

Managing in the Mega Data Environment

Implications in management, planning, and finance

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Key Presentation Take-Aways

- Data is everywhere – take advantage of it
- Situational awareness is vital for operational and financial performance
- Fielded assets are a live part of office network
- Automate analysis processes and continually look for new ways to collect data and derive metadata



Situational Awareness

- Mobile and stationary assets in field
- Extremely expensive vehicles, with lots of moving parts
- Dozens to hundreds of passengers per vehicle/consist
- External threats to safety and security
- Liability and passenger satisfaction

Opportunity for Data is Everywhere

- Passenger Wi-Fi
- Infotainment displays
- Digital signage
- Internal and external safety and security video and audio
- Electronic farebox
- Passenger counter
- Vehicle performance
- Vehicle dynamics
- Vehicle maintenance
- Emergency driver notification
- Tire pressure and temperature sensing
- Tire traction and slip measurement
- Public Safety remote access
- Automatic vehicle location
- Bike rack occupancy
- Interior/exterior temperature
- Fuel level / battery charge
- Fuel conservation and monitoring systems
- Traffic flow and weather
- Traffic signal pre-emption
- Handicap spaces
- Bike rack spaces



Maintenance vs Repair

- Agencies constantly faced with managing and maintaining a range of physical assets
- Assets require ongoing maintenance and repair
- Asset performance directly impacts bottom line
- Maintaining and improving performance of assets a required yet costly task
- Maintenance teams get by with less resources yet more information and data than before
- Only with reliable and current data is it practical to sort out what is critical need and what is not

Improved Analytics

- Asset management becomes more sophisticated
- No longer sufficient or cost-effective to wait until an asset fails
- Recognize the problem before the failure
- Act to repair before it impacts operational efficiency, customer satisfaction, or creates liability

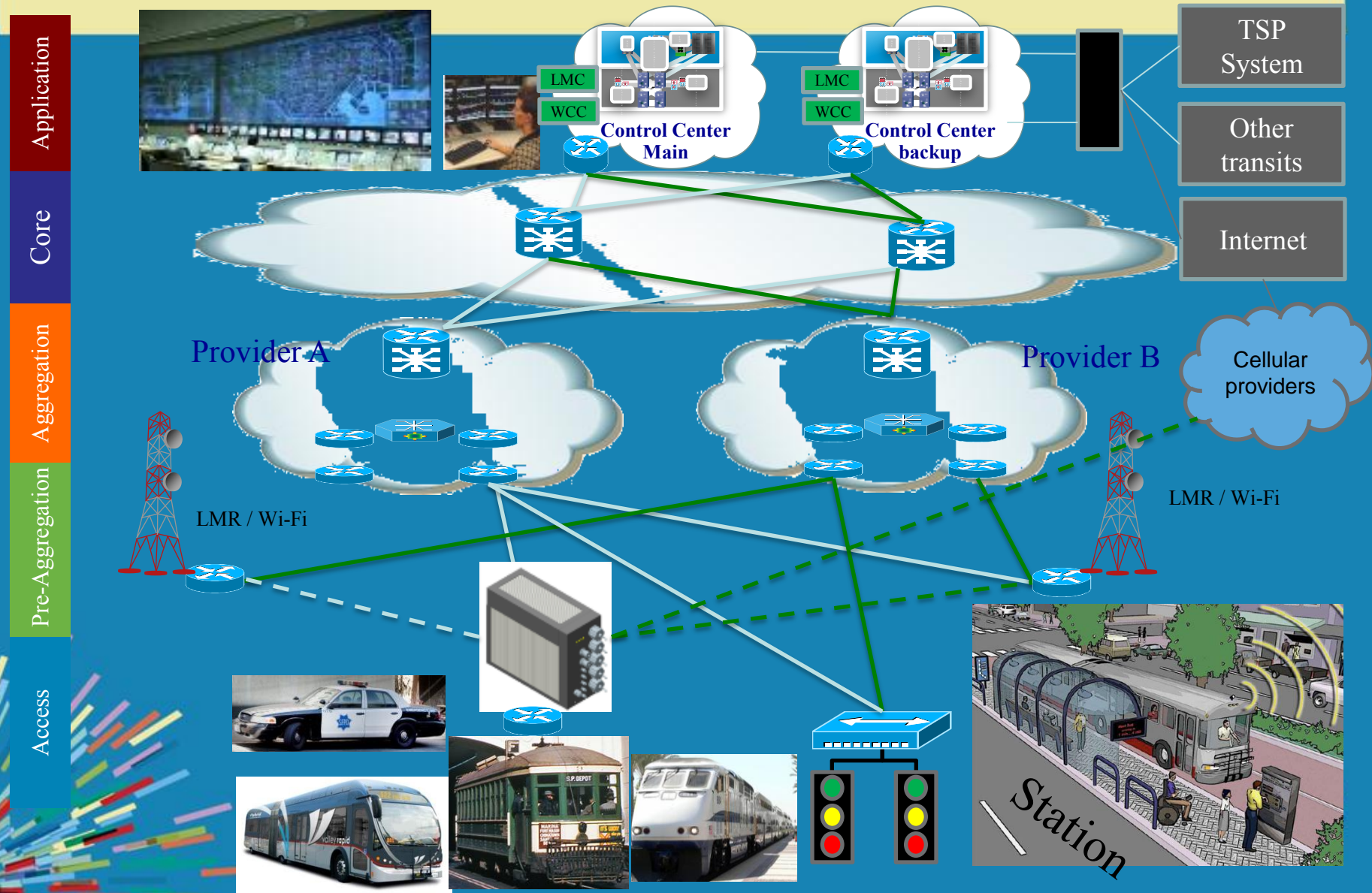
Mindset Changes

- Move from Preventive to Predictive Maintenance
- Go beyond condition monitoring
- Understand the real cause for past and/or common failures
- Stop reacting to preventable failures
- Through analytics, determine cost-effective solutions to improve maintenance operations

Embrace New Communications Technologies

- Narrowband/broadband to the vehicle
- IP network in vehicle – no different than the office or home
- Everything is IP-connected and available in real- or near-real-time
- Avoid point solutions - think of the long-term system view

Robust End-to-End IP Networks



THANK YOU!



Lilee Systems

- Founded by leaders in the wireless industry and headquartered in California's Silicon Valley, Lilee Systems is the leading vendor of wired and wireless IP-networked communications products and solutions focused on the railroad and rail transit industries
- Team members have extensive backgrounds in IP routing and switching and have been voting members of the 802.11 Wi-Fi, 802.15 WPAN, and 802.16 WiMAX working groups for many years.
- By utilizing its core competencies in radio frequency (RF) systems and networking, Lilee Systems has developed the TransAir PTC-3000 series 220 MHz Radio Transceivers, the WMS-2000 series of intelligent IP routers, the LMC-5000 series of IP Mobility Controllers, and communications management units to offer complete end-to-end interoperable IP-based communications networks.
- Lilee Systems has a strong and expanding customer base in the rail and rail transit space, including five of the eight North American Class 1 railroads as customers
- Lilee Systems has also been fortunate to be sought out by communications systems companies and rail systems suppliers and integrators because of its expertise in wired and wireless mobile IP networked communications. Partners to date include Cisco Systems, Invensys Rail (now Siemens Transportation), Alstom Signaling, Bombardier Transportation, and others.
- For more information, please visit lileesystems.com



Jon Adams Bio

- Jon Adams has 30 years demonstrated leadership in cost-effective, high-reliability systems engineering, product development and team management. At Lilee Systems, he manages strategic development and provides systems engineering expertise for Class One rail and passenger rail transit communications systems.
- Previously, he was director of systems engineering for Motorola's US\$400M Radio Products Division and subsequently director of member of the business development team at Freescale Semiconductor, a leader in automotive, networking, and industrial markets. At NASA's Jet Propulsion Laboratory, he was payload manager, cognizant engineer or contract technical manager for multiple space-borne radar and communications systems for Earth-orbiting and planetary missions.
- Jon is expert in wireless communications, including LMR, cellular 3G/4G, wireless broadband, Wi-Fi, and NFC/RFID. He has deployed mission-critical, extremely reliable communications systems as well as cost-effective chipsets for cellular components, directed distributed technical teams of diverse talent, and orchestrated technical due diligence for mergers and acquisitions.
- Jon has authored two patents with several more pending, and has received many honors including the NASA Exceptional Achievement Medal, the Motorola Standards Impact Award, and the Freescale Diamond Chip Award. Jon holds BSE and MSEE degrees from UCLA and is a senior member of the IEEE. He and his wife live in Scottsdale, Arizona.

