Utilizing Technology to Increase Efficiency

Thursday, February 9th | 8:45 a.m. – 10:00 a.m.

PRESENTED BY:
James Spadaro – Stellar Labs
David Purvis – Rockwell Collins
Agenda

Today’s Topics

• Introduction & Overview
• Evolution of Technology
• Organizational Needs
• Buzzwords & Terminology
• Education & Efficiency Tips
• Business Aviation Technologies
• Q & A
Technology in Business Aviation
How we got to where we are today…
Technology needs of the modern flight dept.

- Process
- Aviation Services
- Productivity
- Communications
- Networking & Services
- Operating Systems
- Hardware & Infrastructure
- Facilities

Aviation Specific

All Industries
Buzzwords and Terminology
Improving your technical vocabulary

- Virtualization
- BYOD (Bring your own Device)
- Cloud Computing
  - Private, Public, Hybrid
  - SaaS, PaaS, IaaS
- IoT (Internet of Things)
- Big Data
Cloud Computing
What does the Cloud mean to Business Aviation?

Cloud computing represents a paradigm shift in the way we manage our people and resources.

Key Benefits
• Service Availability
• Workforce Mobility
• BYOD (Bring Your Own Device)
• Remove Geographical Hiring Constraints
• Disaster Recovery & Business Continuity
Cloud Computing

Deployment Models

- Private
- Public
- Hybrid
Cloud Computing
Concepts and terminology

Managed by You
On-Premises
(Self Hosted)
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking

Managed by Vendor
IaaS
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking

PaaS
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking

SaaS
Applications
Data
Runtime
Middleware
O/S
Virtualization
Servers
Storage
Networking
Cloud Computing
Concepts and terminology

IaaS Providers

IaaS

SaaS

SaaS Providers

IaaS Providers

SaaS Providers

Applications
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Voice over IP (VoIP)

Overview of VoIP

**Voice over Internet Protocol** is a category of hardware and software that enables people to use the Internet as the transmission medium for telephone calls by sending voice data in packets using IP rather than by traditional circuit transmissions of the PSTN.
Voice over IP (VoIP)

Features and Capabilities

• Workforce Mobility
• Find me Follow me Call Routing
• Voicemail to Email Transcription
• Softphone Support
• Advanced Reporting
• Advanced Integration
## Office 365 & Google Apps

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<th>Function</th>
<th>Google Apps</th>
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<td>Email</td>
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<td>File Storage</td>
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<td>Instant Messaging</td>
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<tr>
<td>Note Taking</td>
<td>Keep</td>
<td>OneNote</td>
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Google Apps
Features by Comparison

- **Price:** $5 - $10 Per User Per Month
- **Storage:** 30 GB / Unlimited
- **Email Limits:** 30 GB / Unlimited
- **Video Calls:** Up to 25 Participants
- **Offline Editing:** Requires Chrome
- **Support:** 24/7 Phone Support
Office 365
Features by Comparison

Price: $6 - $35 Per User Per Month
Storage: 1 TB
Email Limits: 50 GB
Video Calls: Up to 250 Participants
Offline Editing: Requires OneDrive
Support: 24/7 Phone Support
Application Virtualization
Citrix vs. Remote Desktop

• What are they?
• Why are they used?
• What are the similarities?
• What are the differences?
• Which is right for me?
**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.

Source: 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
Application Virtualization

Similarities between Citrix and RDS

- Application Publishing
- Desktop Publishing
- Load Balancing
- Web Access to Applications
- Secure Proxy/Gateway
- Similar Architecture
Application Virtualization

Differences between Citrix and RDS

• Cost - Citrix = RDS + $350/user
• Scalability
• Protocols ICA/HDX vs. RDP
• Management / Monitoring
• Client Support
Application Virtualization

Which one is right for me?

**Remote Desktop Services**
- Small Organizations
- Limited IT Budget
- Limited IT Resources
- 135 Operators / Brokers
- < 100-150 Employees

**Citrix XenApp / XenDesktop**
- Larger Organizations
- Flexible IT Budget
- Multiple IT Resources
- Corporate Operators
- > 100-150 Employees
File Storage and Sharing
Solutions and capabilities

Solutions

• DropBox
• Google Drive
• OneDrive
• iCloud
• Box.net
• ShareFile
File Storage and Sharing
Solutions and capabilities

Key Capabilities

- Secure Storage
- Large File Transfer
- Local Synchronization
- Cross Platform Support
- Email Sharing
PDF Handling
Adobe Reader & Docusign

- Printing to PDF
- Digital Signatures
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

Source: 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
Mobile Device Management

Monitoring Devices

MDM Device Monitoring allows administrators to have real-time information regarding device location and status.

Monitoring Capabilities

- Real-time status
- Asset Tracking
- GPS Tracking
Mobile Device Management
MDM Providers
Mobile Connectivity Solutions

MiFi & Tethering

**MiFi** is a portable broadband device that allows multiple end users and mobile devices to share a 3G or 4G mobile broadband Internet connection and create an ad-hoc WiFi network.

**Tethering** allows sharing the Internet connection of the phone or tablet with other devices such as laptops

- Price Range: $50 - $1,000
- Devices Supported: 10 – 15 Devices
- Data Plans: 500Mb – 100GB per Month

Source: WikiPedia
Efficiency Tips

Individual Tips

• Learn Your Hot Keys
  • OS Keys
  • Programs & Menus
• Send Links, Not Attachments
• Learn to Search
• Get a Password Manager
• Invest in Yourself
  • Tips/Tricks
  • YouTube Videos
# Efficiency Tip

**Effective Google Searches**

<table>
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<th>Query</th>
<th>Example</th>
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<tr>
<td>Quotes</td>
<td>“Chuck Norris”</td>
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<td>Site Search</td>
<td>“Chuck Norris” site:Netflix.com</td>
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<tr>
<td>Domain Search</td>
<td>“Chuck Norris” site:.gov</td>
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<tr>
<td>Boolean (AND/OR/NOT)</td>
<td>Chuck NOT Norris</td>
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<td>Minus Sign</td>
<td>“Chuck Norris” –site:Netflix.com</td>
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<td>Weather 76102</td>
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Source: [Google Search Help](https://support.google.com)
Efficiency Tips

Organizational Tips

- Invest in Training
- Standardize Your Processes
- Document Your Processes
- Eliminate Duplicate Entry
- Fight Technical Burnout
- Do the Math: Time = Money
Technology in Business Aviation
Where do we go from here…
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
- Inmarsat
- Iridium
- ATG
- GSM

On-Board Networking & Telephony
- Mobile Devices
- Cockpit PEDs
- Passenger Devices
- Print-Scan-Fax
- On-Demand Video
- On-board File Server
- Cabin Management Systems

On Board Router
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
**IoT Terms and Definitions**

- **Internet of Things (IoT):** a network of connected objects able to collect and exchange data.

- **IoT Device:** Any stand-alone device that is internet connected, that can be monitored or controlled remotely.

- **IoT Ecosystem:** all of the components that allow an entity (Business, Government, and consumer) to connect to their devices, including dashboards, networks, gateways, data storage, security, and analytics.

- **Physical Layer:** The hardware of an IoT device.

- **Application Layer:** Protocols and interfaces that devices use to communicate.

Sources: Business Insider
Q&A