Paper to Data – Data to Dollars

IATA Paperless Operations
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Dealing with the Past & Present

Inefficient Processes ➔ Opportunity ➔ +20% Productivity

A highly optimised, hugely inefficient industry of people, pens and paper held together by silos of automation.

85,000 Log pages per month
70,000 pages of process support
30 touch points in paper handling

35,000,000 paper records

Paper to Data
Paper to Data Strategy – 3 Distinct Groups

Records History

Tech / Cabin Log

Planned Maintenance
Legacy Paper Retrieval

Retrieval Cycle

Request from parties

Airline

Email back to HKG TRD

Scan documents & Put documents back to boxes

Retrieve documents from boxes

MRO

Email to Airline TRD

Manage requests by Airline TRD

Email to MRO TRD

Retrieve boxes

Before

- Resources:
  * 3 persons involved.
    (1 in Airline, 2 in MRO)

- Availability:
  * Working hours only.

- Process:
  * Multi-user access is not possible;
  * Inefficient in fleetwise documents retrieval;
  * Waste created in duplicated / repeated requests;
  * Documents retrieval can only be based on W/C ref. number.
Electronic Renditions Retrieval

Retrieval Cycle

- Request from parties
- Retrieve documents from Docs System (Self-service)
- Scan documents & Put documents back to boxes
- Manage requests by Airline TRD
- Retrieve boxes

Airline

MRO

After

- Resources:
  * Self-service via Web.
- Availability:
  * 24 hours x 7 days.
- Process:
  * Multi-user access is available;
  * Can do fleetwise documents retrieval in one-go;
  * Eliminate requests management;
  * Documents retrieval can be based on any printed texts in documents (inc. W/C ref. number)
Electronic Retrieval Comparison

Case Study: Accident Exercise

**E&A exercise**
Man-hours

<table>
<thead>
<tr>
<th>Without FLYdocs Retrieval</th>
<th>FLYdocs Retrieval</th>
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<tbody>
<tr>
<td>47</td>
<td>8</td>
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</table>

**Lease Return**
Man-days

<table>
<thead>
<tr>
<th>Without FLYdocs Retrieval</th>
<th>FLYdocs Retrieval</th>
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</thead>
<tbody>
<tr>
<td>213</td>
<td>106</td>
</tr>
</tbody>
</table>
Tech & Cabin Log Process - Paper

1.3M Log Pages
- Data Correction
- Storage
- 30 Employees involved

1.3M pages / year
1 FTE
1M entries / year

PRINTING PAGES
DISTRIBUTE
TECH/CABIN LOG ENTRIES
DATA ENTRY
TRANSPORT
AIR MAIL

OPERATE
COLLECT

3000 sq. ft
~ 35M records

17 FTE
8 FTE

4 Dashboards
1.5 FTE
2.5 FTE

DATA SCAN
STORAGE

Tech Records
1.3M Log Pages
- Data Correction
- Storage
- 30 Employees involved

- Real Time Data Entry
- Accurate / Granular Info
- Enhanced Defect Management
- Improved Contract and Warranty Management
So....... All Happy

We now have a Business Case and the CEO is Eternally Grateful

Well .......... Not Quite!
BIG Data – the answer to everything?
BIG Dollars – the answer to the CEO

**Cost Management**
- Warranty
- Component Overhaul
- Engine Hours (TCP)
- Reliability
- Leasing

**Utilisation**
- Check Escalations
- Heavy Check Downtimes
- Algorithmic Forecasting
- New Technologies (not just IT)
- Compliance
- Reduced Delays

\[
\text{Utilisation} = \frac{\text{Cost}}{\text{ATK}}
\]
The Value Adding MRO

High Level hangar plan is generated by applying Task Requirements to Fleet and Facility constraints. This is based on projected fleet utilisation (BOP).

Hangar Plan

Manage production plan
- Track critical path
- Track task 'clock stops'
- Track shortages
- Track budget NRCs
- Electronic sign off of tasks

Hangar Execution

Check Library

Check Execution

Maintenance Requirements (inc. MPD / AMS)

Actual man hour bookings
- Material Usage
- Task Accomplishment
- Earned Value Management

• Reliability
• Check Escalations
• Float Calculations
• Technical Records
• Part Change
• Compliance
BIG Dollars – the answer to the CEO

Cost Management
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Utilisation
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Utilisation = Cost / ATK
### Benefit Categories

- **Inherent**
  - The benefit is realised as soon as the application is being used.
  - Example: Data accuracy, Removal of printing and distribution, Data entry clerks not required. Weight saving will burn less fuel.

- **Process Change**
  - The benefit is realised by a sustained change of behaviour.
  - Example: Alerts of repeat defects and components are visible to the Engineer. To realise the benefits alerts should be actioned.

- **New Concepts**
  - The benefit requires a change of mindset across departments / suppliers.
  - There may be regulatory challenges.
  - Example: Remote release of an aircraft with no inbound defects.

### Traceable Accountability

- **Signed Change Document with a Plan with target KPI**

### Accountability & Commitment

- Measure KPIs to ensure expected trends are realised.
- Ensure resources are re-deployed.
- Ensure commercial changes are realised.
- Remove $ projections from budgets.
- Gain commitment from stakeholders.
  - (signed Change Document)
  - Hold Stakeholders accountable.
  - Top Down support when it gets hard.
- Promote new capabilities.
- Leverage on LEAN initiatives.
- Leverage on Digitisation.
- Publicise Successes.
- Proactive industry engagement.
- Run Innovation Workshops.
- Encourage top down approach on costs.
Time for Questions

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Lease Return Vicious Circle

- CX Component Acceptance Data Standard – 7335 out of 14152 acceptance requirements are Lease return driven

Alignment required to come up with ONE standard
Paperless Objectives – IATA paperless EWG

Mission: To influence Airlines, MROs and Suppliers and Regulators (the Industry) to introduce business changes that enables the removal of paper records in aircraft maintenance.

Enable Airlines to reduce Cost / ATK and increase revenue
- Eliminate process inefficiencies
- Improve cost avoidance (Lease Returns, Inventory, paper Management)
- Reduce in service disruption

Introduce Industry Standards
- Influence the Industry to introduce standards (birth record requirements, lease returns requirements)
- Drive priorities for OEMs to deliver paperless
- Drive to set up centralised repair/part history data for all Operators/MROs
- Create awareness in the industry

Ensure Sustainability & Usability
- Exploit new generation aircraft capabilities
- Leverage on Technology and tightly manage systems and organisational integration – ie avoid the siloed covert developments
- Account for technological growth opportunities – ie data volumes, band width, improved world wide access, mobile devices etc.
Barriers to Introducing Paperless Maintenance

- Buy in from Regulatory Agencies
  - Many regulations are law - Many countries
- Lessors and Finance companies driving the need for Paper
  - Driven by the regulators……. Driven by the Airlines
- Availability of structured data from OEMs and repairers
- Few Data Standards
- Maturity of systems and technology to support changes to the processes
  - Ability to meet of Mechanics and Engineers mindset
- Cost of introducing technology and process changes across industry
- Lack of understanding or vision for ‘back office, not so trendy’ functions
- Tendency for airlines to accept incremental improvement of Siloed processes that should be redundant