How You can take cost out of complexity and improve customer experience with service automation?

connecting the world

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About the Speaker
Scott Argue – Vice President – Customer Service

- BSc – Computer Science
- 25+ Years of Varied IT Experience
  - 12 Years Experience with SaskTel and SaskTel International
  - 14 Years of progressive IT experience in private business in the areas of software development, Local and Wide Area Networking, IP Telephony and IT Procurement
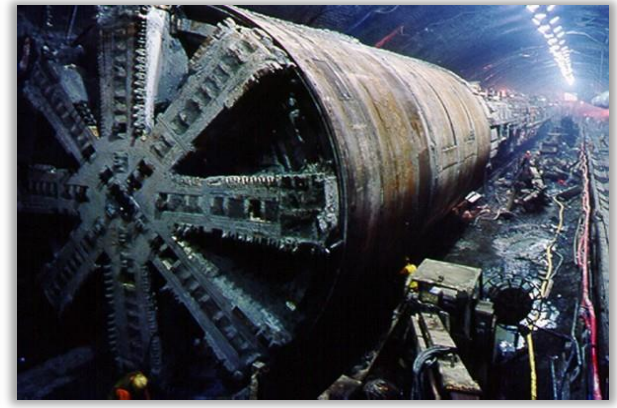
SaskTel International Overview

- Established 1986
- Mandate to empower communications service providers in 'Connecting the World'
- OSS software solutions and communications consulting services

SaskTel
International

SaskTel International & SaskTel Overview

- Subsidiary of operating CSP (SaskTel)
  - Multi-service, $B provider, **100+** years operating experience
- 'Solutions developed by a service provider for service providers'
- Access to experience, expertise, best practices and lessons learned of an industry leading operator

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Continual Change Ahead

- Technology is growing exponentially
- Service Provider landscape is evolving
    - Competition
    - Solutions
    - Models
- Customer behaviours are evolving
- Economic conditions are changing

Service Providers Must Adapt

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Trends (Highly Regarded "Words" of the Industry)

Network Virtualization (NFV)   Data Analytics   WebRTC   CAPx / OPx

Software Control (SDN)   Customer Experience   5G Wireless

Web-centric

LTE   Programmability   Evolving Technologies   Broadband   Data Center

Big Data   Agile   Internet   Internet of Things   Growth / Consumption

Transformation   Service Provider Integration with 3rd parties   IoT   FTTx

User Portals   APIs   Scale   HetNet   New Models   G.fast

Policy Control   Scalable   Network Service Factories   Cloud …
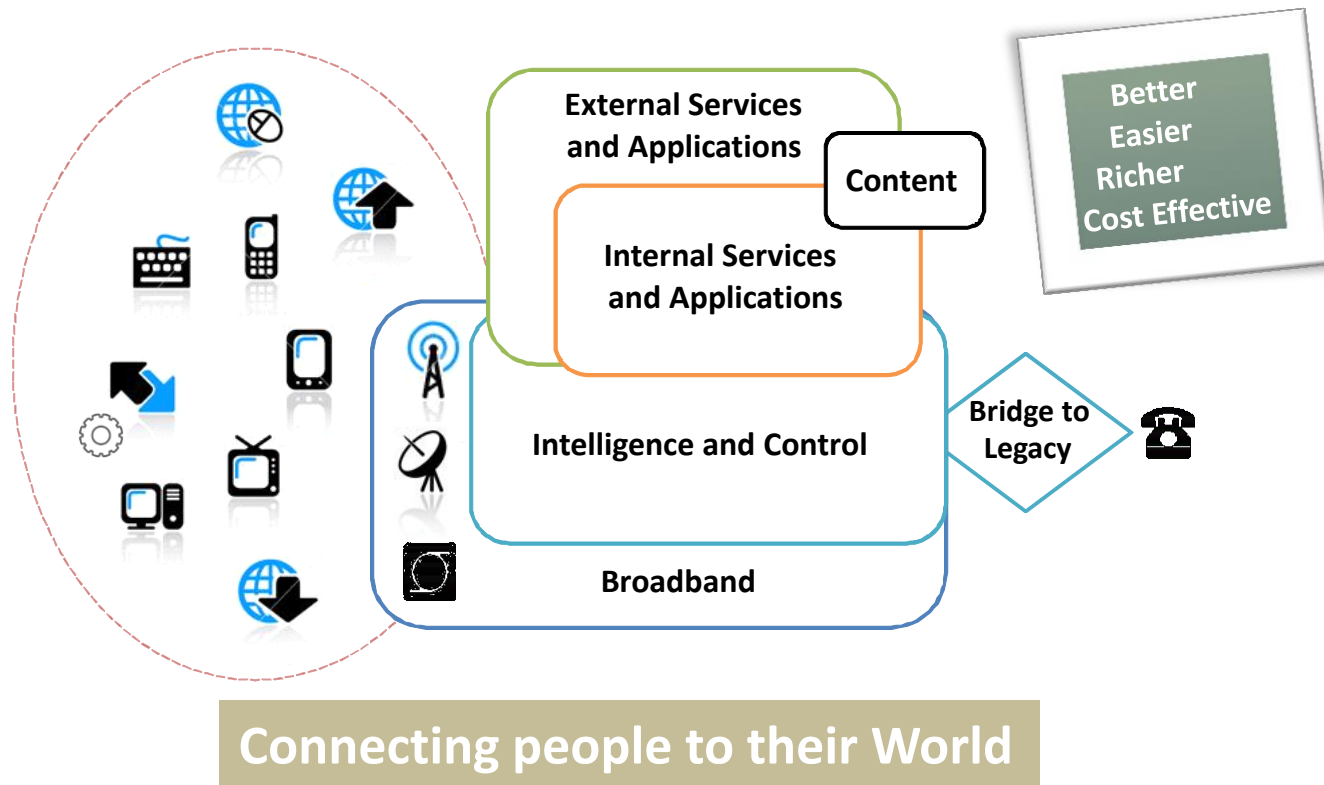
New Services   Agility   Partners   Economics
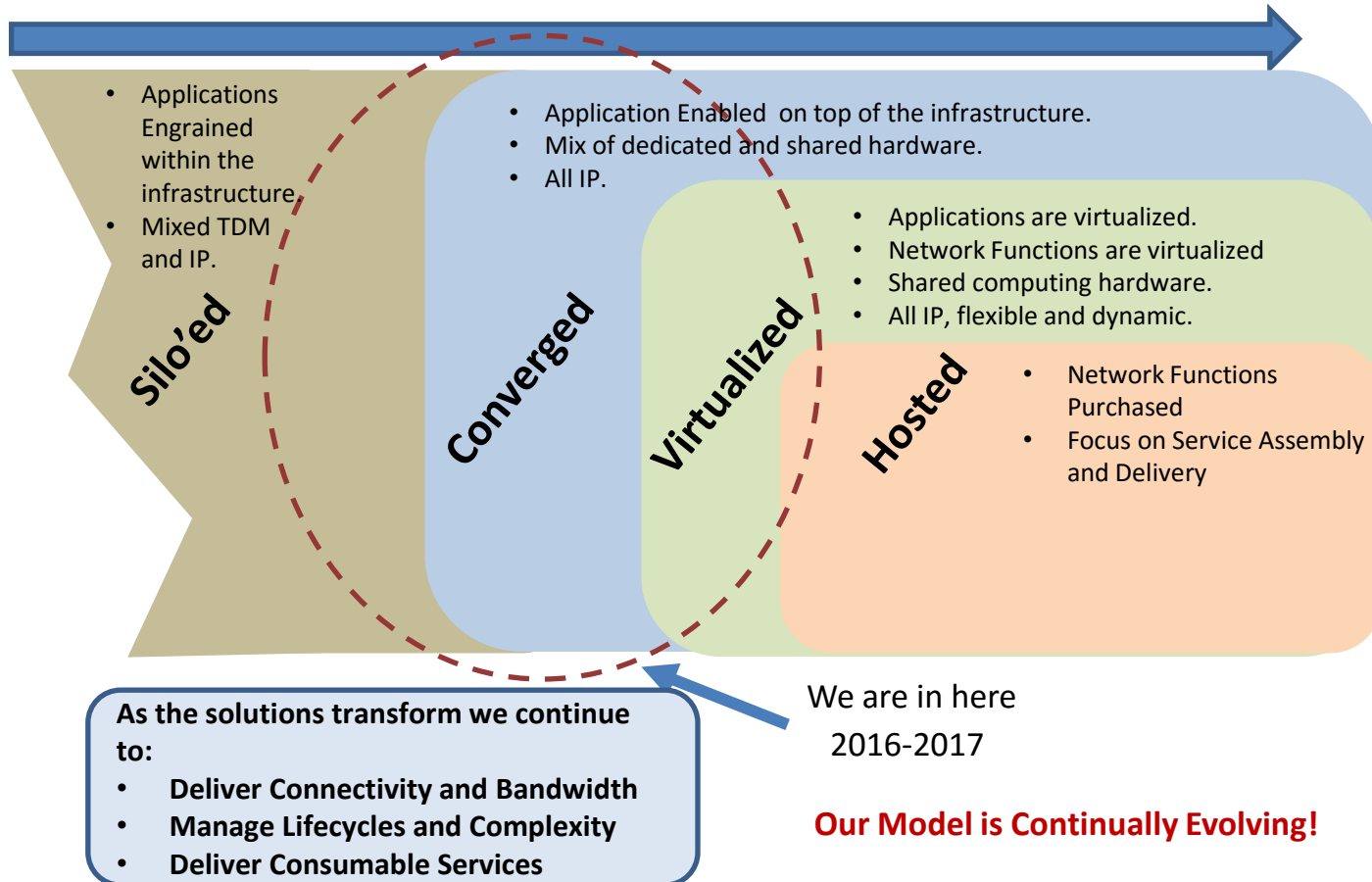
Security   Efficiency   Apps   DevOps

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The Anything, Anywhere, Anytime Network

Fixed Wireless

xDSL

IP Access

Wi-Fi

Mobile Wireless

Fibre

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Network Vision

External Services and Applications

Content

Internal Services and Applications

Intelligence and Control

Bridge to Legacy

Broadband

Better
Easier
Richer
Cost Effective

Connecting people to their World

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Network Transformation

- Applications Engrained within the infrastructure.
- Mixed TDM and IP.

Silo'ed

- Application Enabled on top of the infrastructure.
- Mix of dedicated and shared hardware.
- All IP.

Converged

- Applications are virtualized.
- Network Functions are virtualized
- Shared computing hardware.
- All IP, flexible and dynamic.

Virtualized

- Network Functions Purchased
- Focus on Service Assembly and Delivery

Hosted

We are in here
2016-2017

As the solutions transform we continue to:
- **Deliver Connectivity and Bandwidth**
- **Manage Lifecycles and Complexity**
- **Deliver Consumable Services**

Our Model is Continually Evolving!
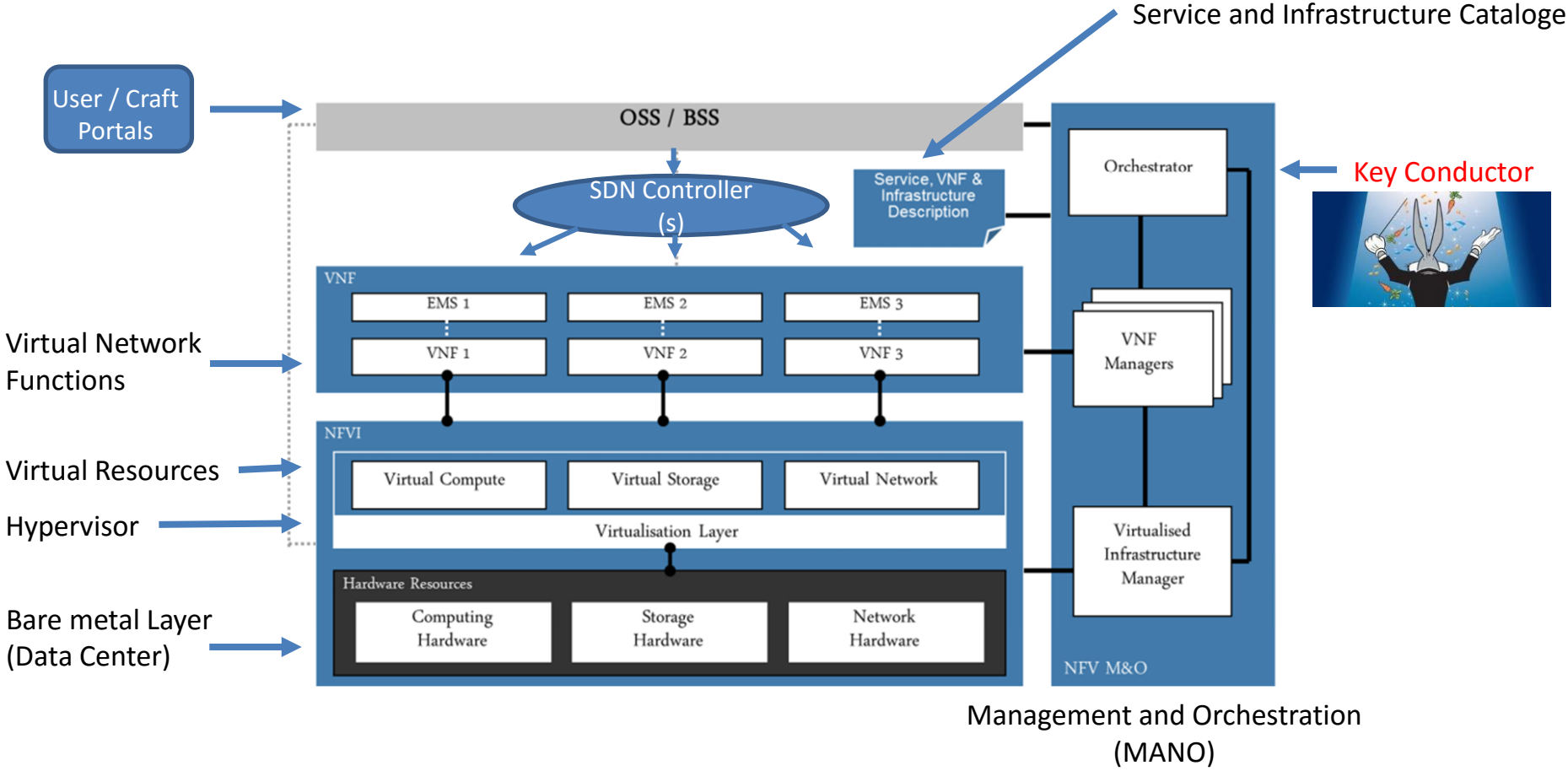
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Network Virtualization

- Network Function Virtualization (NFV) and Software Defined Networks (SDN) are changing how network solutions are deployed and operated.

- The industry is driving the use of software to gain significant improvements in capability and capacity with improved efficiencies, costs and responsiveness to customer needs.

- NFV is an initiative to generate software based network functions operating on dynamic high performance computing, storage and network physical environments, replacing traditional dedicated hardware based solutions.

- SDN provides tasks such as auto configuration and policy management.

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NFV Framework

Service and Infrastructure Cataloge

Key Conductor

User / Craft Portals

OSS / BSS

SDN Controller (s)

Service, VNF & Infrastructure Description

Orchestrator

VNF

EMS 1 EMS 2 EMS 3

VNF 1 VNF 2 VNF 3

VNF Managers

Virtual Network Functions

NFVI

Virtual Resources

Virtual Compute Virtual Storage Virtual Network

Virtualisation Layer

Hypervisor

Hardware Resources

Computing Hardware Storage Hardware Network Hardware

Virtualised Infrastructure Manager

Bare metal Layer (Data Center)

NFV M&O

Management and Orchestration (MANO)

Case Study

The Problem: DSL Internet Activation Process was slow and error prone

Silo'ed Activities:

- Multiple vendor systems to provision a "solution":
  - Multiple UI's need to be navigated to provision a service end to end
  - Vendors each have their own proprietary solution
  - Each system requires individual training
- Provisioning these manually and individually presents problems:
  - Costly
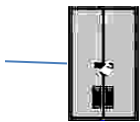 - Slow
  - Risk of Human Error
  - Risk of Fraud

ISP

Ethernet Server

ISP

Ethernet Server

DX

DX

Subscriber Address
Local Access
Transport Access
Connections
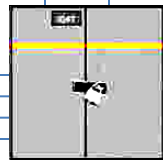Other Inventory
Services

DSLAM

**Broadband Services
Voice Services
TNs, other**

Serving
Terminal
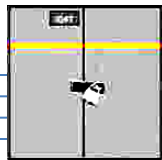
Cross Connect

Cross Connect

Voice equipment

Voice Mail Server

The Solution:

Automate the provisioning process:

- Automated Activation
- Automated Modification
- Automated Service Suspension
- Automated Deactivation

Allow the automated processes to be managed through a single User Interface (UI):

- Starting the process in the central UI kicks off the process to provision all network elements to create the service end to end.
- Focuses training on a single user interface for technicians to provision services.

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ISP

ISP

Ethernet Server

Ethernet Server

SERVICE ORDER

Where

What

When

DX

DX

ASSIGNMENT

Assign optimal equipment
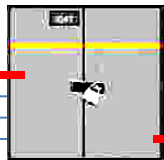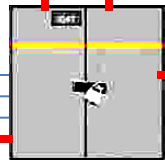
Minimize manual work

Determine Activation/Tickets

DSLAM

Video
High Speed Data
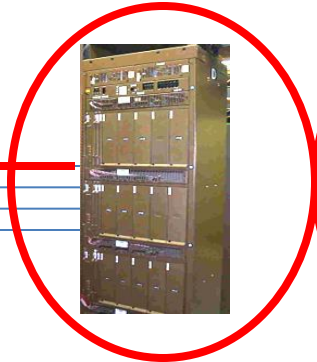**Voice**
Voice Mail

Serving Terminal

Cross Connect
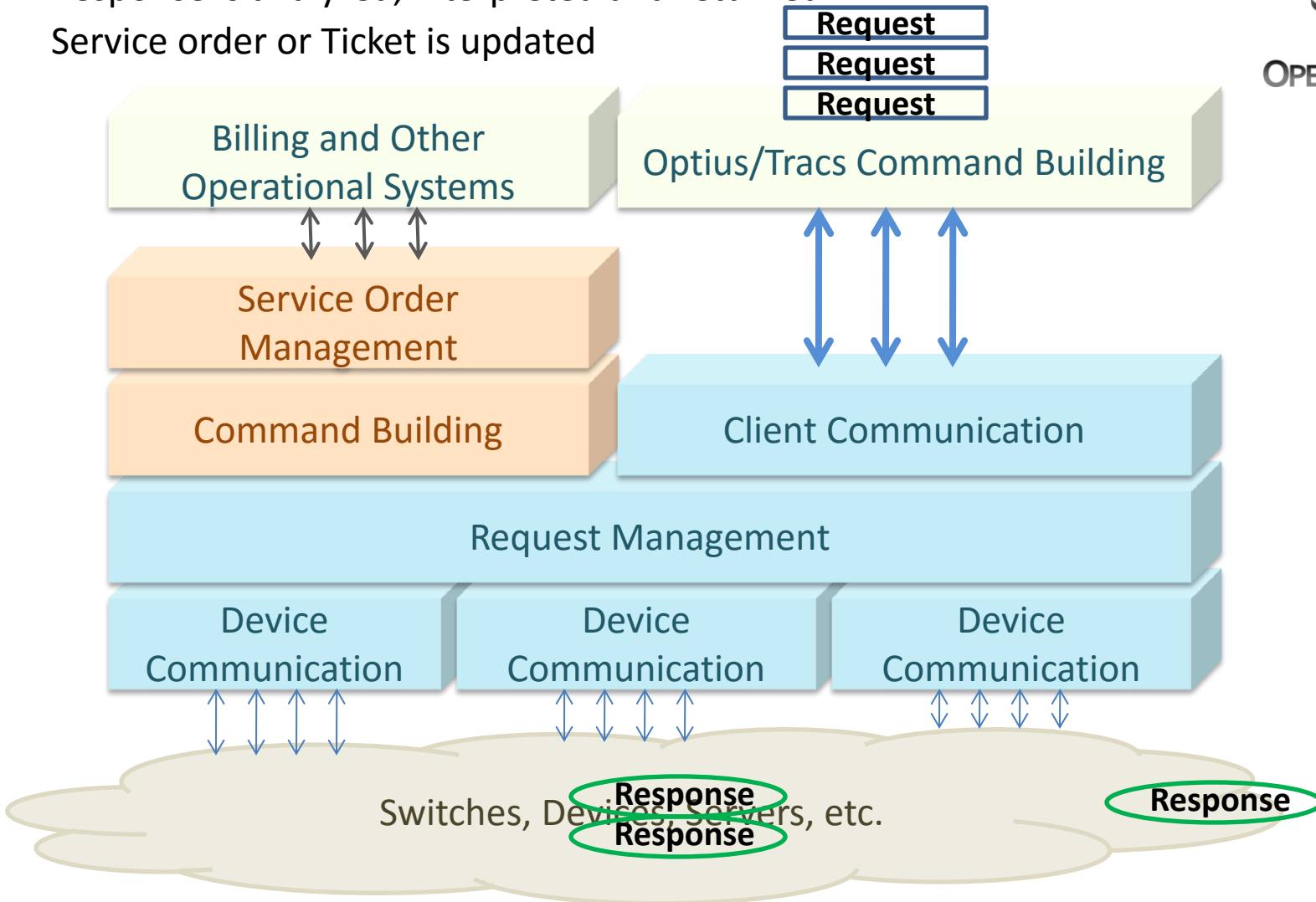
Cross Connect

Voice equipment

Voice Mail Server

ACTIVATION

Activation or Line Test request is generated
Request sent to OSG and then Network Element
Response is analyzed, interpreted and returned
Service order or Ticket is updated

Request
Request
Request

OPEN SWITCH GATE

Billing and Other Operational Systems	Optius/Tracs Command Building

Service Order Management	

Command Building	Client Communication

Request Management

Device Communication	Device Communication	Device Communication

Response

Response

Switches, Devices, Servers, etc.

Response

Auto-Provisioning –
The Benefits of the full solution

- Assignment of DSL Orders has decreased by 3 minutes per order
  - Monitoring tasks from billing system
- Decreased overall service delivery time by days
- Accurate inventory of network / facilities
- Visibility into DSL path
- Lower number of truck rolls (Left in facilities)
- Standardization of Assignment and Programming processes and responsibilities

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Service Delivery

Manual Process – Vs - Auto Process

- DSL Assignment time ~ 3 Minutes

- Assignment made 2 to 3 days into order life

- Maintain workaround information

- No view into customers true path

- Manual population of work ticket info

- DSL Assignment time ~ 10 Seconds

- Assignment made at time order taken

- Maintain Correct inventory

- Accurate view into customers path

- Auto population of work ticket info

Activation Spectrum

HLR and Class 5 Switches	Application Servers	SMSC Servers
Messaging Servers	Databases	Service Delivery Platforms
OMA/DM Servers	AAA Servers	Multi-use Devices
LDAP Servers	Push-to-Talk Servers	Third Party Service Portals
Routers	Docsis Equipment	NGDLC Equipment
Voice Switches	ATM Switches	HLR Switches
VoIP Switches	Network Bridges	Messaging Servers
Gateways	DSLAMS	Middleware Servers

Who We Are
About SaskTel International

SI Solutions Portfolio

Products

- Operational Support System (OSS) Software
- Fulfillment and assurance
- Large and small CSP customers
- Enabling CSPs to:
  - Drive automation
  - Optimize operations
  - Reduce Costs

Services

- Strategic and operational consulting
- Managed ICT solutions
- Built on experience, expertise, lessons-learned and resources of operating CSP

Global ICT Experience

- Engagements in 40 countries and 6 continents

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