

DEDICATED TO HELPING BUSINESS ACHIEVE ITS HIGHEST GOALS.



# Utilizing Technology to Increase Efficiency

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

PRESENTED BY:

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**SCHEDULERS &  
DISPATCHERS CONFERENCE**

February 7-10, 2017 | Fort Worth, TX

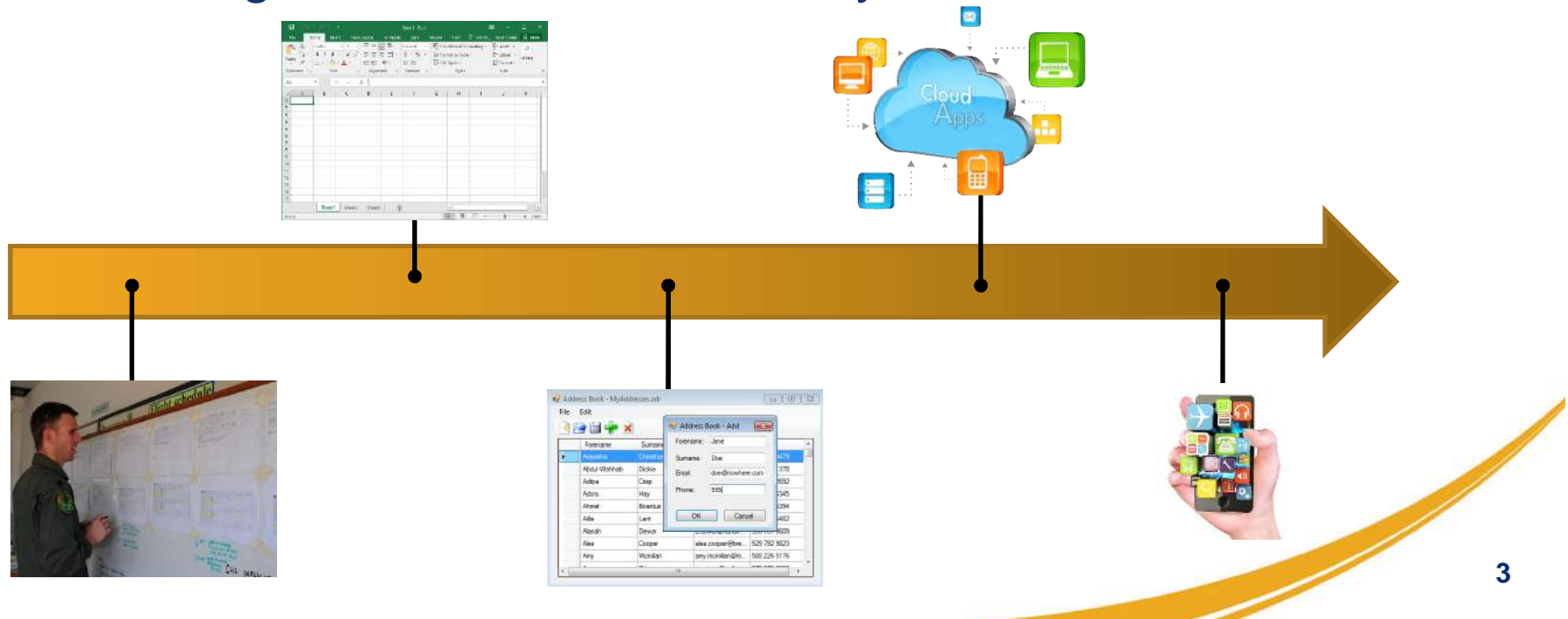
# Agenda

## 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.



# 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

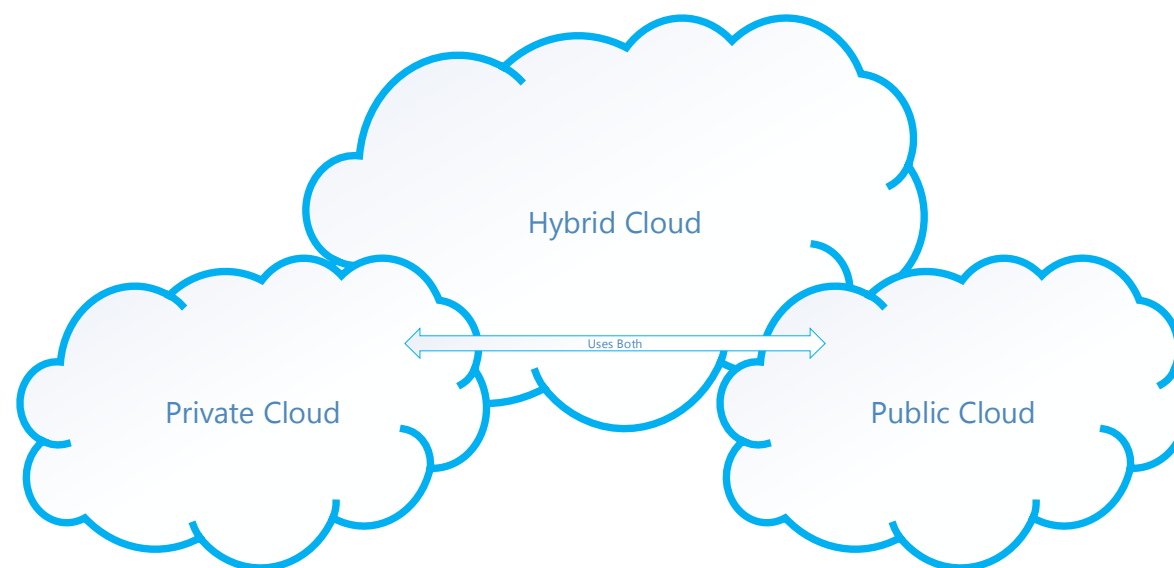
- Service Availability
- Workforce Mobility
- BYOD (Bring Your Own Device)
- Remove Geographical Hiring Constraints
- Disaster Recovery & Business Continuity



# Cloud Computing

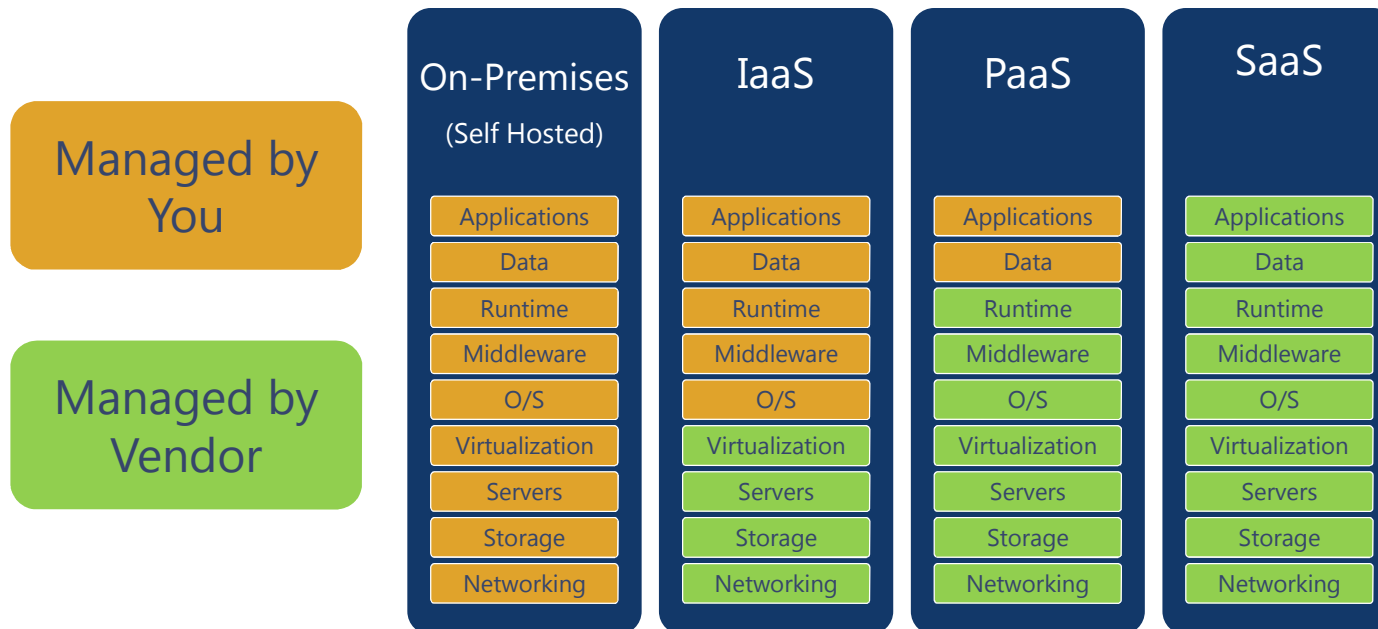
## Deployment Models

- Private
- Public
- Hybrid



# Cloud Computing

## Concepts and terminology

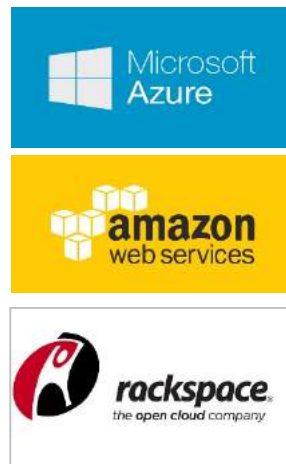




# Cloud Computing

## Concepts and terminology

### IaaS Providers



### IaaS

Applications  
Data  
Runtime  
Middleware  
O/S  
Virtualization  
Servers  
Storage  
Networking

### SaaS

Applications  
Data  
Runtime  
Middleware  
O/S  
Virtualization  
Servers  
Storage  
Networking

### SaaS Providers



# 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

Function	Google Apps	Office 365
Email	Gmail	Outlook
Word Processing	Docs	Word
Spreadsheets	Sheets	Excel
Presentation	Slides	PowerPoint
Web Pages	Sites	SharePoint
File Storage	Drive	OneDrive
Instant Messaging	Talk	Skype
Video Conferencing	Hangouts	Skype
Social Networking	Google +	Yammer
Note Taking	Keep	OneNote



## Google Apps

### Features by Comparison



Google™  
Apps for Work

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

The Office 365 logo, consisting of a white square icon with a stylized 'O' inside, followed by the text "Office 365" in white. The logo is centered on a large orange rectangular background.

# 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?



Versus



Remote Desktop Services

# 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



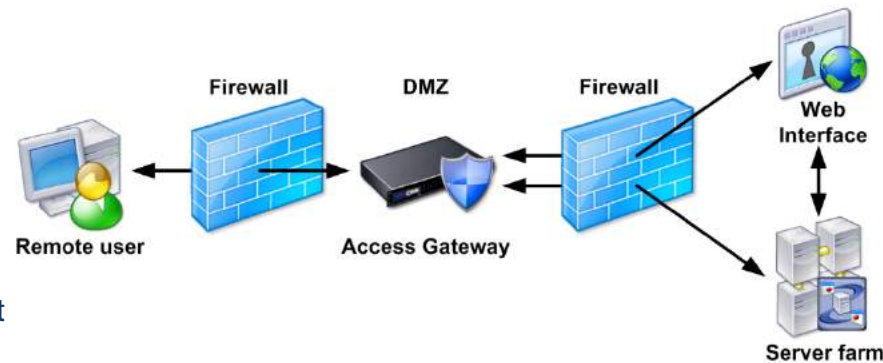
# Application Virtualization

## Why use application virtualization?

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

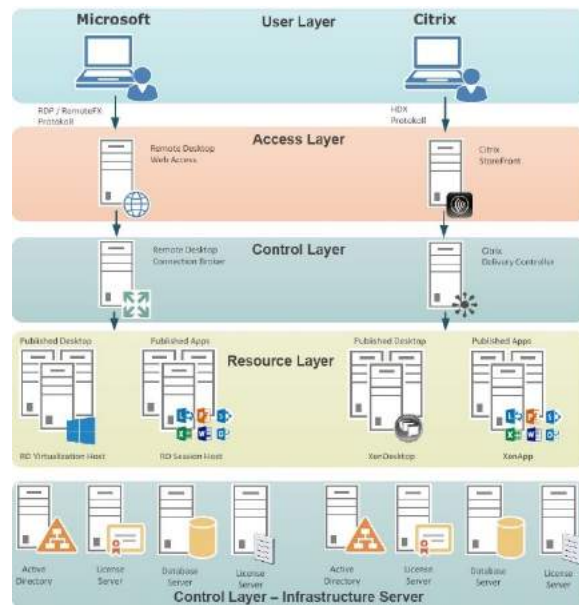
### Key Security Consideration

- 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

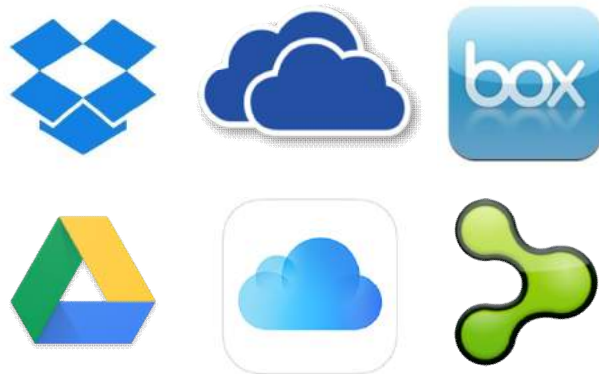
### Solutions

- DropBox
- Google Drive
- OneDrive
- iCloud
- Box.net
- ShareFile



# File Storage and Sharing

Solutions and capabilities



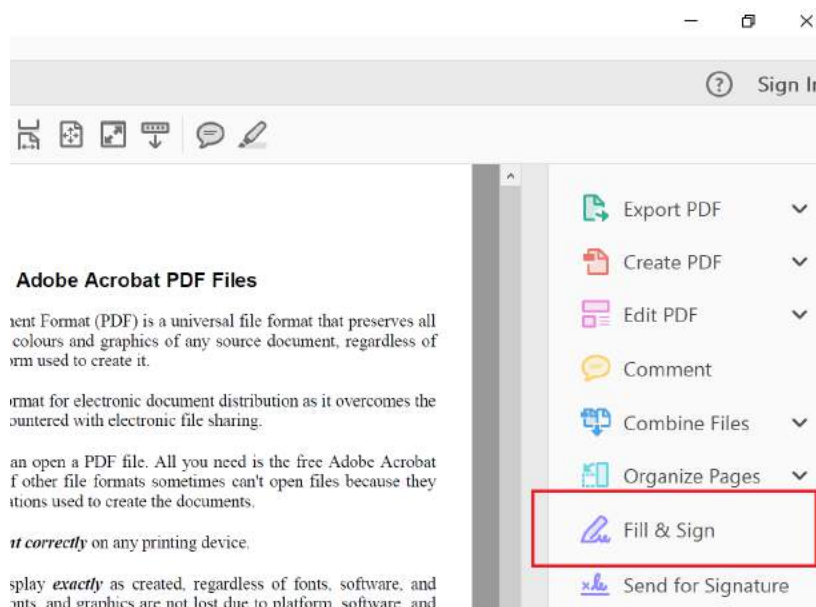
## Key Capabilities

- 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.



Source: WikiPedia

## Why is MDM necessary?

- Management
- Security
- Monitoring



# 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

Query	Example
Quotes	"Chuck Norris"
Site Search	"Chuck Norris" site:Netflix.com
Domain Search	"Chuck Norris" site:.gov
Boolean (AND/OR/NOT)	Chuck NOT Norris
Minus Sign	"Chuck Norris" -site:Netflix.com
Specialty Search	Weather 76102

Source: [Google Search Help](#)

## Efficiency Tips

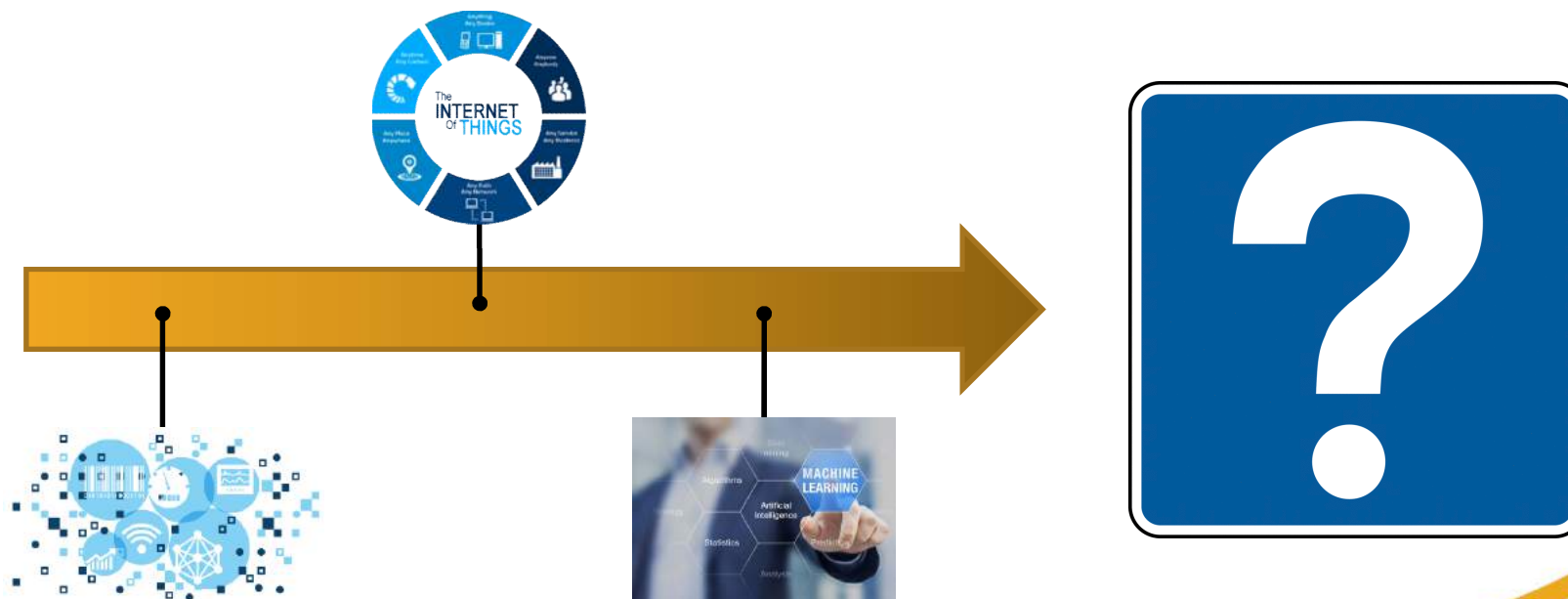
### Organizational Tips

- 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 is 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 through 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

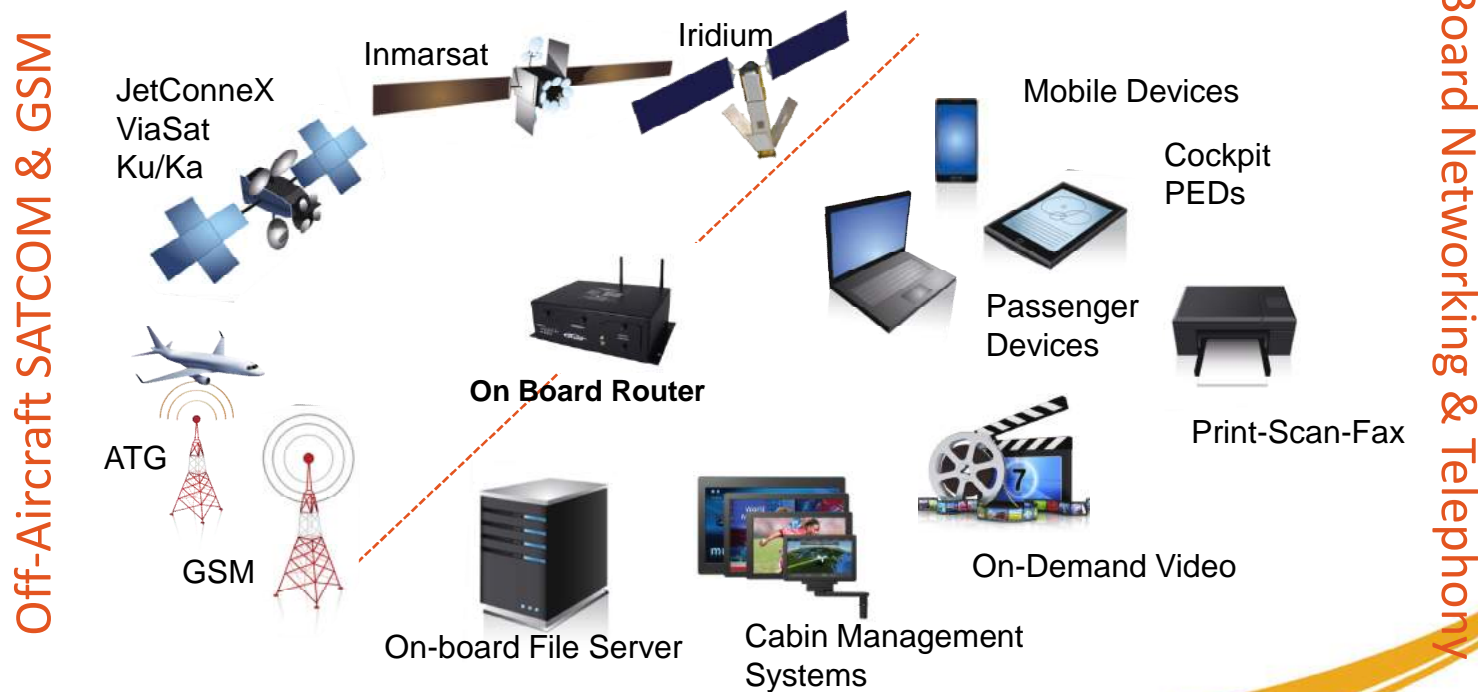
## Trip Execution and In Flight



- 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



# 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.

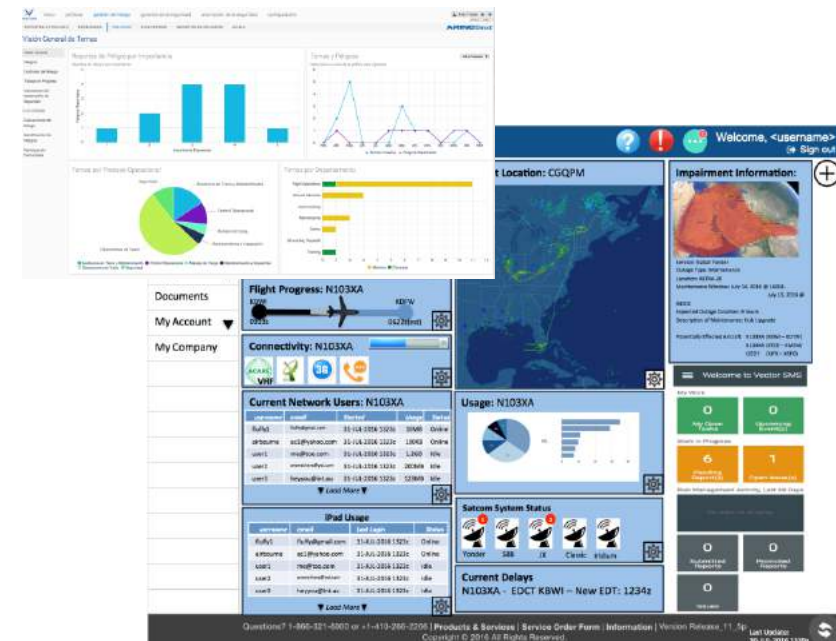


TODAY THERE ARE  
**10 BILLION**  
CONNECTED DEVICES

# 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.

# Q&A



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