Using Technology to Increase Efficiency

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Agenda

• Application Types
• Application Management and Deployment
• Mobile Device Management (MDM)
• Technology in the Trip Lifecycle
• The Internet of ”Aviation” Things
Application Types and Structure

Native Applications, Apps, and Web Based

• What are the differences?
• What are the similarities?
• Which is right for me?
Application Types and Structure

Native Desktop Applications

• Are installed on a computer or server and accessed directly on those machines or through a Local Area Network (LAN)

• Often called Client-Server Applications – Like Outlook and Exchange

• Require larger updates to be installed and infrastructure to maintain.

• Can be the most robust and complex software systems with fewer limitations.
Application Types and Structure

Apps

• Lightweight native applications designed for specific operating systems and use cases.
• Think iOS, Android, Microsoft Metro
• Often updated by replacing the entire app.
• Often limited in functionality and/or limited use cases.
• Designed for mobility.
Application Types and Structure

Web Based

• Launched through a web browser, and likely not requiring an install.
• Modern development allows a native application-like feel.
• Scalable design platforms are more readily available.
• Updated incrementally and more frequently.
• Requires internet connectivity, but can be operating system agnostic.
Application Virtualization

What is application virtualization?

Application Virtualization is the process of encapsulating a computer program from the underlying operating system on which it is executed.

Key Benefits

- Remote Access
- Centralized Management
- Secure Deployment
- Platform Independent
- Legacy Application Support
- Scalability

Although there are many Application Virtualization technologies available, Citrix and Remote Desktop Services are the two most common solutions.

Sources: Wikipedia
Application Virtualization

Why use application virtualization?

**Application Virtualization** allows organizations to provide users with secure access to applications and desktops from any location or device.

**Key Security Consideration**

- No Data on Client Devices!
  - 1 Stolen Laptop every 53s
  - 70m Smartphones per Year
  - 7% Mobile Recovery Rate
  - 1 out of 20 Company Devices Lost

Sources: Wikipedia
Application Virtualization Technologies

RDP or Citrix, which one is right for me?

**Remote Desktop Services**
- Small Organizations
- Limited IT Budget
- Limited IT Resources
- Charter Operators / Brokers
- < 100 Employees

**Citrix XenApp / XenDesktop**
- Larger Organizations
- Flexible IT Budget
- Multiple IT Resources
- Corporate Operators
- > 100-150 Employees

Sources: Wikipedia
Mobile Device Management
What is MDM and why do I need it?

**Mobile Device Management (MDM)** is the industry term for administration of mobile devices, such as smartphones, tablets, and computers.

**Why is MDM necessary?**

- Management
- Security
- Monitoring

Sources: Wikipedia
Mobile Device Management

Managing Devices

**MDM Solutions** use Over-the-air (OTA) programming to remotely configure and manage one or more mobile devices.

**Management Capabilities**
- Initial Configuration
- Application Deployment
- Software Updates
Mobile Device Management

Securing Devices

**MDM Security** allows an organization to protect sensitive corporate data across both company-owned and employee-owned devices.

**Security Capabilities**
- Remote Locking
- Remote Data Wipe
- Application Restrictions
- Jailbreak/Root Detection
Unified Endpoint Management

Centralized Controls for Increasing Number of Devices

**UEM Device Monitoring** allows administrators to have all the same benefits of MDM without having disparate management tools for different types of endpoints (devices). Focus shifts to app and data-centric controls.

**Benefits & Considerations**
- Currently for Enterprises but Scaling
- Lower Total Cost of Ownership
- Will become device agnostic
- UEM at 15% today, 54% by 2020

Sources: Forrester “Mobile Vision 2020”
Business Aviation Technologies

Throughout the trip lifecycle

• What types of products and services are available?
  – Planning & Scheduling, In Flight, Post Flight, Management & Finance
  – How can you leverage these to increase efficiency?

• What is the Internet of Things (IoT)?

• What can we expect to see in the future?
Technology in the Trip Life Cycle

Scheduling

• Many scheduling products have interfaces for requesting and approving trips.
  – Allows the trip requester to submit a trip directly to the flight department, without duplicate or repetitive entry of the same information.

• Mobile access in becoming more prevalent in all areas.
  – Communicating trip details electronically instead of via paper or PDF.
  – Document management becoming a technology challenge as paper is removed from the cockpit.
Technology in the Trip Life Cycle

Scheduling

• Many scheduling and maintenance products have integrations for sharing Operations and MX Data.
  – Determination of an aircraft’s airworthiness, open MEL/CDL items, restrictions, and limitations can all be communicated from one system to the other.

• Integrations with Trip Support Providers
  – Reduction or elimination of duplicative entry of information which streamlines communications and reduces errors.
  – Automated dissemination of trip support data, electronically.
Technology in the Trip Life Cycle

Flight Planning

- Mobile apps or online services are available and suitable for nearly every mission type.
  - Flight Plans, W&B, and Trip Support are some examples of tools that are available now within Mobile Apps or directly though the web.

- Integration of Risk Analysis and Fatigue Analysis
  - Trips can be evaluated during the planning phases to allow for mitigation of both risk and fatigue
  - Schedules can be sent to/from scheduling and flight planning tools to generate risk and fatigue reports as they are needed and in real time.
Technology in the Trip Life Cycle

Trip Execution and In Flight

• **Flight Following**
  – Significant improvements in coverage and reliability in recent months/years supported by increased connectivity and in more aircraft

• **Connectivity and Communications** are improving and increasing in availability.
  – Internet availability is nearly world-wide
  – On Board systems connect the Cockpit and the Cabin to the world outside the aircraft.
  
  • Datalink
  • Cabin Connectivity (Broadband)
  • Internal A/C Networks
  • GSM Connectivity
Technology in the Trip Life Cycle

Examples of Connectivity on and off the Aircraft

Off-Aircraft SATCOM & GSM
- JetConneX
- ViaSat
- Ku/Ka
- ATG
- GSM

On-Board SATCOM & GSM
- Inmarsat
- Iridium
- JetConneX
- ViaSat
- Ku/Ka
- ATG
- GSM

On-Board Router
- On-board File Server
- Cabin Management Systems
- On-Demand Video

On-Board Networking & Telephony
- Mobile Devices
- Cockpit PEDs
- Passenger Devices
- Print-Scan-Fax

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Technology in the Trip Life Cycle

Post Flight

- Datalink can push times back into scheduling tools
  - Automates and increases accuracy
  - May be provider specific, and dependent on subscriptions

- Scheduling systems can integrate with MX systems
  - Auto-reporting of times, discrepancies, MX status

- Documents completed or annotated during the flight execution can be imported back electronically for permanent recordkeeping.
Technology in the Trip Life Cycle

Management & Finance

• Business Intelligence tools are popping up everywhere.
  – Can be linked to nearly ANY data source
  – Can be available on the web for mobile accessibility

• Automation between services and service providers in reducing the time to pay or get paid, and increasing efficiency in the reconciliation process.
The Internet of “Aviation” Things

What is the “Internet of Things” or IoT?

Simply put… the Internet of Things refers to the connection of devices to the internet. Aircraft, cars, refrigerators, juicers, soda machines, heart monitors, watches, and more are all candidates for connection.
The Internet of “Aviation” Things

What are we seeing today in technology

- Increased Integration and data flow between disparate systems
- More partnerships and Acquisitions leading to increased integrations
  - Consolidation into larger eco-systems means less duplication and more data transparency
- Big Data is a reality, and Analytics are becoming a top priority.
The Internet of “Aviation” Things

What are we seeing tomorrow

• Automation, automation, automation.
  – IoT devices communicating in real time, without user input, generating data at astonishing rates

• Smaller, lighter, and wearable technology
  – Fatigue monitoring through wearable devices
  – HUDs getting smaller, and more usable in everyday situations

• Connectivity increasing transparency
  – CVR replication over broadband
  – Realtime performance and FOQA data capture
Increase Efficiency with Technology

Questions?