How You can take cost out of complexity and improve customer experience with service automation?
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 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
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
Trends (Highly Regarded “Words” of the Industry)

- Network Virtualization (NFV)
- Software Control (SDN)
- Programmability
- Network Service Factories
- Data Analytics
- WebRTC
- Customer Experience
- 5G Wireless
- Evolving Technologies
- Broadband
- Data Center
- Internet of Things
- Growth / Consumption
- Service Provider Integration with 3rd parties
- IoT
- FTTx
- G.fast
- Cloud...
- LTE
- Cloud ...
- Apps
- Economics
- DevOps
- User Portals
- APIs
- Policy Control
- New Services
- Security
- Scale
- HetNet
- Scalable
- New Models
- Network Service Factories
- Agility
- Partners
- Efficiency
The Anything, Anywhere, Anytime Network

IP Access

- Fixed Wireless
- xDSL
- Wi-Fi
- Mobile Wireless
- Fibre
Network Vision

Connecting people to their World
Network Transformation

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

Our Model is Continually Evolving!

We are in here 2016-2017
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.
NFV Framework

- User / Craft Portals
- OSS / BSS
- SDN Controller(s)
- VNF
  - EMS 1
  - EMS 2
  - EMS 3
  - VNF 1
  - VNF 2
  - VNF 3
- Virtual Resources
- Virtual Network Functions
- Hypervisor
- Bare metal Layer (Data Center)
- Service and Infrastructure Catalogue
- Service, VNF & Infrastructure Description
- Orchestration
- VNF Managers
- Virtualised Infrastructure Manager
- NFV M&O
- Management and Orchestration (MANO)
- Key Conductor

- Virtualisation Layer
- Virtual Compute
- Virtual Storage
- Virtual Network
- Hardware Resources
  - Computing Hardware
  - Storage Hardware
  - Network Hardware

SaskTel International
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
Serving Terminal
Cross Connect
Cross Connect
ISP
Ethernet Server
ISP
Ethernet Server
Subscriber Address
Local Access
Transport Access
Connections
Other Inventory
Services
Broadband Services
Voice Services
TNS, other
Serving Terminal
Cross Connect
DX
DSLAM
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.
**SERVICE ORDER**
Where
What
When

**ASSIGNMENT**
Assign optimal equipment
Minimize manual work
Determine Activation/Tickets

- Video
- High Speed Data
- Voice
- Voice Mail
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
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
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

<table>
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<tr>
<th>HLR and Class 5 Switches</th>
<th>Application Servers</th>
<th>SMSC Servers</th>
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<tbody>
<tr>
<td>Messaging Servers</td>
<td>Databases</td>
<td>Service Delivery Platforms</td>
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<td>OMA/DM Servers</td>
<td>AAA Servers</td>
<td>Multi-use Devices</td>
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<td>LDAP Servers</td>
<td>Push-to-Talk Servers</td>
<td>Third Party Service Portals</td>
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<td>Routers</td>
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<td>Voice Switches</td>
<td>ATM Switches</td>
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<td>VoIP Switches</td>
<td>Network Bridges</td>
<td>Messaging Servers</td>
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<tr>
<td>Gateways</td>
<td>DSLAMS</td>
<td>Middleware Servers</td>
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Who We Are

About SaskTel International
## SI Solutions Portfolio

<table>
<thead>
<tr>
<th>Products</th>
<th>Services</th>
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<tbody>
<tr>
<td>- Operational Support System (OSS) Software</td>
<td>- Strategic and operational consulting</td>
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<tr>
<td>- Fulfillment and assurance</td>
<td>- Managed ICT solutions</td>
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<tr>
<td>- Large and small CSP customers</td>
<td>- Built on experience, expertise, lessons-learned and resources of operating CSP</td>
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<tr>
<td>- Enabling CSPs to:</td>
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<tr>
<td>o Drive automation</td>
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<td>o Optimize operations</td>
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<tr>
<td>o Reduce Costs</td>
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Global ICT Experience

- Engagements in 40 countries and 6 continents