.

Jinny Software operates from its headquarters in Dublin, Ireland. Implementation, project management, support and training are provided by service teams located in the US, Brazil, Ireland,

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