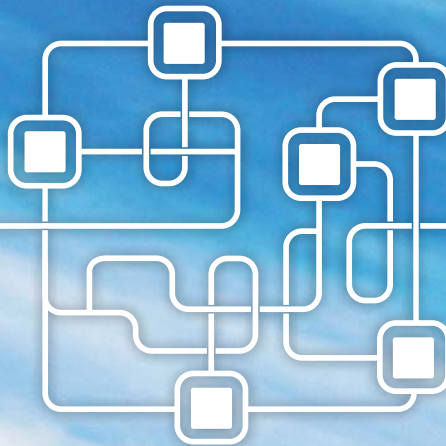


Powering Innovation in Telecommunication Services

Company Overview

Rapid innovation doesn't happen
if your network infrastructure is
complex and high maintenance.



Lower your operational costs
and enable faster service
development with our
horizontal service layer platform.



CHALLENGES

Over 90% of telco's revenues today are generated by voice, messaging and data connectivity services – services that are, to a large degree, provided by legacy Service Control Points (SCP).

Commonly referred to as the Intelligent Network

(IN) platform, these high cost systems were not built to meet the dynamic nature of today's highly competitive market. They are simple, static one-size-fits-all solutions, built on expensive proprietary platforms unable to offer the levels of service agility, innovation or cost-per-subscriber served the industry now demands.

This is a problem; basic voice is becoming commoditised with increasingly large all-you-can-eat bundles putting pressure on operators to differentiate through the delivery of a new generation of premium voice, data and content services. With the increasing power of mobile end user devices, Operators must utilise their position in the service delivery chain to add value with their network and supporting infrastructure and so

differentiate their offering from over-the-top providers and other Network Operators alike. Operators, application developers and Network Equipment Providers will need to develop new and innovative services that utilise voice, messaging and data – plus the associated customer knowledge they have, such as location, presence and personal preferences – as key 'enabling' components.

Added to this, the wider economic slowdown of recent years plus fierce price competition has resulted in severe CAPEX spending restrictions. This means that any new service delivery strategy has to be rolled-out at a dramatically lower price point, in an open and adaptable environment and, for the time-being at least, utilise their existing SS7-based assets along with their newer IP-based networks.

So, forget for a moment third-party content-driven telecom services; these typically account for a very small share of a telco's business.

Instead, consider focusing what you as a Telecom Operator can do, given your pivotal position in service delivery chain, to create smarter telecom services that deliver real value to your customers. The competition today is not restricted to other Operators proceeding at "telecoms speed" – it includes the over-the-top providers harnessing the power of the smartphone and moving at "internet speed". Smartphone plus a smart network can deliver real value that delights customers, engenders loyalty and commands a premium price.

While innovation and new service delivery are vital to gain competitive advantage, stringent cost control is particularly important now. NEPs need to offer and operators need to deploy an open and flexible service layer in the core network that is sustained by a thriving application developer community. It is crucial in a competitive market to foster innovation and drive down prices and timescales. Without this, operators are locked into a limited range of basic services provided by their NEP.

Utilising standards-based, commercial-off-the-shelf (COTS) hardware and software to do so will deliver a new level of service layer agility at the right price. This will help solve the challenge of reducing CAPEX and OPEX while assuring a more competitive and lower cost supply chain from a host of third party application and service providers – who are no longer locked-out or constrained by proprietary infrastructures.

AN OPEN AND PRAGMATIC APPROACH TO SERVICE DELIVERY

OUR PROPOSITION

OpenCloud helps the fixed and mobile community build competitive advantage, customer loyalty and increased revenue – at a dramatically lower price point.

By maximising the potential of the core telco network, operators can deliver classic and telco 2.0 telecoms services more efficiently, with greater agility and with a more responsive model – with a **totally** convergent platform that fully and concurrently supports **all** SS7 and IP signalling protocols.

This is the OpenCloud evolution...

Real-Time

Central to the OpenCloud strategy is the concept of delivering an ever more agile, more responsive and more open service layer into today's telecommunication networks. OpenCloud Rhino™ delivers this agility whilst retaining the heritage of carrier-grade performance and high availability.

OpenCloud Rhino is a real-time Telecom Application Server (TAS) that delivers a new range of 'smart' voice, messaging and data services. OpenCloud Rhino can be used to augment current delivery platforms or as a system replacement. The former provides an opportunity to increase value to the customer through the creation of a more compelling and increasingly intelligent services portfolio. OpenCloud Rhino, when used as an SCP replacement, delivers a carrier-grade delivery platform able to scale-up to deploy a myriad of classic telecom and next generation telecom services.

Intelligent Approach

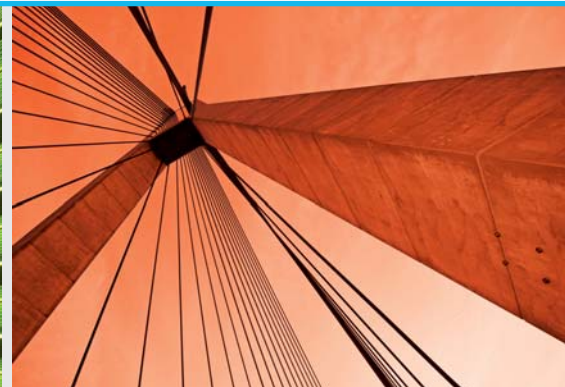
Whether the operator's strategy is to augment or replace the current IN platform, both will deliver incremental revenue generation in the short and medium term. By utilising the data already available in the operator's network – the user's service preferences, their usage patterns and extra attributes such as their location and presence information – operators can enable a new generation of telecom services. And it's not just the services themselves that need to adapt and change. Telecom business models are changing too. The traditional, simple operator-subscriber model is being complemented by advertising and sponsorship-funded models involving multiple parties.

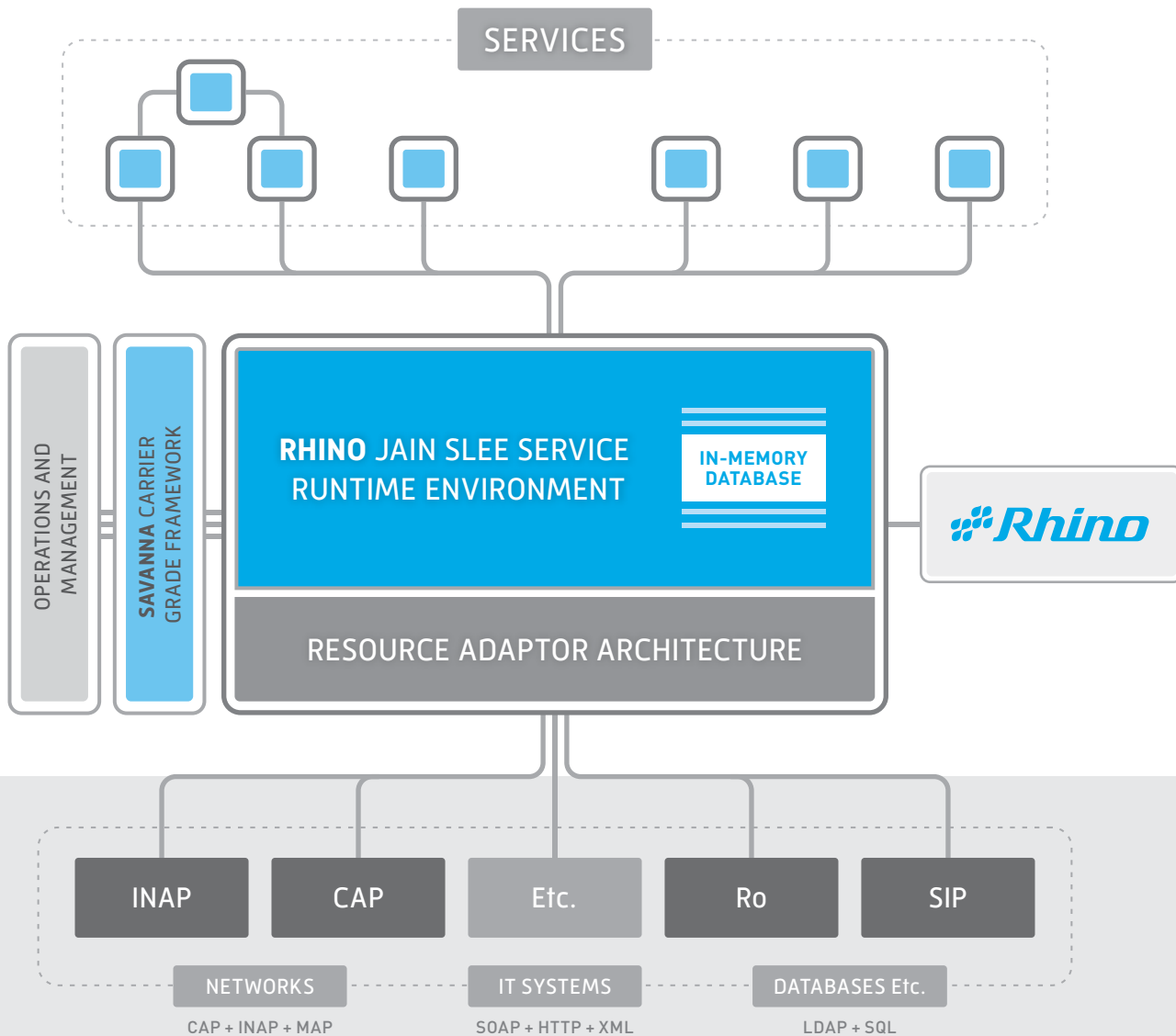
This is the concept of turning a dumb pipe into a next generation "smart pipe". Given their unique place in the delivery chain, operators can create and deliver more innovative and targeted revenue generating telecom services by utilising subscriber data in real-time. OpenCloud Rhino delivers this promise at a new, highly competitive price point.

Open for Business

As you would expect from a carrier-grade platform, the OpenCloud Rhino Telecom Application Server can be used to develop and deploy applications that use both SS7-based protocols, such as INAP and CAP, IP protocols such as SIP and Diameter, and IT / Web protocols such as HTTP Servlet, SOAP, XML and Service Orientated Architecture (SOA)-based services. Critically, in a carrier-grade environment, OpenCloud Rhino provides a fault tolerant infrastructure that delivers continuous availability, low-latency service-logic execution and online management – even during network outages, hardware failure, software failure and platform maintenance operations.

The OpenCloud Rhino suite consists of a range of optional Rhino software components together with comprehensive deployment, support and development programmes.





SUMMARY

ADDRESSING YOUR CHALLENGES

REGAIN CONTROL OF
YOUR SERVICE ROADMAP

REDUCE THE COST
OF INNOVATION

ELIMINATE
LEGACY BARRIERS

NEW SERVICE REVENUE Achieve competitive differentiation by rapidly introducing smart telco services.

'SMART' INNOVATION IN augmentation enables innovation in the core telecom services, while the OpenCloud Telecom Application Server supports access to 'smart' next generation services and ultimately switches off the high cost legacy IN platform.

MARKET SEGMENTATION Segment your market and deliver targeted services; in turn, this helps increase customer loyalty while decreasing churn and time-to-market.

REDUCE OPEX Achieve rapid innovation, deployment, integration and ease of administration, while reducing the support burden on the network operations team.

COST CONTAINMENT Open interfaces means you don't have to decommission and replace; co-existence with your current Network Equipment Provider to evolve new applications without accruing additional costs.

COTS Commercial-off-the-shelf commodity hardware and software eliminates NG-IN and IN rigidities and restrictions, dramatically reducing costs, and ensuring radically lower price-points.

TRANSFORM THE SERVICE LAYER

Break down legacy barriers imposed by proprietary equipment vendors and deliver an agile and low cost development environment in the service layer.

STAYING OPEN Open up your service layer to a host of telecom service developers, to rapidly deliver innovative new services to market. Fully convergent: an open platform which fully supports IP protocols, standard and vendor variants of all SS7 signalling protocols.

MAXIMIZE EXISTING VALUE The delivery of an open, scalable platform that integrates with both open and proprietary infrastructures enables innovation whilst deriving maximum value from existing assets.

OUR SOLUTIONS

THE RHINO IMPACT

The OpenCloud Rhino™ Telecom Application Server (TAS) is the foundation stone of all OpenCloud products.

Service Composition and Service Interaction are commonly referred to as "SCIM" when discussing IP or IMS networks. For TDM SS7 networks, the terms "Service Broking" and Trigger Interaction Management (TRIM) are also used. The OpenCloud Rhino SIS performs these functions – for both IP and SS7 networks and also for mixed or hybrid situations.

Connectivity Packs

Connectivity Packs provide additional, optional interface functionality for the OpenCloud Rhino Telecom Application Server.

These packs offer a comprehensive set of Resource Adaptors (RA). RAs provide connectivity from Rhino to/from other equipment, such as other network elements, or IT systems. Rhino Connectivity Packs implement protocols such as SIP and Diameter in IP networks, CAMEL, INAP and a large selection of vendor variants for SS7 networks and SOAP, HTTP, LDAP and SQL in the IT domain.

Rhino Service Interaction Server

The Rhino Service Interaction Server (SIS) is a fully-featured, totally convergent Telecom Service Broker. Rhino SIS provides service composition and interaction functionality which allows operators to compose new services from their existing SS7 and IP services. Rhino SIS allows variant services to be created – using a graphical user interface – from existing services, whether they are IN, IMS or hybrids. Rhino SIS also optionally provides IM-SSF and R-IM-SSF functionality.

Rhino Charging Sentinel™

OpenCloud Rhino Charging Sentinel provides call and session control on a carrier-grade platform allowing a single, third-party on-line charging system (OCS) to be used, for both pre or postpaid subscribers. It implements the call and session control aspects of the next-generation online charging architecture defined in 3GPP TS 32.240. Meeting real-time telecom service requirements, it manages all interactions between the Online Charging System and the core network.

Third-party Applications

As the Rhino TAS platform is standards-based, it is widely used by independent telecom service developer companies. Third-party software product houses have produced a wide range of application products for Rhino that deliver telecom services to network operators. In addition, there is a thriving community of custom-build development companies with Rhino expertise that customise and develop new services and solutions to order. OpenCloud encourages and nurtures the third-party community via the OpenCloud Developer Portal (please see <http://developer.opencloud.com>)



The Java™ Difference JAIN SLEE

The open flexibility and power of Java is being adopted in the telecoms network – enabling the smooth integration of ‘write-once, deploy many times’ applications.

JAIN SLEE is the Java standard for SLEE (Service Logic Execution Environment).

JAIN SLEE (or JSLEE), is the telecom network equivalent of Java Enterprise Edition (JEE). It ensures complete interoperability, irrespective of the underlying network technology. The result; fast integration and even faster service development and delivery.

JAIN SLEE is designed specifically to allow implementations of the standard to meet the stringent requirements of network signalling telecommunications applications.

The JAIN SLEE specification is also designed for implementations to achieve scalability, throughput and resilience to failure.

THE ECOSYSTEM

OpenCloud's ecosystem of partners and ISV's provides a wide range of applications for the Rhino platform for classic telecom and telco 2.0 services.

This ecosystem provides the environment to drive widespread innovation around the Rhino platform. For the first time in telecoms, third party developers can build genuinely portable applications. OpenCloud Rhino provides a pluggable, standards-based Resource Adaptor interface that allows connectivity between the application server and the outside world – be it to the telecommunication network, directory services such as LDAP, databases or other IT systems, for example, location servers.

Such applications include; Converged IP-PBX, IP-Centrex, Virtual Private Networks (VPN), real-time texting, personalised ring back tones, advertisement sponsored calling, personalised call control rules, prepaid service call control, multiple numbers per device, call control and call continuity, online charging mediation and real-time charging.

Developer Tools

OpenCloud's developer portal boasts a large and growing community of Java developers building telecom services. The portal provides a federated Service Creation Environment (SCE): OpenCloud service development and testing tools, OpenCloud Rhino product data, for example, benchmarks and recommended configurations, training, how-to-guides, technical support, whitepapers, FAQs and developer resources.

Professional Services

OpenCloud offers specialised consulting, implementation, training and 7 x 24 support for customers and partners.

Complete Solutions

OpenCloud is working with a global ecosystem of partners and developers to build, deliver, integrate and support end-to-end solutions for global network operators and service providers.

OpenCloud Rhino is available direct or through selected partners.

OpenCloud is proud to be helping some of the world's largest and fastest growing operators to provide innovative telecommunication services

MIGRATION AND DEPLOYMENT

In addition to delivering an open execution environment for telecom service delivery today, OpenCloud delivers a migration path that adds value to the network while allowing the operator to maximise return on their investments in legacy platforms.

But, even in today's fiercely competitive market, the importance of agile, low-cost new service delivery fuels a continued appetite for complete IN replacement – based on the acceptance of an all-IP future and the desire of many operators to reach this goal as quickly as possible. Being able to support both strategies is key in an increasingly disparate global telecoms environment.

The Next Generation

The 'augmented IN' approach takes operators to a Next Generation IN (NGIN) architecture without requiring a complete IN platform replacement. OpenCloud Rhino sits alongside the legacy IN platform. The new Telecom Application Server and/or Telecom Service Broker then 'augments' the existing platform by delivering access to a host of 'smart' next generation services.

Indeed, simply by using a graphical user interface with drag/drop design, operators can utilise the service interaction capabilities of OpenCloud Rhino SIS to create new converged telecom services and service variants. Service interaction creates new / variant services by orchestrating combinations of existing IN or SIP-hosted services and introduces additional service logic hosted on the Rhino Telecom Application Server – 'telecom service mashups' if you like.

Applications from older, more restricted or costly platforms can then begin the migration journey until all legacy services are transitioned and the high-cost legacy IN can be switched off.

IN replacement, of course, significantly speeds this process. It rapidly eliminates the OPEX requirement for supporting legacy systems, while it also provides immediate access to a new world of smarter, more intelligent telecom services.

During the migration stage, applications are built in OpenCloud Rhino's flexible development environment, creating spare capacity in existing proprietary IN platforms. Significantly, this enables operators to decommission some altogether. This is particularly relevant today as an increasing number of IN platforms are being 'end-of-lived' by equipment vendors.

Replacing tonnes of proprietary hardware with a few racks of standard IT server hardware delivers immediate capital, space, power and management cost savings, while creating a standards-based open platform for application development and service delivery.

For further information

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