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Opening up SCPs

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Superficially, today's fixed and mobile telephone networks are not too different from those of thirty or more years ago. You dial a number – it could be a special short number, or an 800 number, the principle is the same – signalling takes place to connect your call to the other party. Sure, the numbers you dial look different now. And they've added some nice features that make things more convenient – like a built-in *answer-phone* service and *caller identification* so you can filter out calls, find out who called and when etc. For business users, there's even a little more like *calling circles*, *hunt groups,* and *multi-party calling* for example.

We sense, as service users, that mobile telecoms provide a more personal service with greater utility. Call the number and you connect to the person, not the location. Wherever they are, whatever the time. People of all ages have adopted text messaging enthusiastically as an additional, highly-valued communication option. Increasingly, mobile email and high speed data are also becoming more commonly used, blurring the boundary between person-to-person telecommunications and "the web." People are nomadic, and now that connectivity and the device is mobile too, it is clear that extra attributes such as location and presence can be utilised to create services that are more "user aware" and therefore useful to the user.

The Service Layer

To adapt the rigid A to B model that we started with, telecommunications engineers adopted a layered model and ensured that the signalling aspects of a service were separated from the actual

communication channel. It's called Signalling System 7 (SS7 for short), and the same principles have been re-used in SIP – the IP-based equivalent – that will, in all likelihood, eventually replace SS7. The core network provides the signalling, switching and channels to deliver the service. The layer above is the *Service Layer*. It is in this layer where intelligence is added to the signalling and basic switching function.

The Service Layer is implemented by one or more *Service Control Points (SCP)*. SCPs are also commonly referred to as an Intelligent Network Platform or commonly "IN" platform. When the network switch receives signalling for any kind of telephone number other than a standard, geographic number (which it will route directly), it passes control of the call to a designated SCP. The SCP figures out what to do. This might be to perform a number translation, check and authorize the call depending upon a prepaid tariff and balance, try several numbers in sequence or parallel, or look-up additional information such as subscriber ID, location, personal calling rules etc. Throughout this process, the SCP is in charge and controls the call.

The Problem

So far, so good. So what's the problem? Essentially, it is that SCPs are only available as a complete, vertically integrated hardware and software system. In other words, a "box" that you connect into the network to perform predefined functions. They were designed in the 1990s or earlier to provide the limited range of standard telephony services at that time and to comply with the ITU and 3GPP standards. As the SCP is controlling phone calls, it is engineered to meet the exacting requirements for network equipment (NE) – "five nines" availability: resilience to failure, upgrade with no down-time, hot swapping of components etc. The deployment requirements, the restricted ambition in terms of the range of services when the SCPs were designed, the tight vertical integration and severe structural rigidities mean that the end-user services are essentially pre-baked into the SCP. Adaptation of services has to be done by the SCP provider and is extremely expensive, often with very long lead times. It means that the Communication Service Provider (CSP) can only sell and market a limited range of standard, utilitarian services. They cannot experiment or innovate. They have only one supplier for any changes that they require, the business case for which often fails due to the high costs of SCP adaptation. Uniquely in a highly competitive marketplace, CSPs are handicapped in their ability to compete by differentiating their offer in terms of its capabilities.

Traditional SCPs are characterised by high prices, inflexibilities, single source for changes, slow evolution and enhancement. As a CSP, once you have procured your SCP, you are a hostage to

fortune. Well, at least everyone is in the same boat. But meanwhile voice minute price-points are in decline and all CSPs are under tremendous price pressure. And the insurgent VoIP-based, price-focused competitors are chasing hard.

It used to be like this in Enterprise IT. Enterprises bought a complete, vertically integrated stack of hardware, system software, and applications from a single vendor. This has all changed now. There are commodity hardware providers, system software providers and application software providers. There is competition within each layer. The competition has driven the price-points down, platform performance and flexibility up, and application innovation up. There is something intrinsic at the heart of all this: open systems and architectures promote competition and result in lower prices and innovation. It's the basis of all free markets.

Until now, this option simply hasn't been available to the SCP.

The Way Forward

What is needed is a solution that enables service agility in the telecoms network through an open, flexible platform that utilises commodity server hardware...in other words, a modern "IT" system designed explicitly for the telecoms network that unlocks the value of the telecoms service layer.

A radically lower price-point than traditional SCPs:

Lower operational costs: Achieve rapid innovation, deployment, integration and ease of administration of new and variant services from an open marketplace of product and custom-build application providers and a much lower cost than using the SCP supplier.

Agile innovation of telecoms services: Services can be designed, implemented, and trialled in days rather than months – resulting in lower SCP OpEx spend.

Augment existing SCP: No need to rip-and-replace the existing SCPs immediately; instead, co-exist with existing SCPs as a separate innovation platform to evolve and create new applications faster and at a much lower price-point.

Service composition & interaction: Efficient, low-cost creation of service variants, thus overcoming service-chaining complexities and the associated administrative overheads.

SIP/IMS Connectivity as standard: Aligning SCP spend to address today's problems and challenges cost effectively whilst also aligning with longer-term strategy.

CSPs regain control of their roadmap:

Reduce time-to-market: Achieve competitive differentiation by quickly introducing innovative new and "smart" services into the network. Services can be designed, implemented, and trialled in days rather than months.

Control your road map: CSPs can develop a road map of service innovation at a rate that suits their company and customers. New and variant services can be procured from an open and competitive marketplace of product and custom-build application providers.

Mitigate risk: Starting with IN augmentation, CSPs can innovate in person-to-person services whilst retaining the existing SCPs for existing services and hence eliminating unnecessary risk.

Segment: Segmenting the customer base and target markets. Delivering targeted services for each segment; in turn, increasing customer loyalty while decreasing churn.

Eliminate legacy SCP Lock-in:

Eliminate vendor lock-in and transform the service layer: Break down legacy barriers imposed by proprietary hardware vendors and deliver an agile and low cost development environment in the service layer; reduce and eventually eliminate the current IN as it exists today.

Open standards platform: Open up the service layer to a host of person-to-person application developers, to rapidly deliver innovative new services to market, without the issue of proprietary protocols.

Maximize value of existing infrastructure: delivery of an open, scalable platform that integrates with both open and proprietary infrastructures to maximize existing investments.