

MRO IT: Fostering Support for IT Innovation

Helen S. Kang • London, UK • September 23, 2013

The data-intensive environment of the aviation MRO (maintenance, repair, overhaul) industry is now a reality. Extracting useful information from the exponentially-increasing amounts of data collected from varying sources and formats has become more challenging, yet also more and more critical. The urgency of a demand-driven aviation MRO network is stressed by the delay in implementing innovations and technologies to quickly process and send integral facts to the right places at the right time.

As new technologies continue to emerge and evolve rapidly, maintenance operations are challenged in getting IT investments or upgrades to support this new data-concentrated MRO ecosystem. The rationale for technology investment must clearly reflect cost-value benefits, except not all the benefits are quantifiable, such as quality, cost of disruption, reliability and safety. Due to difficulties in quickly getting IT investment approvals, MRO operations have turned to innovating existing processes, technologies and systems to meet the demands for faster intelligence.

Determining approaches to justify IT initiatives and sharing innovating measures were the foci of a September 23 Aviation Week Executive Roundtable held at the ExCeL Centre in London, UK. The goal of the roundtable was to assess innovations and successes from current IT projects, and create benchmarking IT business case approaches based on lessons learned.

The roundtable was hosted by Gary Smith, Head of Powerplant & Fleet Transition at easyJet, and Lee Ann Tegtmeyer, Aviation Week's Chief Editor MRO. The meeting was sponsored by The Boeing Company.

This was the fifth MRO IT roundtable and the third for the European region*. Previous meetings determined that mobility has become the catalyst for moving technology projects forward. The successes from these implementations and integrations may provide a benchmarking template for IT business cases and justifications for investment. However, short-term goals and key performance indicators must be clearly outlined for rationalization on business investment and transformation.

Organizations participating in the September 23 roundtable were ATA e-Business Program; AAR Corp.; AerData; Air Livery Ltd/Air Works; Air Supply Consulting; airberlin technik GmbH; Airbus; AJ Walter Aviation; American Airlines; Atlantic Airways Maintenance Department; Avmax Aircraft Leasing Inc.; BAE Systems Regional Aircraft; Bombardier; easyJet; EgyptAir Maintenance and Engineering; FL Technics; Flatirons Solutions; Flybe; GE Aviation; HEICO; IATA; IBM; kuehne+nagel management AG; Lufthansa Technik AG; Mxi Technologies; Nayak Aircraft Services; Panasonic System Communications Europe (PSCEU); PIA Engineering; Safran Corporate Strategy; Sanad; SenseAware; Sikorsky Aircraft; Snecma; StandardAero; TAP Maintenance & Engineering; TAP Maintenance and Engineering Brazil; TeamSAI; Technology Solutions; Thales Avionics; Turkish Technic; TWI; United Airlines; and Virgin Atlantic Airways.

Roundtable participants divided into six work groups that were challenged to respond to a set of questions that focused on following topics:

- Benchmarks on MRO IT projects' innovations, successes and challenges, and how innovation is fostered within companies.
- Goals for the next 12-18 months, and expectations on their IT systems.
- Determine approaches to justify IT initiatives. Based on best practices/approaches for justifying efficiency projects, create a template for IT business cases and justifications for technology investment.

The 2013 Aviation Week MRO IT (Europe) Executive Roundtable participants acquiesced that in order to have a successful IT business case, business and IT objectives must be aligned, and there must be engagement from all stakeholders from the beginning. In justifying IT investments, it was determined that leading with the outcome of efficiency improvements first is key to success. It was emphasized that innovation is not just about solving current problems, but also finding solutions to unpredicted problems in the future. Participants were encouraged to use the information from the Roundtable as inspiration for implementing projects successfully within their organization.

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KEY FINDINGS:

- Business strategies and IT initiatives MUST be aligned from the very beginning, with engagement from multiple disciplines.
- Lead with the story, not with the numbers. Provide examples that resonate with people and align with their real-life experiences. If you move forward with the anecdote, the numbers will follow. Focus on improving people's efficiency with the tool, rather than having the tool as the driving force (e.g. mobility). The numbers are needed for finance, but "selling the story" will bring projects success. These are going to drive innovation.
- The most important necessity of an IT system is the ability to distill data into "trusted" actionable advice and intelligence, in real-time and with predictive analytics.
- What is the cost of NOT doing it? (How do you quantify delays and compliance?) This is a significant business case variable that must be included.
- Innovation = Creativity x Execution + Optimism

Details of topical conversations in the work groups follow.

APPROACHES AND BENCHMARKS FOR INNOVATION

- Innovation = Creativity x Execution + Optimism.
- Phased approach to Innovation:
 1. Awareness.
 - "Islands" of problems - habit of protecting ideas rather than sharing, sometimes even within companies. Stop waste of "silo" innovation – connect people, share ideas/risks. Do not do it yourself!
 2. Inspiration – how to create awareness and get inspiration to solve problems.
 - Connect people via community platforms, voting systems and internal innovation showcases.
 - Feedbacks from the shop floor – employees start prototyping ideas on their own, and if it works, then show the manager.
 - Outside ideas - collaborate with research institutes for 'outside-the-box' thinking.
 - As much as inspiration is encouraged, be mindful of governance and compliance from IT, HR, regulators.
 3. Realization - how you facilitate innovation (idea to reality)?
 - The process of screening ideas and moving them into projects has to move faster. If ideas take 6-8 months to decide, then the momentum of something new is lost and everyone gives up.
 - Money, speed, technology, manpower – how to raise the money? How to quickly develop it quickly and then get the manpower to support that?
- Line of business vs. R&D - needs to be done outside the day-to-day procedures.
- Collaborative network – being able to connect.
 - o "Do you have the privilege to innovate or can anyone have a great idea?" (e.g. incoming Gen Y personnel need to feel connected at the workplace).
- Customization IS innovation.
 - o Much of MRO innovations are driven by OEMs. We are changing our systems to support the products they're developing.
 - o Innovation falls back on necessity or need. There is a diverse spectrum of IT platforms, and the main challenge is getting them to talk to one another without additional resources.
- Through CRM (customer relationship management) – problem solving, innovation, cost, flow of information for buying decisions, campaigns, web access (web portals).
 - o Continued interaction of customer voice in development process – build strategic teams consisting of the customer, competition and technology.
- Partnership between business and IT - consumer technology impacting and transforming business.
- Allow cannibalization (impact on existing processes) - be willing to sacrifice things to move forward.
- Improve data support and exchange (via standardization). Data is the currency to make the industry move faster.
- Forget competitive advantage – ask "What do you want to do in 5 years?" Even if it is something new

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presently, it could be replicated by others in a few years.

- Learn from other industries ahead of the game.
- Forget legislation/company policy/aviation regulation, safety in development process.
- Stop talking about IP – can we find ways to get over the barriers? Common data sets approach.
- Challenges to Innovation - reliability, scalability, security, IT naysayers, risk minimizers, momentum during innovation projects, legacy, mergers.

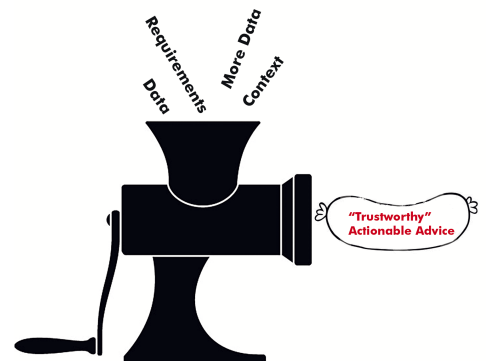
ASPIRATIONS FOR THE NEXT 12-18 MONTHS / REQUIREMENTS FOR AN OPTIMAL IT SYSTEM

What do you want to achieve in the 12-18 months?

- Data integration with zero disruptions, leading to less AOG.
 - So much data coming from myriad of sources with isolated data syncs (maintenance, environment, passenger, engine, finance, crew, flightlogs, etc.)
- Turn an Excel database into software.
- Convert legacy ERP systems to web-based and more.
- Paperless.
- Respond to regulatory requirements quickly.
- Internal process improvements.
- Capture more data for more value (useful decisions).
- A “plan for IT” that is integrated, focused, cost-effective, and generational.

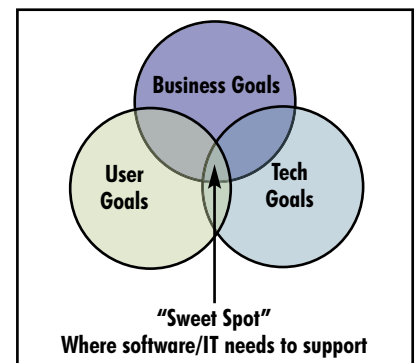
What you want out of your IT systems?

- Cheaper, Faster, Better!
 - Ultimately, greater efficiency, more safety with lowered costs.
- “Limitless” access – better connectivity and better data.
- Simplicity – getting data in a workable format.
- Traceability.
- Training.
- Usability – UI (User Interface) / UX (User Experience)
- Consumerization.
- Mobility.
- Distill data into intelligence – analytics, real-time, predictive.
 - With next-gen aircraft supplying too much data, IT has become the processing machine that is churning out “trusted” advice and intelligence. With super high-tech vehicles, all that data has to be analyzed and given right advice to the right people.



TEMPLATE FOR IT BUSINESS CASES AND JUSTIFICATIONS FOR TECHNOLOGY INVESTMENT

- Business Strategies + IT Aligned → CRITICAL!
 - Must be together from the beginning of the process.
 - Diversity is important! Engagement of multi-disciplines (culture, ages, profiles, etc.).
- Tangible vs. intangible benefits.
 - Measure efficiency, reduction of cost, anything that is creditive of advantage. How we can quantify “cheaper, faster, better”?
 - Come up with a solution before conceiving it.
 - Monitor outcome of initiatives. How successful is the project coming along?
- Challenge what is (im)possible.
- Take a lot of risks. It is hard to do this in our industry, so needs a mandate or



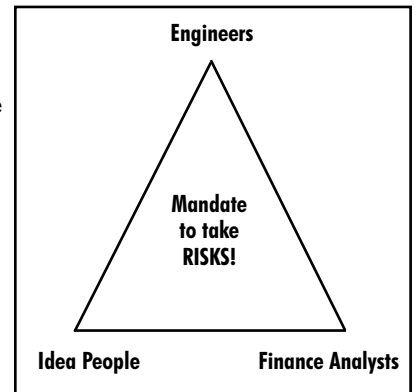
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at least management support.

- Lead with the story, not with the numbers. Improve efficiency of the people with the tool (Ex. mobile devices). These are going to drive innovation.
- Because IT investments are not easily approved, incremental solutions ease the way to justify the projects.
- The end goal has to be a balance of innovation (What if?) vs. respond to requirements (What do YOU want?)
- Question - We employ people who we trust to make multimillion-dollar decisions daily on engines and aircraft, but why are the same considerations not given to them to make technology decisions? Instead they are asked to make near-impossible IT justifications and business cases.
- Business Case Variables:
 1. Cost of NOT doing the initiative.
 2. Champion.
 - Business/operations leader has to justify the investment (ROI). Does it make business sense? The business leader enables the champion/imitative to move forward.
 3. Culture supports the idea/innovation.
 4. Consumerization of IT/social.

Anti-variables

 5. Did you consider and include ALL the stakeholders?
 6. Unions (legacy mindset).
 7. Quality, safety, regulatory, brand, customer – variables that cannot be measured.
 - These help drive the project, but 1-5 need to be there.
 8. Linked to company goals.
- Compelling anecdotes are key to justifying IT investments – going beyond the spreadsheet.
 - o Lead with the anecdote and the numbers will follow.
 - o Numbers are tangible and solidify the business case, but how much are true? Intangible elements, such as people-ware, have to be taken into account.
 - o True cost across the organization is used to determine feasibility.



* For findings and reports on past meetings, please go to <http://mediakit.aviationweek.com/ExecutiveRoundtable/>

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