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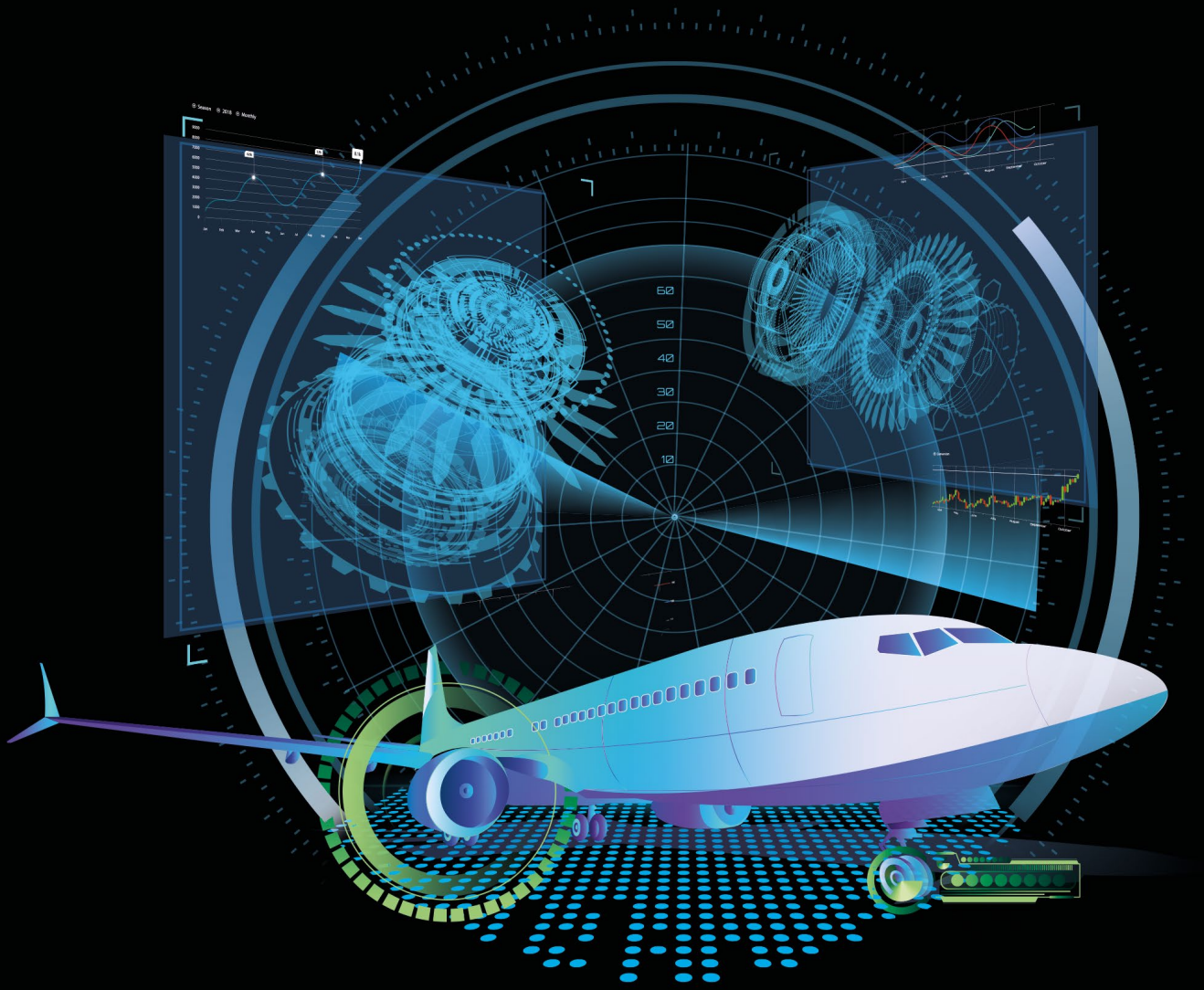

Enhancing MRO Services in Aviation with Process Mining

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Can Process Mining solve the challenges faced by MRO operators in the aviation industry?

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Can Process Mining solve the challenges faced by MRO operators in the aviation industry?

Imagine an aviation industry where aircraft grounded due to engine shortages, lack of qualified staff, or global IT failures are a thing of the past. In the dynamic world of aviation, continuous innovation is paramount to maintaining a competitive edge, particularly within Maintenance, Repair and Overhaul (MRO) Operations. This paper explores state-of-the-art MRO under the application of process mining, which can reduce total maintenance costs by 10%–15% from better inventory management, reduced downtime, and more efficient use of resources. Real-time data can furthermore reduce spare-parts costs by 5%–10%, ensuring that aviation MRO operations overcome multifaceted challenges such as stringent regulatory requirements, complex supply chains, and constant pressure to minimize aircraft downtime.

By leveraging process mining, organizations can gain unparalleled insight into their operational processes, uncovering inefficiencies, bottlenecks, and areas ripe for improvement. This paper presents a compelling insight into the specific challenges encountered in MRO environments, highlighting the transformative potential of process mining in optimizing these operations. Key areas of focus include the integration of real-time data analytics to optimize the ordering of parts, engines, core MRO processes, predictive maintenance models for challenges related to inventory management, and the evolution towards proactive maintenance strategies, including staff forecasting.

By analyzing vast datasets generated during maintenance procedures, process mining not only facilitates real-time decision-making but enables proactive maintenance scheduling based on predictive analytics. These technologies promise further MRO practices by predicting equipment failures before they occur, thereby minimizing disruptions and reducing operational costs.

> "Process Mining is a game-changing solution for the airline industry, which constantly grapples with the complexities of interconnected processes and numerous stakeholder dependencies."
>
> **Aerospace and Defense Supply Chain Partner, Deloitte US**

1. Process Mining: Bridging data science and process optimization with emerging innovations

Process Mining, also called "data science in action" by its pioneer Prof. Wil van der Aalst, offers a meticulously crafted set of tools designed to provide fact-based insights and support process improvement. This innovative field seamlessly integrates data science with process science, merging event data generated by (heterogeneous) IT systems with detailed process models.

Modern process-mining applications serve several key functions, including process discovery, process analysis and modeling, conformance checking (comparing as-is processes with target processes), and ultimately optimizing business processes. Often referred to as an "X-ray of business processes", process mining makes the true landscape of business operations visible from an objective standpoint.

Traditional process mining operates on three main data components: case ID (part number or purchase order number), activity (process step such as "create PO"), and timestamp (indicating when the activity occurred). The resulting event log, composed of this information and enriched with additional details, is extracted from one or more source systems (most commonly ERP or SCM systems). This data reflects the digital footprint, or "digital twin," of a specific process such as Accounts Payable (AP). These digital twins are then analyzed by process-mining tools to uncover valuable insights.

Each event in the process-mining landscape, such as a part order for a scheduled C-Check of an aircraft, contributes to the overall process landscape. Beyond the primary target process (happy path), process-mining applications visualize all possible variants, including unwanted ones, which often serve as starting points for deeper analysis and optimization.

Object-centric process mining (OCPM): A key advance

An exciting advance in the field of process mining is Object-Centric Process Mining (OCPM). In contrast to the traditional case-centric approach that focuses on single processes, OCPM facilitates interconnected analysis. For instance, it allows simultaneous examination of a purchase order within the purchase-to-pay process and its corresponding invoice within the accounts payable (AP) process. This advanced methodology maps a single event to multiple objects, such as a PO, invoice, aircraft ID or spare parts order, providing a holistic view of interacting processes. The OCPM advantage is clear: it enables the visualization, analysis, and optimization of these interacting processes in a manner that reflects their multi-dimensional reality.

Process Mining, with its data-driven approach, is especially effective for optimizing complex and interrelated workflows. It holds significant potential in industries such as aviation and logistics, where intricate interdependencies and complexities define daily operations.

Emerging innovations and trends in process mining

As process mining evolves, it integrates with cutting-edge technologies and adapts to the growing demands of dynamic business environments. The latest innovations ensure that process mining stays at the forefront of operational excellence. Some of the key trends driving this evolution are as follows:

1. Integration with artificial intelligence (AI) and machine learning (ML):
AI and ML are increasingly integrated into process-mining tools to enhance predictive analytics and enable organizations to foresee process deviations and inefficiencies before they occur. These technologies can also automate the identification of complex patterns in large data sets and suggest optimization strategies.

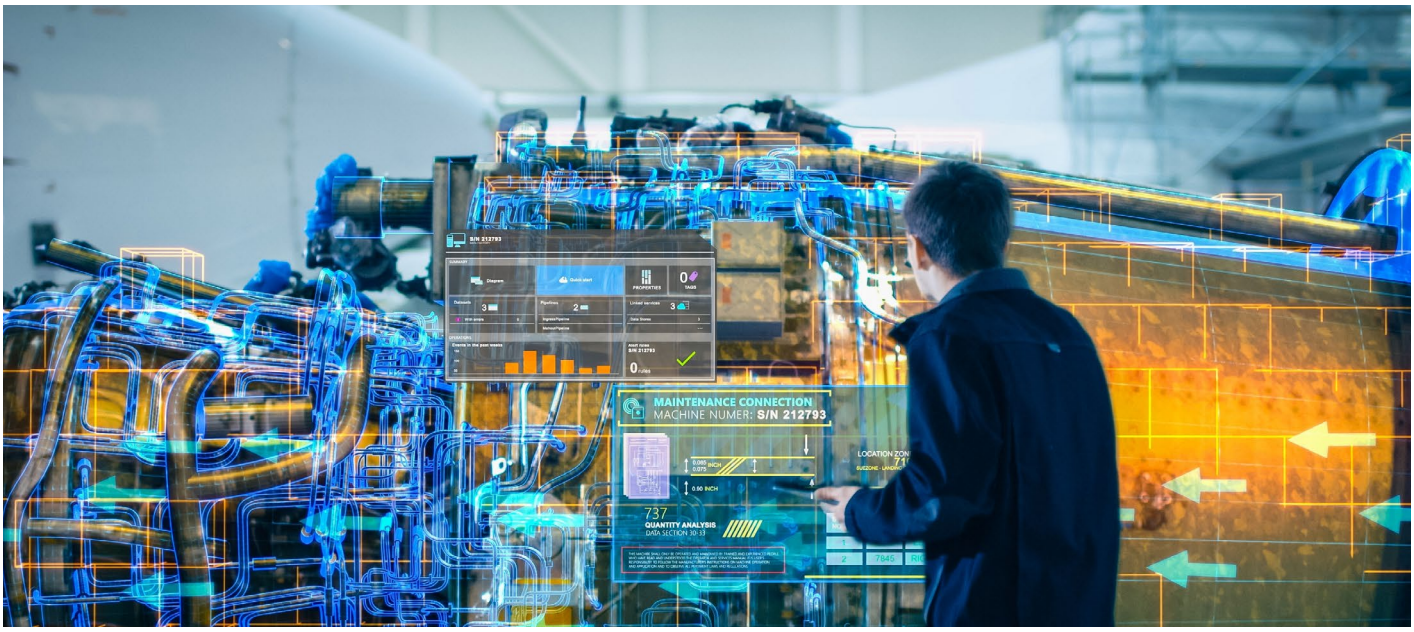
Generative AI as a subset of AI can enhance the capabilities of process mining by optimizing data quality, advancing data analysis, and by automating process-model generation and scenario simulation. It can also enhance process compliance and risk management by using historical process-data analysis.

2. Process Mining in Robotic Process Automation (RPA):
Process Mining is being used in conjunction with RPA to identify and prioritize automation opportunities that ensure that the most beneficial and feasible processes are automated to optimize overall efficiency.

3. Sustainability and compliance:
Process Mining ensures sustainability and compliance. By analyzing processes, organizations can identify inefficiencies that contribute to waste and non-compliance with regulatory requirements.

4. Hybrid process mining:
Combining classical process mining (based on event logs) with task mining (software analysis of user interactions) provides a more comprehensive overview of both automated and manual tasks within processes.

By keeping track of these trends and innovations, organizations can harness the full potential of process mining to drive operational excellence and strategic advantage. The next section, after highlighting the capabilities of process mining for complex industries such as aviation, looks into the current trends and challenges in the MRO sector that process mining can address.



2. What are some of the current trends and challenges within maintenance, repair, and overhaul operations?

The airline maintenance, repair, and overhaul (MRO) sector is navigating a complex landscape characterized by significant commercial, geopolitical, and process-related challenges. As global air travel continues its post-pandemic recovery, MRO operators are under pressure to meet the rising demand for maintenance services while managing escalating costs, supply chain disruptions, and regulatory compliance issues. Up to 45% of overall costs are related to operating expenses, of which 11% are maintenance[1], so maintenance is a critical focus for airlines and MRO operators, representing a significant cost driver and an opportunity for efficiency gains.

The already complex task of maintaining aircraft fleets is made even more difficult by volatile parts availability and unpredictable demand coupled with various regulatory environments. These challenges underscore the need for more efficient and responsive operational strategies. Process Mining, a tool that leverages data to optimize and streamline processes, offers a promising solution to many of these challenges, in particular by improving the availability of spare parts and ensuring on-time provision of maintenance activities.

Besides typical challenges such as delivery shortages and logistical hurdles, specific situations like those faced by Pratt & Whitney with their PW1000G-series engines illustrate the severity of the issue. The company's unexpected wave of engine checks has significantly hindered airlines and aftermarket, with nearly half of the Pratt-powered A320neo fleet potentially affected, disrupting operations well into 2024. This scenario highlights the broader implications of supply chain vulnerability in the aviation sector.[2]

This section below delves into some of the challenges faced by MRO operators, drawing on insights from interviews with professionals in the MRO and airline sectors regarding current pain points, challenges, and ongoing trends. This information has helped shape a comprehensive understanding of the dynamics influencing the MRO landscape in 2024.

> "It's very concerning to see all these A320s lined up at BER, sitting idle and waiting for the reinstallation of their P&W engines."
>
> **C-Level Executive of a Major European Airline**

[1] IATA, "Airline Maintenance Cost Executive Commentary- FY2022 Data", accessed August 8, 2024
[2] Abid Habib, "Pratt & Whitney GTF Engine Issues Force Lufthansa To Prolong Lives Of Older Airbus A320ceo", Simpleflying, accessed August 9, 2024

Commercial challenges

As part of the broader spectrum of challenges confronting the airline MRO sector in 2024, commercial issues are some of the most pressing. These issues are primarily driven by rising operational costs and complex logistics. A notable increase in parts and labor costs—approximately 8.3 percent last year with a decrease forecasted to around 6.5 percent this year—reflects ongoing pressure from inflation and supply-chain disruption, increasing budgeting challenges and lowering profit margins.

A significant factor is the increased cost of parts and labor, which has surged due to inflation, supply-chain disruptions, and the higher wages needed to retain skilled technicians. Costs for materials and services moreover remain volatile, making it difficult for MRO operators to simultaneously budget, maintain profit margins, and ensure customer demands are met. Escalating competition for skilled labor across industries further increases these challenges, as aerospace and defense (A&D) companies must offer more competitive wages and benefits to attract and retain their workforce amid a tightening labor market.[3]

Another factor contributing to the commercial landscape are high storage costs, especially at or near airports, which add another layer of financial strain and force operators to balance inventory for critical high-value parts with minimum storage expenses. Crucial here is the trade-off between holding a large safety stock, which ties up capital and incurs storage costs, or risking stockouts that can delay repairs and ground aircraft, leading to lost opportunities and customer dissatisfaction.

Furthermore, the constrained supply of new aircraft has led to a diminished flow of surplus material, complicating the repair and maintenance demands of older, out-of-production aircraft. Delays in delivery of new aircraft, such as the A320neo fleet, have further tangled this issue and driven higher demand for MRO services. Approximately 30% of the world's in-service aircraft fleet comprises late-generation models, leaving around 70% to be progressively phased out or updated. This significant portion of aging aircraft intensifies the need for MRO services, since these models require more frequent upkeep and updates to meet operational standards and regulatory requirements.[4]

> "The challenge of sourcing parts has grown exponentially, as many components are now restricted by export laws. Suppliers, bound by regulations, are forced to clear entire inventories."
>
> **CEO of External CAMO Subco**

Efficient inventory management becomes increasingly challenging under these conditions, particularly when MRO operators must strategically position high-value parts to ensure rapid availability while minimizing costs and considering limited high cost airside storage capacities. The imperative to manage and plan capacities and capabilities, both process-related and commercial, is further complicated by fluctuating costs and operational demands. To stay competitive, operators must further optimize their processes and innovate their inventory management, supply chain coordination, and capacity planning.

Geopolitical challenges

Geopolitical factors continue to play a pivotal role in shaping the challenges faced by airline maintenance, repair, and overhaul (MRO) operators in 2024. Ongoing shifts in the origin of parts and increased raw-material costs,[5] driven by geopolitical tensions and trade restrictions, have significantly impacted supply chains. These dynamics are further increased by sanctions and trade barriers, which have not only limited access to essential components but have compelled operators to seek alternative suppliers, often at higher cost and with longer lead times. This introduces a high degree of uncertainty and a further layer of complexity into procurement processes.

What's more, and for the first time in the history of aviation, supply is lagging significantly behind demand. Average wait times for new planes have stretched to 10 years, driven by a convergence of geopolitical challenges, a post-Covid demand surge, and socio-economic shifts such as the rising middle class in India and the emergence of new operators in developing markets placing large orders. This unprecedented delay highlights the profound impact of geopolitical factors on the aviation industry.[6, 7]

The global nature of the aerospace industry means that MRO operators must navigate a complex regulatory landscape. Compliance with different international regulations adds yet another layer to the operational burden, complicating efforts to maintain a steady flow of parts and services across borders.

Workflow and procedural challenges

Operational processes within MRO organizations are under significant strain due to changing supply chains and unpredictable demand, particularly from unscheduled maintenance and aircraft-on-ground (AOG) events. Managing regulatory compliance for parts, processes, and documentation adds to the complexity. And the management and planning capacities and capabilities across various locations, often with limited staff, requires precise resource allocation and robust procedural frameworks, ideally both data driven.

[3] Deloitte, "2024 aerospace and defense industry outlook", accessed August 9, 2024
[4] Airbus, "Global Market Forecast", accessed August 9, 2024
[5] Statista, „Jahresdurchschnittspreis von Aluminium weltweit bis 2023", 2022
[6] Kasper Oestergaard, "Airbus and Boeing Report April 2024 Commercial Aircraft Orders and Deliveries", Flight Plan- Forecast International, accessed August 9, 2024
[7] Deirdre Fulton, "Aviation Market Analysis: India's Domestic Aviation: A Deep-Dive Into a Decade of Growth", OAG, accessed August 9,2024

MRO processes are enmeshed with other processes both within and outside of aviation operations, for instance ground operations, traffic and schedules, and weather events. Planned and unplanned maintenance must thus be navigated as dynamically as possible to adjust for unforeseen influences.

One of the most critical process-related challenges is the lack of data availability and integration across the supply chain. Information on parts, maintenance events, and logistical processes is often either not readily available or is siloed within different systems, in many cases still relying on outdated communication methods such as phone calls and emails, and lacking a digital paper trail. This lack of visibility and transparency within the supply chain can lead to inefficiencies, increased downtime, and higher costs for both airlines and MRO operators, while the logistical complexities inherent in coordinating parts and services across global networks contribute to delays and further drive up costs.

3. What value potentials are feasible with process mining?

Process Mining provides a variety of potential solutions to these challenges by enabling MRO operators to analyze and optimize their processes based on actual data flows. Operators can apply process-mining techniques to identify bottlenecks, streamline resource allocation, and improve supply-chain visibility, ultimately reducing downtime and ensuring that parts are available where they are really needed – at the right time and quantity.

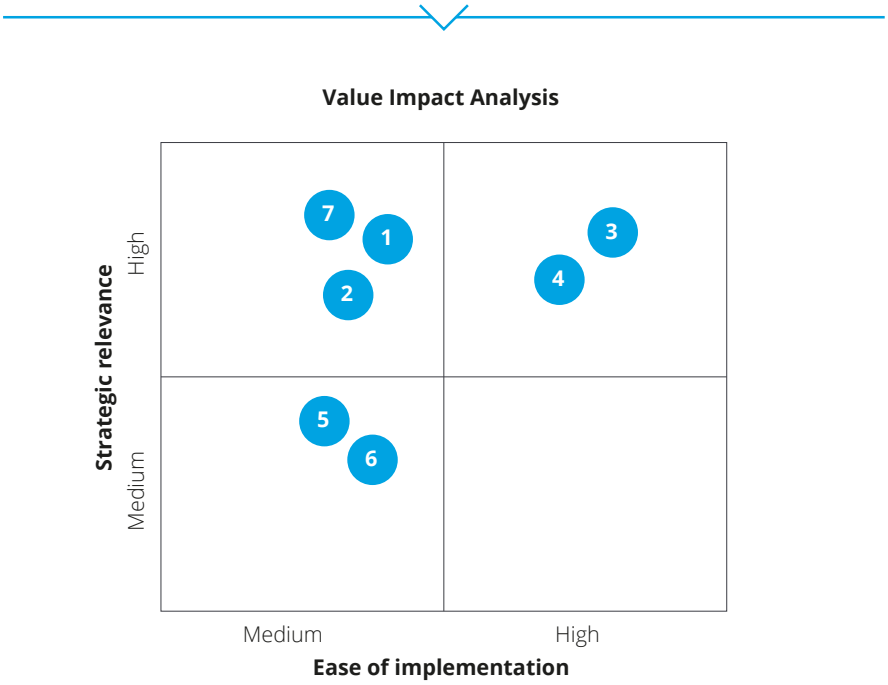
Similar to the process-mining applied in general aircraft turnaround operations (at Munich airport),[8] Deloitte's methodology starts with implementing dashboards tailored to both MRO operators and airlines. Leveraging these use-case-specific analytical dashboards can continuously identify improvement and automation potentials and monitor process improvements. At the same time, dashboards are jointly defined by their future users to ensure easy day-to-day usage and a friendly and effective user experience.

Possible areas of application include supplier-compliance monitoring and the creation of end-to-end visibility of the E2E parts ordering and delivery process, depending on terms and conditions and available data.

Various other use cases are feasible, depending on available data and system infrastructure. Successful implementation of such digital solutions is based on parameters such as an adapted organizational setup for process management (transforming those insights into actions), a commitment to data-driven decision-making and, above all, the know-how and support of implementing process mining into an organization, which is precisely where Deloitte shines as a partner.

Fig. 1 – Impact/Effort Analysis, Deloitte 2024

1. **Predictive maintenance**
   scheduled maintenance and unscheduled historical analysis
2. **Supplier SLA compliance**
   parts procurement and logistics
3. **Inventory analysis and monitoring**
   incl. proactive intelligent alert, e.g. when parts stock levels are behind specific threshold
4. **End2End supply chain monitoring**
   Consolidation of status events per parts oder
5. **Order to cash analysis**
   Payment flow
6. **Accounts payable monitoring**
   incl. payment terms optimization
7. **Working capital analysis**
   Over-/Understock analysis



[8] "Process Mining for resilient airport operations: A case study of Munich Airport's turnaround process", ScienceDirect 2023, accessed August 15, 2024

4. How Deloitte integrates process mining into its consulting practice

Technology and business transformation, especially in the transportation and logistics industry, is a broad field and one of the core service areas of Deloitte Consulting. As the leading Big4 company, Deloitte integrates state-of-the-art technology into its service offerings and constantly monitors its clients and their application of process-mining technology.[9] Delivering process-analytics and -optimization projects, process-mining tools such as Celonis are crucial assets that deliver real value to clients in the shortest possible time. Deloitte adds value by using its profound industry and process expertise in aviation, synergistically combined with dedicated data-engineering skills and expertise. While an effective combination of tech and industry know-how may sound trivial, the following elements are critical to the success of process-mining-based corporate transformation:

Effective use cases
High-transactional core processes alongside specific, non-standard processes – both require valuable, relevant use cases strictly aligned with the business (value promises).

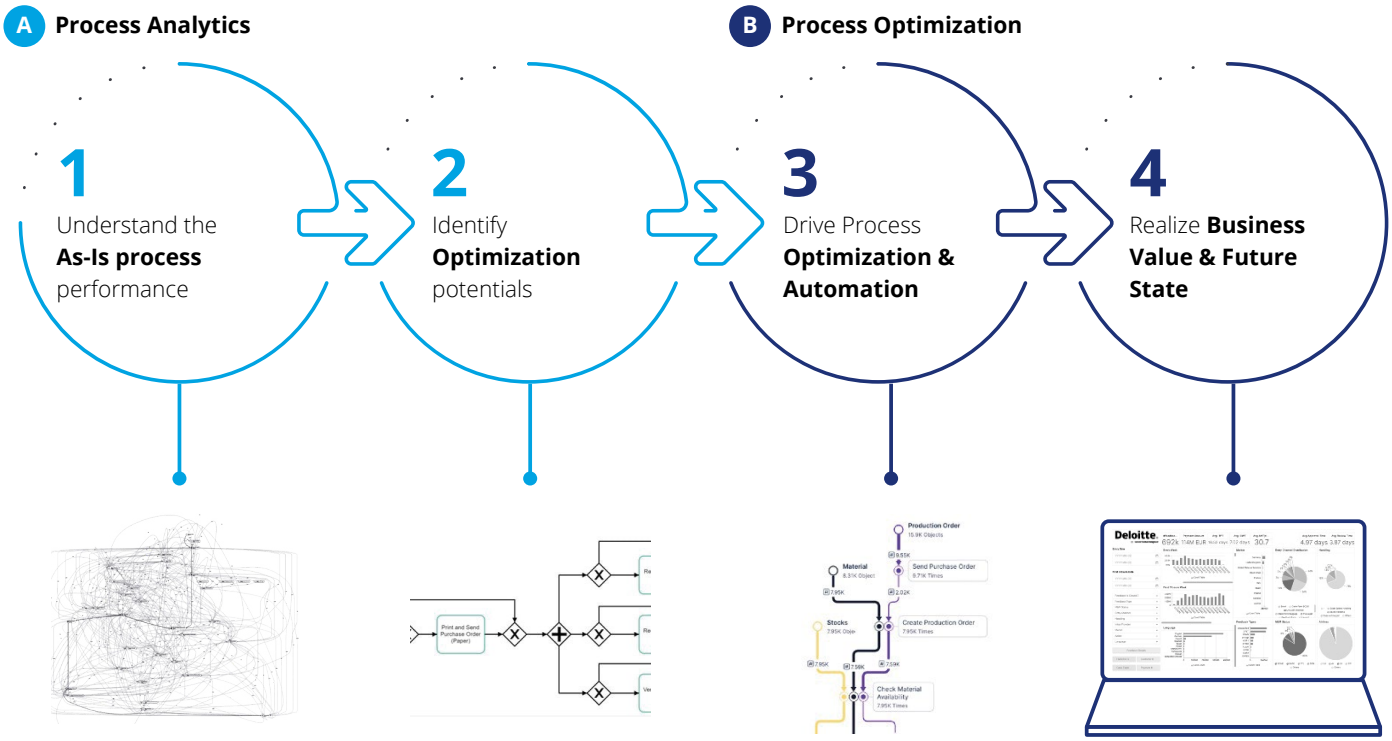
Industry contextualization
Process-mining-based as-Is (current state) analysis should be compared and benchmarked against comparable stakeholders in the market, then contextualized with internal process-improvement initiatives or process excellence agendas, whether with an integrational or silo-based approach.

Concrete target picture
Desired outcomes must solve either a specific challenge in the business model (process-based) or deliver a targeted outcome (shortened throughput time, reduced process costs, simplified process design). Both must be measurable, either qualitatively or quantitatively.

Validated interpretation and business case
Process-mining-based analytics require explicit and validated interpretation based on industry and process expertise to ensure a robust business case, demonstrable value potential, and sustainable conclusions.

[9] Deloitte, "Global Process Mining Survey 2021", accessed August 15, 2024

Fig. 2 – Deloitte Process Mining Framework, 2024.



Deloitte Consulting has established an integrative consulting and delivery approach consisting of two main areas:

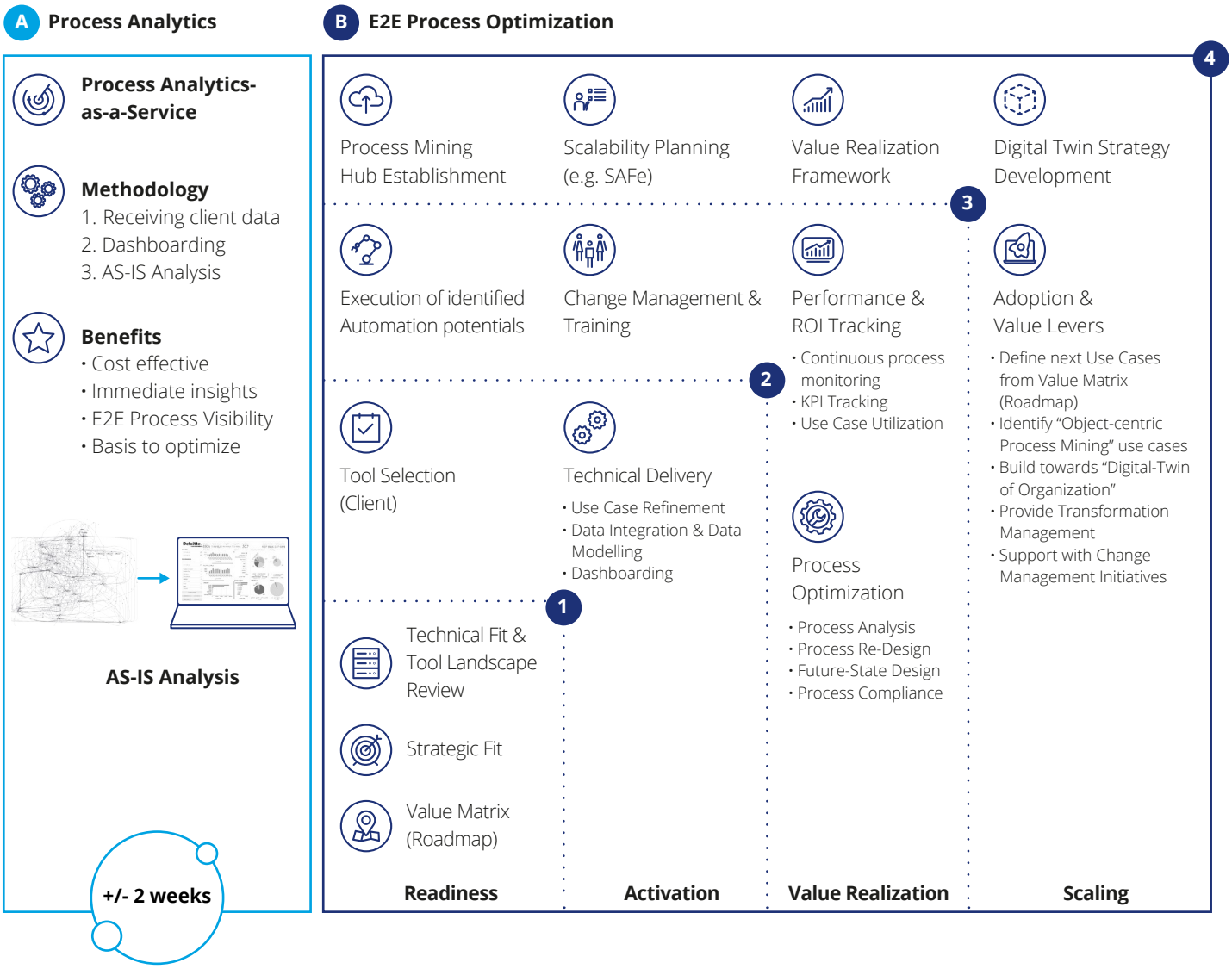
A. Process analytics as a managed service

Based on a simple data abstract of the client (snapshot), a holistic copy of the as-is process is created and its performance visualized in a dashboard. This provides immediate insights into hidden process inefficiencies or ineffective process design which impact costs, time, and process efficiency. Deloitte moreover provides the suitable technical solution (process-mining tool) directly within the service so as to avoid any licensing issues. This solution delivers fast and effective process insights with greatly reduced time-to-value in comparison to traditional approaches.

B. E2E process optimization

The approach begins with a readiness assessment to align relevant use cases and ensure the technical fit of data and systems. It is followed by lean and efficient technical implementation, including a live data connection to the client source system for concrete business value in near real time. This value can be realized in both an analytical context—such as visualizing and measuring KPIs—and in an operational context, including reduced throughput time, increased automation rate, cut costs, and redesign of the future process state.

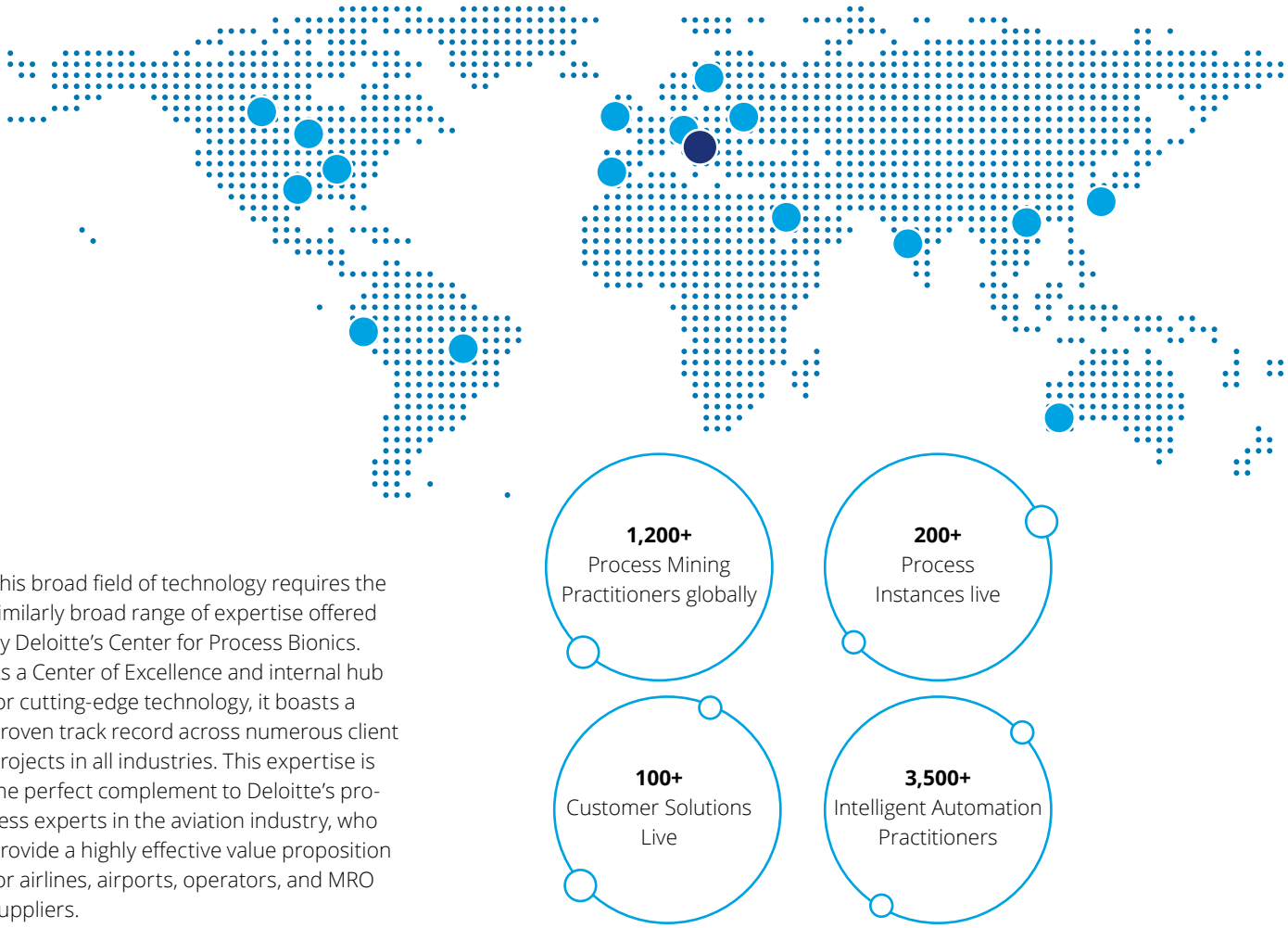
Fig. 3 – Deloitte Process Mining Framework, 2024.



While this framework is based on process mining as the core technology, further capabilities such as automation, AI-driven predictive analytics, and continuous process improvement are strategic assets of Deloitte Consulting's "Process Analytics and Optimization" offering. Market-leading automation tools such as UiPath and ServiceNow are particularly well suited to extending the value of process-mining solutions such as Celonis. Organizations can leverage these tools to capitalize on identified automation opportunities and ensure that the most impactful tasks are automated to drive significant operational improvement.

Fig. 4 – Deloitte's Center for Process Bionics, 2024.

Global Network of Expertise



This broad field of technology requires the similarly broad range of expertise offered by Deloitte's Center for Process Bionics. As a Center of Excellence and internal hub for cutting-edge technology, it boasts a proven track record across numerous client projects in all industries. This expertise is the perfect complement to Deloitte's process experts in the aviation industry, who provide a highly effective value proposition for airlines, airports, operators, and MRO suppliers.

5. Future trends

As the aviation industry navigates its recovery post-pandemic, we expect a variety of key developments in maintenance, repair, and overhaul (MRO) that will significantly influence its trajectory, including the adoption of state-of-the-art digital technology and strategic improvement across operational processes. From sophisticated digital tools and AI-driven predictive maintenance to enhanced sustainability measures and optimized global supply chains, these trends will revolutionize the delivery of MRO services. Moreover, the rise of regional and urban air mobility introduces increased complexity, demanding more agile and technologically integrated MRO solutions to ensure safety, efficiency, and reliability in aviation maintenance. Process Mining can play an enabling role in harnessing these trends, offering valuable insights into operational data that can drive efficiency and streamline maintenance workflows. These changes reflect a broader shift towards a more interconnected and technologically advanced aviation ecosystem.[10]

> "With the 'One CAMO' initiative, we anticipate major airline groups will overhaul their processes and governance structures to fully capitalize on the promised synergies and cost-saving opportunities."
>
> **CEO of Aviation Start-up**

5.1 Continued digital transformation in MRO

Increased use of digital tools: Advanced IT systems and digital tools in MRO operations have markedly enhanced operational efficiency and accuracy, significantly reducing reliance on paper-based backups. Despite this progress, the pace of digital adoption in the MRO sector has been relatively slow compared to other industries. Here, process mining has emerged as a pivotal tool for accelerating digital transformation by uncovering inefficiencies and optimizing workflows throughout the maintenance process.

Integration of comprehensive systems: Integrated MRO systems such as AMOS and CAMP Suite have revolutionized the approach to maintenance operations by consolidating financials, inventory management, and planning into a cohesive operational framework. This integration extends across various stakeholders—connecting repair shops, CAMO, OEMs, and part producers—to facilitate a more synchronized workflow and data exchange. In this complex network, process mining plays a crucial role, enabling the identification of process inefficiencies and the enhancement of inter-system interaction to streamline operations and improve overall service delivery.

5.2 Advances in predictive maintenance

Data analytics and AI: Data analytics and advanced machine learning models are transforming the way maintenance needs are predicted within the aviation sector. This technological advance minimizes downtime and optimizes resources by leveraging the increasing volume of data generated from flight and technical operations. Strategic initiatives to leverage this data are increasing, not only to enhance in-flight services but to significantly improve maintenance processes in tech ops. Process Mining has become an invaluable tool for extracting actionable insights from complex data sets and for facilitating the implementation of predictive-maintenance strategies.[11]

IoT: The increasing use of IoT devices allows for continuous monitoring of aircraft parts, significantly enhancing maintenance efficiency by enabling precise prediction of when servicing is required. As the number of software components listed in the bill of materials for modern aircraft continues to grow, we anticipate this trend will persist, merging information technology (IT) with operational technology (OT). This convergence leads to the availability of more granular data, which in turn enhances strategic decision-making for parts replacement to preempt downtimes and alleviate inefficiencies. In this sophisticated data-driven environment, process mining proves indispensable by helping to analyze detailed operational data and optimize maintenance scheduling.

5.3 Sustainability in MRO operations

ESG data integration: Systems that monitor and report Environmental, Social, and Governance (ESG) metrics mark a significant step forward in improving transparency and accountability within the aviation industry. This shift is largely driven by increasing regulatory requirements that mirror trends seen across various sectors where there is a rising demand for comprehensive ESG data disclosure along the entire value chain. Process Mining can play a pivotal role in aiding organizations to effectively track and optimize ESG-related data flows, ensuring compliance and enhancing operational decisions via detailed process insights.[12]

Decarbonization efforts: The advance of sustainable aviation fuels, electric propulsion systems, and other innovative technologies is reshaping efforts to reduce the environmental impact of aviation. These developments significantly alter how maintenance, repair, and overhaul (MRO) operations are conducted. Traditional maintenance procedures are being turned upside down; electrical systems and batteries, for instance, require different mainte-

[10] Deloitte, "Airline Tech Trends 2023" , accessed August 9, 2024
[11] TUM Data Innovation Lab, "Predictive Process Management for Aircraft MRO", accessed August 15, 2024
[12] Deloitte, "Starting Your CSRD Journey: Aviation Finance and Leasing Insights", accessed August 9, 2024
[13] Deloitte, "Decarbonising aviation: Cleared for take-off", accessed August 9, 2024

nance strategies than conventional engines. This shift introduces increased complexity due to a broader variety of maintenance requirements that must be considered and integrated. In this evolving landscape, process mining can be instrumental, providing the necessary insights to manage these complexities by optimizing new types of maintenance workflows and ensuring that MRO operations keep pace with technological advances.[13]

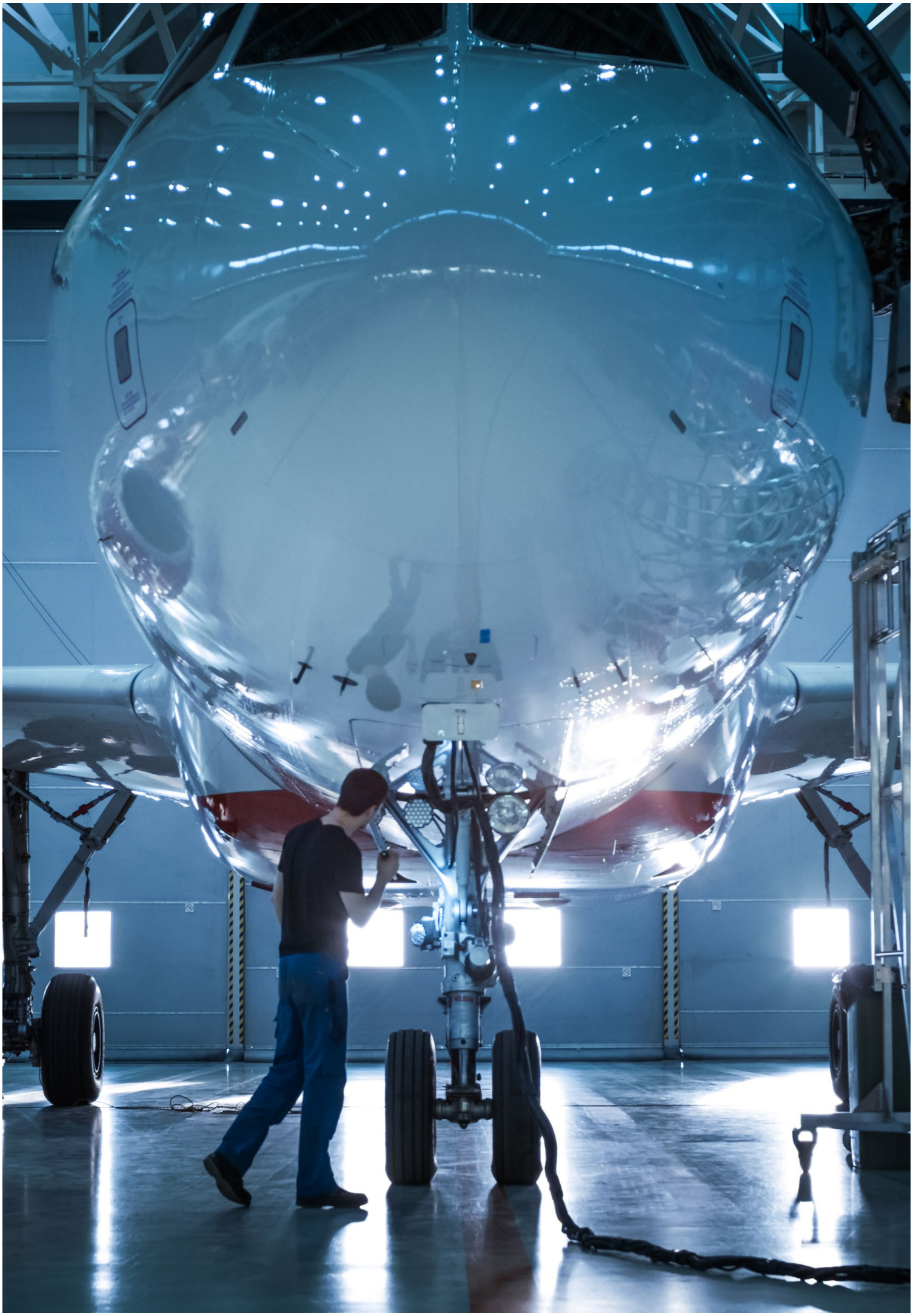
5.4 Global supply chain and regulatory integration

The One CAMO transition: The transition to a unified Continuing Airworthiness Management Organization (CAMO) model is designed to streamline maintenance responsibilities under a single accountable entity, thereby enhancing oversight and operational efficiency. This restructuring provides a significant opportunity to merge CAMO departments from various operations companies, potentially yielding substantial efficiency gains when processes are meticulously combined and integrated. Process Mining plays a crucial role in this transition, providing deep insights into existing workflows and pinpointing opportunities for integration and optimization. Organizations can leverage process mining to ensure that the consolidation of CAMO activity leads to streamlined operations and enhanced maintenance coordination.

Blockchain for traceability: The integration of blockchain technology into parts certification is poised to dramatically enhance traceability within the MRO sector, ensuring that every component is accurately tracked throughout its lifecycle and significantly reducing the risk of counterfeit parts entering the supply chain. We anticipate that innovative initiatives worldwide will continue to drive these developments, harnessing the decentralized control mechanisms of distributed ledger technology (DLT) to create tamper-proof certificates that boost transparency and trust. Process Mining can complement these efforts by providing detailed insights into how these blockchain systems are integrated into existing processes, ensuring seamless adoption and maximizing the efficiency of this transformative technology.

"The infiltration of counterfeit parts is escalating, posing significant challenges to transparency and compliance in the industry."

Aviation Partner, Deloitte Singapore



6. Summary

In the fast-paced aviation industry, particularly within maintenance, repair, and overhaul (MRO) operations, process mining emerges as a crucial technology for enhancing operational efficiency and reducing costs. This paper highlights the transformative potential of process mining, which can ultimately help minimize aircraft downtime, in tackling the complex challenges faced by MROs. By leveraging real-time data analytics and predictive-maintenance models, process mining enables organizations to uncover inefficiencies, optimize workflows, and even anticipate part-replacement needs for smoother operations.

AI and RPA can help by providing both a holistic view of operational dynamics and improved efficiency in MRO operations. The Deloitte approach integrates process mining into its consulting practice to combine technical expertise with deep industry knowledge for customized solutions that drive tangible business value.

As the aviation sector evolves, process mining and other digital tools will be key to navigating future challenges, including sustainability, regulatory integration, and the increasing complexity of global supply chains. This shift towards data-driven decision-making is set to further shape the future of MRO operations.

"Process mining is becoming indispensable in the aviation MRO sector. It offers unprecedented visibility into operational inefficiencies, enabling us to streamline complex workflows and drastically reduce turnaround times. In an industry where every minute counts, it's the key to overcoming the mounting challenges of maintenance, repair, and overhaul."

Airline Operations Partner, Deloitte Spain

Contacts

Tobias Koppe
Partner
Co-Sector Lead Transportation,
Hospitality & Services
tkoppe@deloitte.de

Carina Garbe
Director
Customer Strategy
Industrial Products & Construction
cgarbe@deloitte.de

Raphael M'Barek
Lead Process Analytics & Optimization
Transportation, Hospitality & Services
Technology Strategy & Transformation
rmbarek@deloitte.de

Adrian Doppler
Senior Consultant
Transportation, Hospitality & Services
Customer Strategy & Transformation
adoppler@deloitte.de

Jan Lutze
Senior Consultant
Transportation, Hospitality & Services
Technology Strategy & Transformation
jalutze@deloitte.de

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