

IPTV World Forum 2010

As IPTV deployments mature...
...the reality of Opex is setting in.



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About Mariner – Corporate Profile

Telco TV Pioneer

- Canadian-based company; 120 people (60% R&D & SW Eng'g)
- Privately held: profitable every year
- Founders built & operated Canada's first commercial IPTV service (NBTel, 1999)
- Focus: Improve the end to end IPTV service to reduce cost of Customer Service

Proven innovation that delivers results

- xVu – Service and Network Assurance Platform for IPTV QoE
- 5 years of R&D, lab and field testing: now in Release 4
- Commercially deployed (Canada, Caribbean, US, Asia Pac, ...)
- Now monitoring delivery of more than 250 SD/HD channels to 250,000 STB 7x24
- Payback in one year: quantifiable benefits at least 3 X cost of xVu

Ecosystems, Customers and Partners

Ecosystems



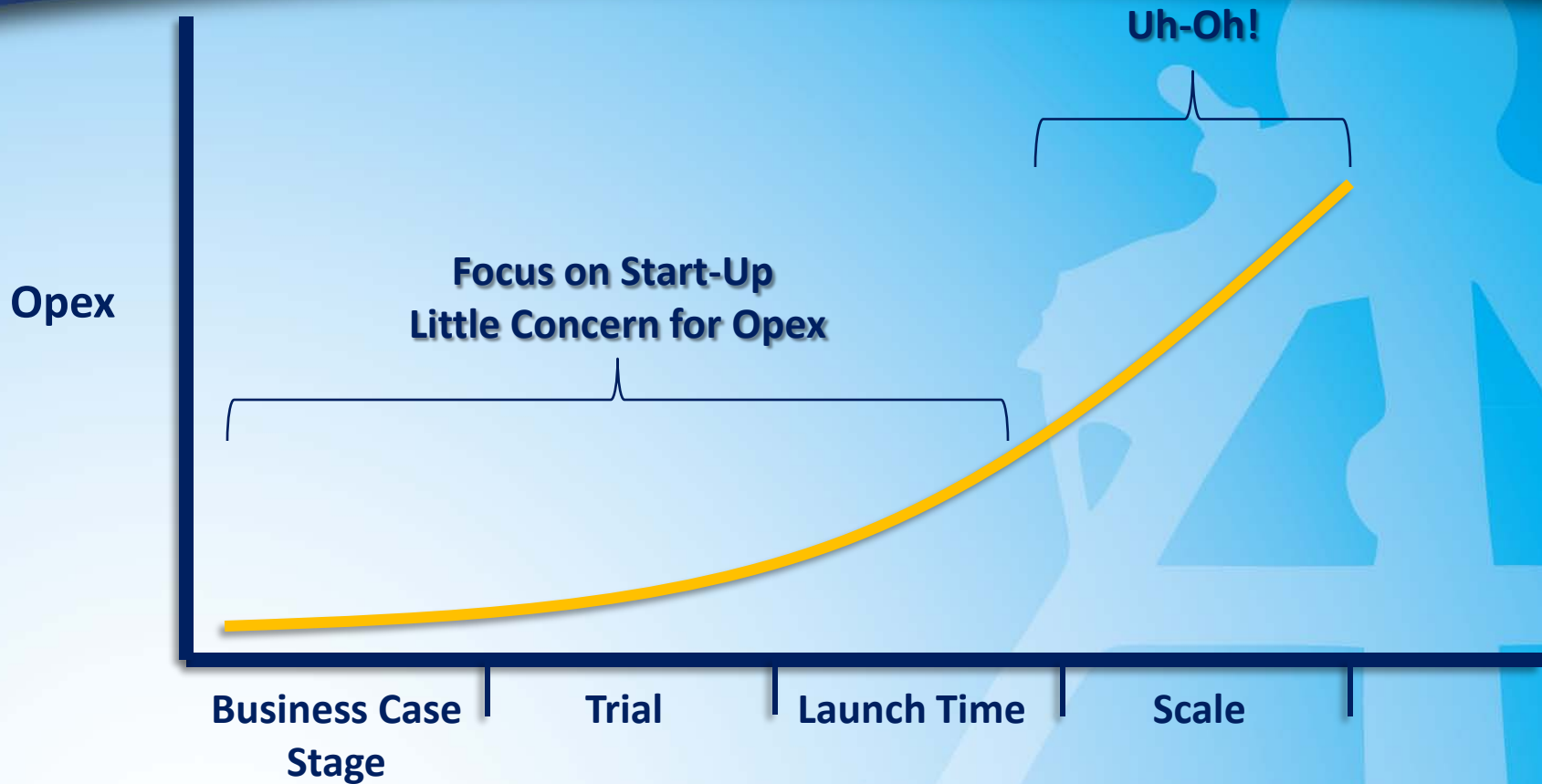
Partners



Sample Customer Portfolio



Understanding the Opex Challenge



The nature and impact of Opex often sets in when scaling

The Customer Experience



What Just Happened?

Customer Experience (with First-Gen SA)

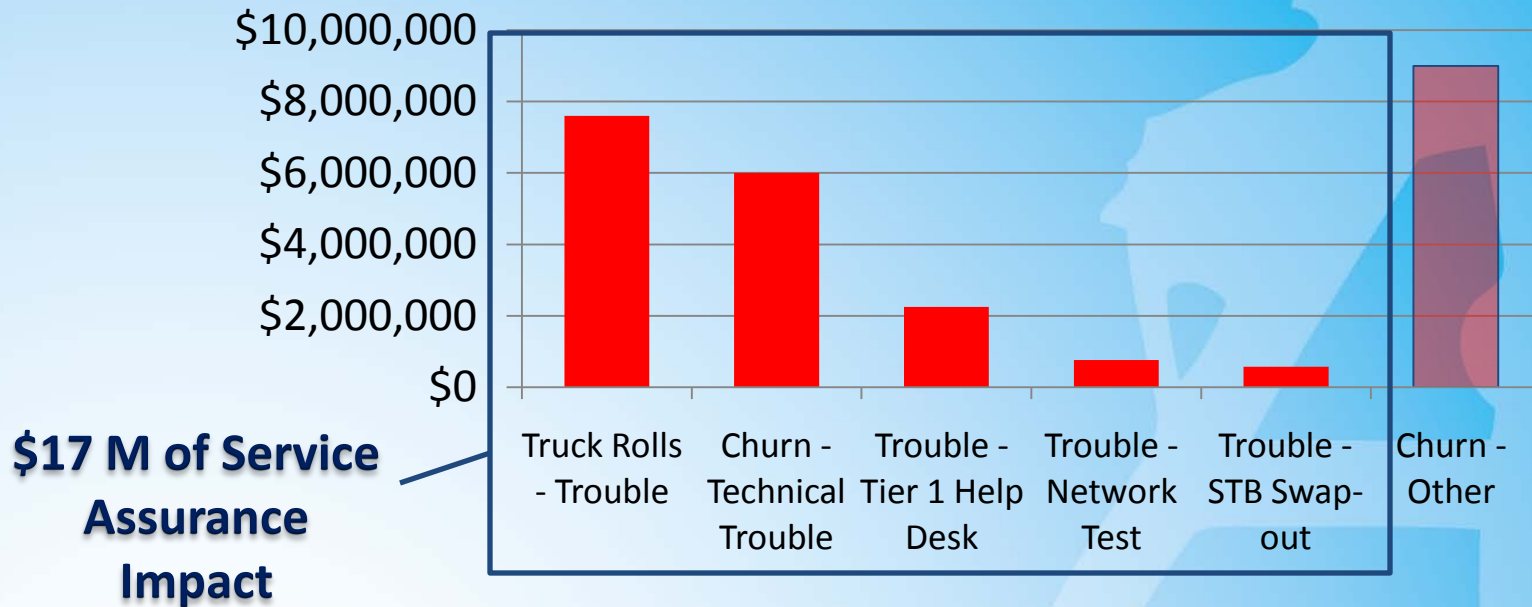
From customer surveys in Canada and the US

“The system is unstable and the performance unpredictable” “I had several problems with the movie channels being down” “He came back and replaced the box again – picture still fuzzy” “Channels seem to come and go” “It took 2 weeks to get the service working” “Some HD channels you don’t get the full screen” “Showed up with 3 people for 8 hours to install” “I’d give your service a B- or C+” “Lost the signal” “I was not able to get a signal” “Recorded a program but there was no sound” “My computer is slower” “Some channels occasionally freeze” “The whole repair process is a pain” “Sometimes the sound and the picture are out of synch” “I have to unplug the box once or twice a week” “The guide is slow” “The remote seems slow”

What is the impact on Opex?

Poor Customer Experience Drives Opex

\$26M Annual Opex 100K IPTV HH with First-Gen Service Assurance



Telco Service Assurance cost is 2 - 3 X HFC Cable or Satellite

Why are Service Assurance costs so high?

- Rely on customers to monitor the end to end IPTV service
 - Especially ultra-high performance last mile and home networks
 - Customers cannot provide technical detail needed to troubleshoot
- First-Gen Service Assurance Technology cannot “see” most problems
 - Deep inspection of IP or video via hardware based monitoring probes
 - Hardware costs prohibit widespread use (\$1000’s/probe)
 - Blind spot in last mile and home, where many problems arise
- First-Gen Service Assurance tools are not aware of the customer
 - No way to know which customers are affected by problems seen in the network
 - Difficult to correlate customer complaints to data produced by probes

First-Gen approaches rely on customers to monitor problems in the end to end service

Customer Experience (with First-Gen SA)

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**What if we could automatically capture the details
- and isolate the source - of these problems?**

Next-Generation Service Assurance

Mariner Approach:

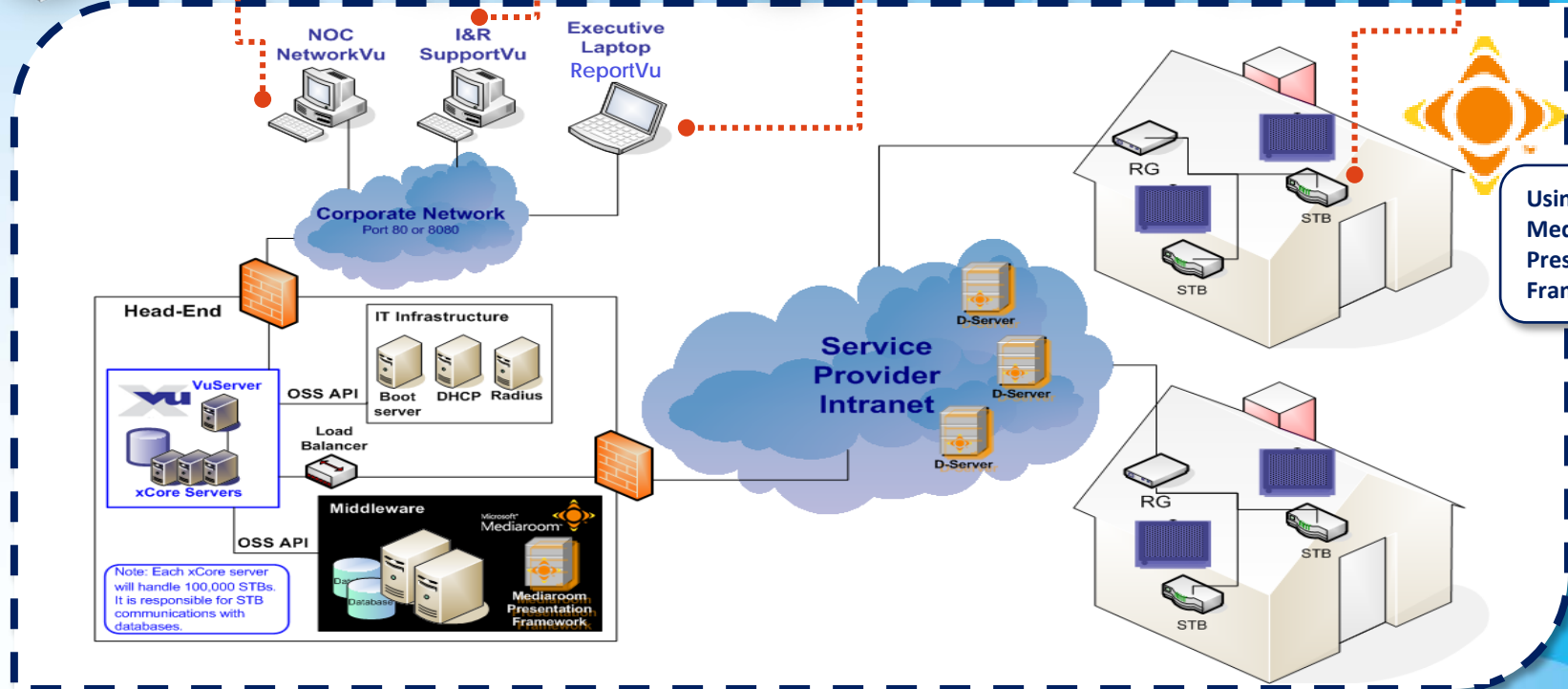
Operating Experience +
Service Assurance Innovation +
Customer Feedback and Learnings =



Next-Generation Service Assurance

- Low cost compact software probes vs. hardware based probes
 - **1/1000 cost** of hardware based probes
 - Allows low cost monitoring of traditional blind spots (last mile and home)
- Use data from large numbers of probes to triangulate problems
 - Detect and prioritize problems before customers complain
- “Customer-aware” Service Assurance technology
 - Reduce dependence on customers to monitor the service
 - Prioritize network maintenance and upgrades to meet customer needs
- Evolve Network and Service Assurance practices to meet needs of IPTV
 - Well trained Network and Customer Service team
 - Smart Truck Roll, Smart Re-Boots, STB Swaps
 - Detect silent outages: Network Change Control and Verification

xVu: Next Gen Service Assurance



Note: Each xCore server will handle 100,000 STBs. It is responsible for STB communications with databases.

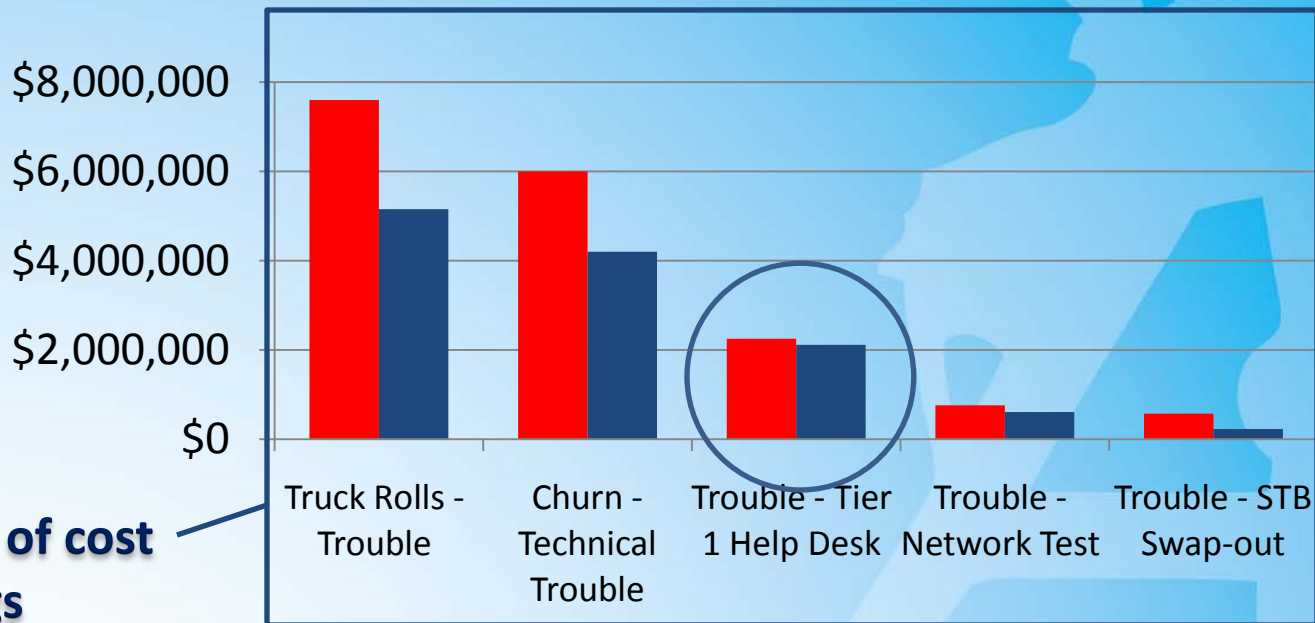
Improve Customer Experience: Reduce Costs

xVu: an end-to-end view of your TV delivery system:

- Detect silent network failures in less than 5 minutes
- Cut mean time to repair by 15-20%
- Improve 1st call resolution by 50%
- Reduce “blind” truck rolls
- Enable “smart” truck rolls and STB re-boots
- Help with support head count efficiency
- Ensure installation quality

**Effective SA deployment can deliver 3-10X payback
on the investment**

Next-Gen Service Assurance: Cost Savings



\$4.8M/year of cost savings

Annual Savings of \$4.8 M with Next-Generation IPTV Service Assurance

Summary

- Opex is a “hard nut to crack”.
- The reality of Opex sets in when you scale.
- Poor customer experience drives Opex.
- First-Generation Service Assurance: falling short.
- Next-Gen Service Assurance is now in production.
- Mariner’s leadership are former TV Service Providers.
- Our customers are telling us... xVu hits the sweet spot of cost containment (Opex) and customer satisfaction.
- Make the SaskTel success story... your story.

Mariner – Partners In Innovation

Thank You

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