



# **DATA MANAGEMENT – VALUE CREATION IN THE DIGITAL AEROSPACE**

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# AGENDA

**WHY GO DIGITAL?**

**HOW FLIGHT DEPARTMENTS ARE GOING DIGITAL**

**DIFFERENT SOLUTIONS/PROVIDERS**

**INTEGRATIONS**

**CHALLENGES OF GOING DIGITAL**

**IMPLEMENTATION TIPS**

**BEST PRACTICES**

# WHY GO DIGITAL?

## GOALS OF MAINTENANCE DEPARTMENTS WHO GO DIGITAL

- **WANT QUICKER AND EASIER ACCESS TO MORE INFORMATION SO THEY CAN MAKE BETTER BUSINESS DECISIONS**
- **MAINTENANCE DEPARTMENTS ARE CONTINUAL BEING ASKED TO DO MORE WITH LESS RESOURCES SO THEY NEED TO BECOME MORE EFFICIENT IN ORDER TO PERFORM THEIR JOB**
- **BETTER COMMUNICATION BETWEEN MAINTENANCE AND OPERATIONS IS REQUIRED IN ORDER TO MINIMIZE AIRCRAFT DOWNTIME SO THE AIRCRAFT CAN BE USED AS A TOOL FOR THE ORGANIZATION**
- **WANT TO ELIMINATE OR REDUCE THE AMOUNT OF DUPLICATION OF DATA ENTRY**
- **FINANCIAL BENEFITS**



# FINANCIAL BENEFITS OF GOING DIGITAL

BETTER MAINTENANCE PLANNING = LESS AIRCRAFT DOWNTIME

MORE EFFICIENT MATERIAL (TOOLS & PARTS) PLANNING = LESS AIRCRAFT DOWNTIME

BETTER COORDINATION AMONGST DEPARTMENTS = LESS AIRCRAFT DOWNTIME

BETTER INFORMATION & COMMUNICATION REDUCES THE RISKS OF UNEDUCATED DECISIONS

LABOR SAVINGS – DUPLICATION OF DATA ENTRY, REPORT GENERATING, REVISION TRACKING

CORE TRACKING TOOLS

ELECTRONIC ACCESS SAVES TIME

AIRCRAFT SELLS – KNOW WHAT SPARE PARTS YOU HAVE TO SELL



# HOW ARE FLIGHT DEPARTMENTS GOING DIGITAL?

## TWO OPTIONS FOR SOFTWARE/SERVICE OPTIONS

### 1. ALL IN ONE SOLUTION

- THE ENTIRE FLIGHT DEPARTMENT SELECTS ONE OPTION TO USE
- POPULAR OPTION PRE 2012
- "INTEGRATED COMPROMISE"

### 2. BEST OF BREED

- EACH DEPARTMENT SELECTS THE OPTION THAT BEST SUITS THEM AND THEN THROUGH TECHNOLOGY INTEGRATES OR INTERFACES THE PROGRAMS
- MORE POPULAR IN RECENT YEARS WITH THE ADVANCES OF TECHNOLOGY

# ALL IN ONE SOLUTIONS

## ALL IN ONE SOLUTIONS



## ADVANTAGES TO ALL IN ONE SOLUTIONS

- DIFFERENT MODULES TYPICALLY WORK WELL TOGETHER
- ONE PLACE FOR SUPPORT
- RECURRING COSTS ARE USUALLY LOWER

## DISADVANTAGES TO ALL IN ONE SOLUTIONS

- TYPICALLY HAS AN AREA OF SPECIALITY AND THAT SOLUTION WORKS VERY WELL. THE OTHER MODULES THAT ARE NOT THEIR SPECIALITY ARE USUALLY LACKING
- LARGE UPFRONT INVESTMENT FOR SOFTWARE AND ADDITIONAL HARDWARE COSTS DEPENDING ON HOSTING OPTIONS – MAKES SYSTEM HARD TO REPLACE
  - INDIVIDUALIZED SUPPORT DIFFICULT AS PROVIDER USUALLY CANNOT EASILY ACCESS YOUR INSTALLATION
  - TYPICALLY OLDER TECHNOLOGY
  - OTHER INTEGRATION POSSIBILITIES ARE USUALLY DIFFCULT

# BEST OF BREED OPTIONS

## FLIGHT SCHEDULING & FLIGHT PLANNING

**Rockwell  
Collins**

**PFM**  
PROFESSIONAL FLIGHT MANAGEMENT

**SD Pro**

**AVMOSYS**

**FlightTrak**  
INCORPORATED

**SchedAero**

**Avianis**

**RocketRoute**

**JEPPESEN**  
A BOEING COMPANY

**FltPlan.com**

# BEST OF BREED OPTIONS

## FULL SERVICE MAINTENANCE TRACKING, WORK ORDER & INVENTORY CONTROL



## WORK ORDER & INVENTORY WITH DO IT YOURSELF MAINTENANCE TRACKING





# MAINTENANCE TRACKING – FULL SERVICE VS D-I-Y

- **ADVANTAGES TO FULL SERVICE MAINTENANCE TRACKING OPTIONS**

- **SERVICE INCLUDES UPDATES TO THE OEM MAINTENANCE PROGRAM**
- **NO SOFTWARE TO INSTALL - PROVIDERS HOST THE PROGRAM AND THE PROGRAM IS ACCESSED VIA THE INTERNET**
- **APPS FOR TABLETS AND SMARTPHONES TYPICALLY AVAILABLE**
- **SYSTEM TYPICALLY COMES WITH A DEDICATED ANALYST FOR SUPPORT**
- **SECURE BACK UPS – DO NOT RISK LOSING YOUR DATA**

- **ADVANTAGES TO DO IT YOURSELF (D-I-Y) MAINTENANCE TRACKING OPTIONS**

- **OPERATOR IS IN 100% FULL CONTROL OF DATA**
- **DO IT YOURSELF PROGRAMS TYPICALLY HAVE OTHER MODULES THAT INTERFACE WITH THE MAINTENANCE MODULE**
  - **PURCHASE IS TYPICALLY A ONE TIME COST WITH A SMALL ANNUAL SUPPORT FEE**

# INTEGRATIONS BETWEEN PROGRAMS

- **FLIGHT SCHEDULING & MAINTENANCE TRACKING**
  - **DONE THROUGH APIs AND WEB SERVICES**
  - **FLIGHT TIMES AUTOMATICALLY UPDATE MAINTENANCE TRACKING**
  - **UPCOMING FLIGHTS GO TO MAINTENANCE TRACKING SYSTEM**
  - **UPCOMING MAINTENANCE GOES TO FLIGHT SCHEDULING PROGRAM FOR DISPLAY**
  - **COMMON FRUSTRATIONS**
    - **HARD TO TELL IF INTERFACE IS WORKING OR NOT**
    - **CAN'T CONTROL WHAT DATA GOES TO EACH SYSTEM**

## CHALLENGES OF GOING DIGITAL?

**DID YOU  
KNOW?**

**ACCORDING TO AN ARTICLE BY BRUCE ROGERS  
CHIEF INSIGHTS OFFICER AT FORBES,**

**84% OF COMPANIES FAIL  
AT DIGITAL TRANSFORMATION!**

# CHALLENGES OF GOING DIGITAL?

LACK OF BUY IN FROM ALL DEPARTMENTS

MANY TIMES REQUIRES ADJUSTMENTS TO CURRENT PROCESSES

FUNDAMENTAL SHIFT IN THE WAY THE DEPARTMENTS COMMUNICATE

DIRECT FINANCIAL IMPACT VS INDIRECT FINANCIAL IMPACT (EFFICIENCIES)

IMPLEMENTATION REQUIRES GREAT PLANNING AND COMMUNICATION

DIFFICULT TO GET EXECUTIVE MANAGEMENT TO AUTHORIZE FUNDS

# IMPLEMENTATION TIPS



# IMPLEMENTATION TIPS



## DOCUMENT GOALS FOR WHAT YOUR DEPARTMENT WANTS & NEEDS

- DETERMINE BOTH SHORT AND LONG TERM GOALS AS MANY TIMES A PHASED APPROACH TO IMPLEMENTATION IS EASIER FOR THE ORGANIZATION.
- WHAT DO YOU WANT TO DO DIGITALLY AND WHY YOU FEEL IT IS IMPORTANT.
- COORDINATE WITH OTHER DEPARTMENTS – DO THEY HAVE SIMILAR DESIRES?
- THIS PROCESS SHOULD ALSO ASSIST IN GETTING BUY IN FROM OTHER AREAS OF YOUR FLIGHT DEPARTMENT
- WHAT DATA DO YOU WANT OTHER DEPARTMENTS TO SEE

# IMPLEMENTATION TIPS



## DEFINE AND MAP OUT YOUR CURRENT PROCESSES PRIOR TO EVALUATING PROGRAMS

- **SOUNDS SIMPLE BUT MANY DEPARTMENTS DON'T REALLY KNOW THEIR PROCESSES. THEY MAY KNOW THEIR ROLE AND THEIR PROCESS BUT NOT THE ENTIRE DEPARTMENTS. BY DOING THIS YOU WILL BE BETTER PREPARED TO EVALUATE SOLUTIONS THAT WILL FIT WITHIN YOUR OPERATIONS.**
- **THIS PROCESS WILL ALSO ALLOW YOU TO CRITICALLY THINK ABOUT YOUR PROCESSES. YOU MAY DETERMINE THAT A CERTAIN PROCESS MAY BE VERY INEFFICIENT AND ARE OPEN TO CHANGING THAT PROCESS.**

# IMPLEMENTATION TIPS



## EVALUATE MULTIPLE VENDORS AND PROGRAMS

- **JUST BECAUSE A PROGRAM OR SET OF PROGRAMS WORK FOR ONE OPERATION DOES NOT MEAN IT WILL WORK FOR YOUR FLIGHT DEPARTMENT. COME UP WITH A LIST OF MUST HAVES.**
- **ASK VENDORS ABOUT THEIR IMPLEMENTATION PLAN AND ASK TO SPEAK TO OPERATORS WHO HAVE USED THEIR PROGRAMS. MANY PROGRAMS DEMO VERY WELL BUT THEN THE ACTUALLY IMPLEMENTING THEM IS VERY DIFFICULT. MOST OF THIS DIFFICULTY STEMS FROM SOME PROGRAMS FORCING OPERATIONS TO ADOPT THEIR PROCESSES.**



# IMPLEMENTATION TIPS



## SPECIFIC & DETAILED IMPLEMENTATION PLAN

- **MUTUALLY DEVELOPED WITH THE VENDOR WITH MILESTONE DATES**
- **PROJECT MANAGERS ON BOTH SIDES**
- **CONSTANT COMMUNICATION TO ENSURE A SMOOTH TRANSITION**
- **CURRENT DATA? WHERE IS IT COMING FROM AND WHAT DATES IS IT GOING TO BE TRANSITIONED**
- **ENSURE TRAINING OF EMPLOYEES IS PLANNED AS WELL AS PART OF IMPLEMENTATION**

# BEST PRACTICES

## WORK ORDER & MAINTENANCE TRACKING SYSTEM

- SEPARATE LOGINS FOR EACH USER – BETTER TRACEABILITY
- NOT TOO MANY “ADMIN” USERS
- ATTACH COMPLIANCE DOCUMENTATION (LOG ENTRIES/WORK CARDS/8130s) TO COMPLIANCE UPDATE
- STORE AS MANY DOCUMENTS ELECTRONICALLY THAT YOU CAN FOR EASIER ACCESS
  - AIRCRAFT BUILD DOCUMENTS, INTERNAL MANUALS, WIRING DIAGRAMS
- ENSURE AIRCRAFT UTILIZATION IS PROPERLY SET
- WHEN AN OEM REVISION IS RELEASED REVIEW TO ENSURE SYSTEM IS CALCULATING NEXT DUES PROPERLY
- IF A SERVICE BULLETIN OR AIRWORTHINESS DIRECTIVE GETS RELEASED THAT DOES NOT APPLY TO YOUR SERIAL NUMBER AIRCRAFT DO NOT INACTIVE IT. COMPLY WITH THE SB/AD AS “NOT APPLICABLE”
  - GIVE ACCESS TO MROS WHEN IN FOR A MAINTENANCE VISIT
    - UTILIZE THE ANALYST PROVIDED AS QUALITY CONTROL
    - ENSURE DIGITAL SIGNATURES ARE COMPLIANT WITH AC 120-78
  - WHEN PLANNING MAINTENANCE ALSO PLAN MATERIAL (PARTS AND TOOLS)

# BEST PRACTICES

## WORK ORDER & MAINTENANCE TRACKING SYSTEM

- UTILIZE THE TOOLS OFFERED BY THE PROVIDER (LOG ENTRY GENERATOR, BUDGET TOOLS, ETC)
- TRACK INVENTORY (EVEN IF IT IS A SMALL AMOUNT)
- TRACK GROUND SUPPORT EQUIPMENT AND TOOLS (HANGAR AIRCRAFT)
- AT IMPLEMENTATION – COMPARE/CONTRAST 3 YEAR DUE LIST AND ASK FOR DIFFERENCES REPORT. KEEP DOCUMENTS USED FOR ENROLLMENT
- RETRAIN EMPLOYEES ANNUALLY
- HAVE NEW EMPLOYEES GO THROUGH FORMAL TRAINING FROM VENDOR (AVOID TRAIN THE TRAINER)
- DO NOT PUT A SPECIFIC VENDOR IN GMM (I.E. DON'T CALL OUT "VENDOR A" AND INSTEAD PUT "ELECTRONIC MAINTENANCE TRACKING SYSTEM")

# BEST PRACTICES

## INVENTORY SYSTEM

- **DO PHYSICAL INVENTORY COUNTS AT LEAST ONE TIME PER YEAR**
- **UTILIZE QR CODES/BAR CODES FOR FASTER SEARCHING**
- **RUN PARTS DUE LIST AT LEAST ONCE PER MONTH**
- **FOR LARGER DEPARTMENTS – UTILIZE PARTS MANAGER FOR ISSUING PARTS**
- **MAKE SURE ALL USER RIGHTS ARE SET UP PROPERLY (BUYER, RECEIVER, INSPECTOR, ETC)**
- **WHEN AIRCRAFT SELLS – REVIEW MAKE/MODEL SPECIFIC PARTS**



**THANK YOU FOR YOUR TIME!**