Your facility is not a pet

Turner’s IP Video Infrastructure Strategy
Michael Koetter
VP Digital Media Systems, Turner Global Technology and Operations
Why move to IP?
Outcomes

Consumer Centric
Data Driven
Agile
Secure
Requirements

6,000 inputs across 3 facilities

Consolidated live QC operations

Legacy control integration with Evertz Quartz & GV Jupiter
Some Typical Considerations

Endpoints
Protocols
Control (SDN)
Packet Switching
Monitoring
This is not just about SDI replacement!
DOH! IT’S ABOUT SOFTWARE!
If you want to see what’s coming with video… look to audio.
Modern audio

100% software based production and distribution

Massive, unheard of processing capabilities.

Multivendor landscape of standards based plugins and interfaces

Designer “device chains” available for sale.
In software engineering and computer science, abstraction is a technique for managing complexity of computer systems. It works by establishing a level of complexity on which a person interacts with the system, suppressing the more complex details below the current level.

Wikipedia
We won’t just write code to define infrastructure. We’ll write code that writes code to define infrastructure.

You can quote me on that.
You think you have a lot of endpoints now...

**Media Microservices**

The term "Microservice Architecture" has sprung up over the last few years to describe a particular way of designing software applications as suites of independently deployable services. While there is no precise definition of this architectural style, there are certain common characteristics around organization around **business capability**, **automated deployment**, **intelligence in the endpoints**, and **decentralized control of languages and data**.

-- Martin Fowler

[http://martinfowler.com/articles/microservices.html](http://martinfowler.com/articles/microservices.html)
Back to the future
It seems big today, but is it big enough?

Assuming a fully expanded 40RU EXE system (2304 ports) and 3x 3G signals in both directions on all ports, total number of 3G streams = 6 x 2304 = 13,824 streams.

- Evertz
What could we do with on-demand, automated infrastructure?

Blocks of functions that can be instantiated instantly.

Network variants

Temporary networks

Fan networks
YOUR MEDIA FACILITY IS NOT A PET
Service Model

- Pets are given names like pussinboots.cern.ch
- They are unique, lovingly hand raised and cared for
- When they get ill, you nurse them back to health

- Cattle are given numbers like vm0042.cern.ch
- They are almost identical to other cattle
- When they get ill, you get another one

- Future application architectures should use Cattle but Pets with strong configuration management are viable and still needed
We need for a couple wranglers to drive a herd of thousands cattle.
A new mindset...

Fired | Wired
A new mindset...

Fired
Virtual Machines

Wired
A new mindset...

**Fired**
Virtual Machines

**Wired**
Containerized Workloads
A new mindset...

**Fired**
Centralized alerts

**Wired**
A new mindset...

**Fired**
Centralized alerts

**Wired**
Centralized logging & analytics
A new mindset...

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<th>Fired</th>
<th>Wired</th>
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A new mindset...

Fired
Configuration management databases

Wired
Self describing infrastructure
A new mindset...

Fired

Capex

| Wired

|
A new mindset...

**Fired**
Capex

**Wired**
Usage driven
A new mindset...

**Fired**
Continuous Integration

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**Wired**
A new mindset...

Fired
Continuous Integration

Wired
Continuous Delivery
A new mindset...

Fired
Tier 1 resolution

Wired
A new mindset...

**Fired**
Tier 1 resolution

**Wired**
Tier 1 troubleshooting
A new mindset...

Fired
Release management, Change Freezes

Wired
A new mindset...

Fired
Release management, Change Freezes

Wired
Deploying without fear
A new mindset...

Fired
Perimeter based security

Wired
A new mindset...

**Fired**
Perimeter based security

**Wired**
Identity based security