Setting up SME workshops that engage strategic users can smoothen software migration.
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Planning is key for effective software migration

AviTrader MRO examines the key implementation steps and procedures that ensure airlines achieve a smooth migration to MRO software technologies and highlights the unique challenges involved in developing safety-critical processes.

By Keith Mwanalushi

Aircraft operators are increasingly seeking greater efficiencies from the integration of new software technologies, especially on the MRO side. Easier implementation processes often save time and cost for airlines but creates a challenge for developers to make the process more efficient and think outside the box.

TRAX, which provides aircraft maintenance software solutions has a Project Management Office (PMO) that handles system implementation and contract management from project initiation through to project closing. Omar Santos, Vice President, Global Services and Support at TRAX, says this office oversees the project managers and the integration and professional services personnel provided to assure successful product implementations.

Omar Santos, Vice President, Global Services & Support at TRAX

"The PMO office monitors risk management, project schedules planning and control, resource management, deliverables, and reports to the TRAX management teams and this office follows the Project Management Body of Knowledge [PMBOK] approach and its entire collection of processes, best practices, terminologies, and guidelines that are accepted as standard within the project management industry," Santos explains.

He says TRAX project managers and product specialists have a high degree of aviation-specific knowledge and

Matthias Wagenmann, CTO at Swiss-AS

experience. "We see this as key to a successful implementation as it allows TRAX team members to work more effectively with our clients on business process analysis."

Santos feels the TRAX team members can more effectively help with remapping of existing processes, documentation, identification of inefficiencies, software system configuration, recommendations for best practices, and process improvements based on their industry knowledge. He further mentions another key to achieving a smooth migration to TRAX eMRO and eMobility software is to set up SME workshops that engage strategic users. "This allows the customer and TRAX to demonstrate the software benefits, and to get buy-in from the team to help lead the migration effort given the normal resistance to change in any workplace."

Surprisingly, Santos indicates that a significant bottleneck can appear at the end of a successful – from the project plan schedule standpoint -- implementation. He says that is because "go live" is not really the end of the process, it is a stage in which team members need assistance with new software and processes. "It is a turning point where end users may need training, some outlier scenarios not previously tested pop up, or unvalidated migrated data causes issues. Post-implementation support is a necessary component to a successful project," he states.

At Swiss-As, AMOS implementation projects are not simply a software replacement, but actually a business transformation, informs Matthias Wagenmann, CTO at Swiss-AS. "For such large initiatives, the pre-conditions for any smooth software implementation are to start with proper scoping and planning in accordance with clear and measurable objectives."

Following standard project management methods, Wagenmann says the project team then breaks-down the activities (WBS) into smaller deliverables. At Swiss-AS, AMOS implementation projects are divided into the following work-streams with teams working in parallel; project and change management, business process re-design, training and support, data migration, API integrations, IT and systems, and go-live planning and preparation.

"The final scope will drive the project duration; our customers are now capable to implement not only AMOS, but as well our paperless and mobility suite within a shorter period of time," Wagenmann states.

Swiss-AS consultants also play a key-role guiding the customer's project team, as Wagenmann highlights, having done so many successful AMOS projects, the company can provide expertise regarding each work-stream. "Especially regarding the AMOS business process modelling and associated configurations. Bottlenecks to look out for are in the data migration work stream because the migrated data needs to be validated by business experts."

Finally, he says the go-live strategy must be carefully assessed to meet the business operations; a "big-bang" or a staggered more modular approach.

Nauman Saeed, COO at SkySelect says the key for implementation is aligning expectations within the company and understanding what is feasible and if so, when and how fast. "Typically, you start with the top management to understand key objectives and how these should be achieved."

This then follows documentation of the process jointly with the process owners to ensure that all needs are covered, and business complexity is understood, Saeed explains. "You will never be able to cover all complexities and uncertainties; however, it is important to have a clear understanding of what might delay or structurally impact the business objectives."

He says once mapping begins the technical teams then need to understand what can be achieved with current

Nauman Saeed, COO at SkySelect

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MROs are exploring how they can use their technology to simplify and improve process. © AAR

functionality, which developments might be needed, as well as defining which interfaces (inputs and outputs) are required and what time should be dedicated to design, build, test and actually implement these developments and interfaces.

"Only then can a feasible project plan can be presented for top management to sign off, understanding the complexities and potentially changing the order of developments based on immediate business needs," Saeed continues. "In the end, it is all about understanding business needs and complexities and communicating them effectively throughout the organisation to develop one plan. There will be changes to this plan and escalations, but when the baseline is clear, the focus can shift to implementation."

Throughout implementation, Saeed stresses that communication and managing expectations remain key, alongside training and understanding smaller issues, as well as finding flexible ways to solve any complications in the short term while providing long-term solutions – "In the end, it's all about communication and collaboration that will make it a success."

Clearly, the initial phase of the project is a key driver for the success of the implementation. During this phase, the project managers of both the provider and airline introduce the teams to form an initial level of understanding, and vitally, discuss the deliverables. "It is important to ensure everyone is on the same page with what functionality is key to the go-live of the system," declares Peter Mortimer – Sales Director at Rusada Aviation Software. He says by focussing on the key deliverables, the users gain confidence in the new system and confirm that they can complete their day-to-day work within ENVISION - the solution provided by Rusada.

Mortimer points out that process mapping also takes place in this initial phase. "This involves our business consultants spending time with key users for each area, to discover how they work on a daily basis. This is with a view to aligning ENVISION to work with current business processes, but also to improve and fix any areas of frustration."

He explains that process mapping then leads into the data analysis phase which involves a deep dive into the data from the customer's legacy system, with training on Rusada's import templates and working together to form a plan for extracting, formatting, and importing data into ENVISION. Mortimer adds that data loading can easily become a bottleneck for a project, especially if the customer intends to use this time to perform a data cleansing process.

"When planning a project, we do often incorporate time for data cleansing, however this is difficult to do without a prior view of the data and the amount of work that is required. Often, gaining access to a customer's data as early in the process as possible means that we can create much more accurate project plans," Mortimer notes.

At Canadian-based Win Air, every

Peter Mortimer – Sales Director at Rusada

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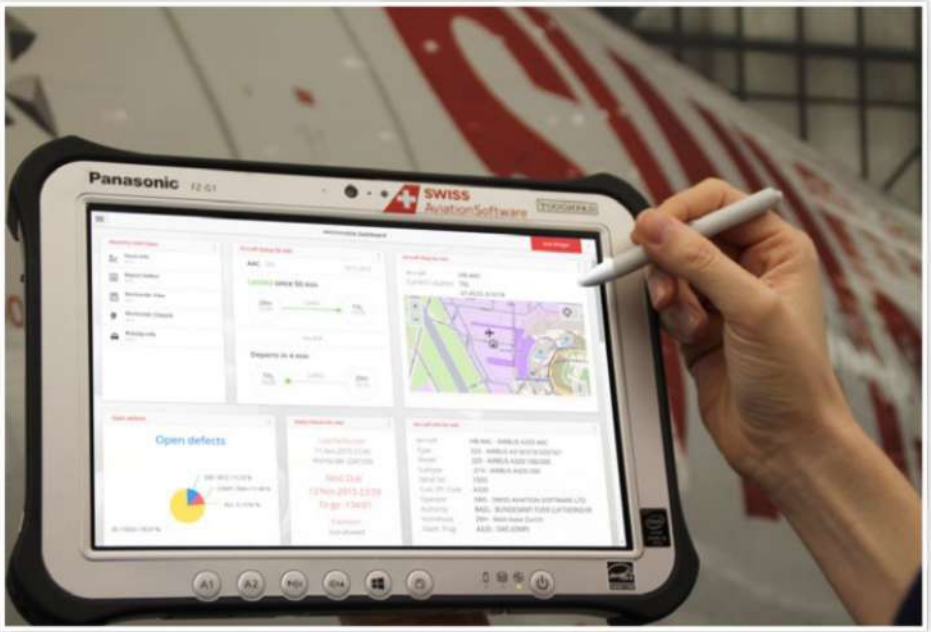
>
> *Peter Mortimer, Rusada*

implementation starts with consultative discussions with their business development team. Patrick Micacchi, Client Advocate says these consultations are focused on understanding an organisation's maintenance, inventory, and finance processes to determine the modules needed for their WinAir configuration. "Understanding the user's requirements is vital to a successful implementation. The WinAir implementations team creates a unique training syllabus for every customer to match their configuration, and training sessions are specifically tailored to how their organisation plans to use the software on a daily basis."

Once the WinAir configuration has been confirmed, training and migration of data starts. "We take a hands-on approach with our clients throughout the implementation process. Our team liaises with the client's project manager to schedule training sessions and weekly check-in meetings to review their progress, answer questions and ensure that the implementation is on track. While our trainers are busy teaching, our aircraft services team is available to build maintenance programmes and load aircraft data into the client's database."

During the implementation process, Micacchi warns of issues to be ware of including missing training sessions and check-in meetings which can result in an extended implementation timeline. "We also prescribe that clients do their 'homework' after each training session, giving the customer an opportunity to practice what they learned in a sandbox environment. If those activities are not completed, retention of information is dramatically decreased. Our customers are coached to avoid these obstacles to ensure a smooth transition to WinAir," states Micacchi.

Patrick Micacchi, Client Advocate at WinAir



Swiss-AS consultants play a key-role guiding the customer's project team.
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After the client has completed training, the go-live date can then be set. Micacchi indicates that WinAir will continue to provide online support throughout the go-live process, and onsite support can be arranged if necessary. "This is an exciting time for our clients as they now get to put their training into action. Once the go-live is complete, a client advocate will be assigned and regular check-in calls will be established to ensure success in using WinAir. This support is included and will continue for the duration of the subscription term," he says.

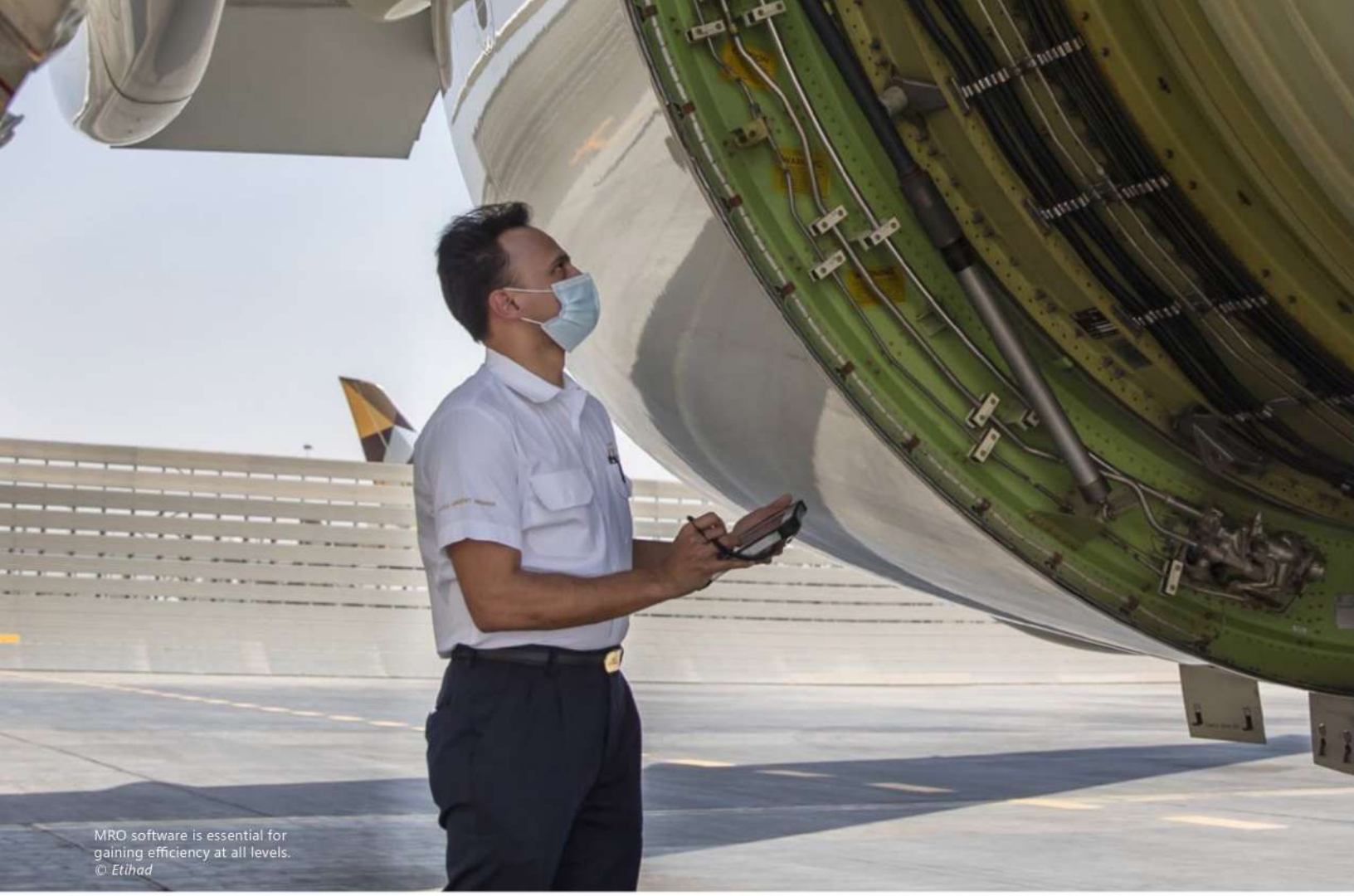
Developing safety-critical MRO software

Naturally, when developing a safety-critical software, a strong focus on quality is a must, reckons Wagenmann. At Swiss-AS, around 25 software quality engineers work exclusively on ensuring a stable and robust system. More than 100 servers continuously execute >100'000 automated tests and alert when functional or performance regressions are detected.

Another key aspect Wagenmann mentions is IT security, which minimises the vulnerability of the system to unauthorised disclosure of information, damage to data or disruption of service. "Swiss-AS mitigates this risk through continuous checks for publicly disclosed vulnerabilities within the libraries used, static source code analysis and comprehensive penetration testing of the entire system."

As the level of digitisation increases, so does the demand for system availability, Wagenmann observes. "We invest heavily into the robustness and stability of AMOS and we provide tools to monitor the operation and detect emerging operational problems before they result in an interruption of operations," he notes.

Given the mission critical importance of regulatory and safety aviation software, the folks at TRAX have found the necessity of incorporating multiple



MRO software is essential for gaining efficiency at all levels.
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auditing capabilities and approval steps for data entry and transactions. In addition, they have added validations throughout the system for users conducting various tasks or actions. For example, a task card can validate a skill or certification, including if it has expired or not, before a user can sign on a job.

Saeed at SkySelect reminds that it can be difficult to look back and answer the who, what, when, where of aircraft parts procurement, especially when operations are constantly moving and changing in real time. "First and foremost — and rightfully so — there is a lot of compliance that needs to be followed to ensure flight safety. These compliance obstacles are challenging and hinder the efficiency and profitability of airlines and MROs."

To combat these challenges, Saeed feels the aircraft parts supply chain needs a system that can easily answer any questions about a specific part. He says the purchaser should be assured that all the right suppliers were invited, can understand when and how challenges were solved, and know everything about the part their company is acquiring.

"Even in 2022, far too much of the process and information of buying and selling aircraft material is done offline," Saeed suggests. "This makes it extremely difficult to track and find information critical to compliance and safety. The quickest way to compliance and transparency is moving from a manual, paper-based system to a modern digital process."

Mortimer from Rusada echoes some similar thoughts saying a challenge often faced is keeping up with different regulatory requirements and different variables. He points to no set standard for Service Bulletins for example, saying these come in all sorts of different formats, with often complex rules and variables to follow. "To ensure we cater for all these variables, we build our software with flexible rule creation tools as standard, meaning that for most requirements of an SB, or complex maintenance task, we can cater for it - out of the box."

Another challenge observed at WinAir in development relates to the diversity of each client in how they utilise the system. Certainly, every organisation will have unique workflows based on their maintenance policy manual. Given that no two users operate exactly the same, Micacchi notices a high degree of variability in the requirements of maintenance software from one user to another. "Thankfully, at WinAir we offer a highly scalable solution which can be configured to an organisation's requirements."

WinAir have developed a range of standard configurations that operators can choose from, each with pre-defined modules that allows users to add additional features to their configuration as needed to maximise the utility of their software package.