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From Machines to Services: Building a Digital Backbone for OEM Service Excellence

Scalable, digital-first service execution across your installed base

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1 Executive Summary

In today's industrial landscape, Original Equipment Manufacturers (OEMs) face a pivotal transformation. The shift from product-centric to service-centric business models is no longer a distant trend; it is a reality. Still, it is a present-day imperative, driven by changing customer expectations, competitive pressures, and the promise of sustainable, high-margin growth. Yet, as OEMs strive to scale their service offerings, many encounter a fundamental barrier: fragmented data and disconnected processes that undermine the potential of digitalisation.

This whitepaper is written to address that challenge head-on. Drawing on leading industry research, peer-reviewed academic studies, and real-world case evidence, we examine why traditional IT stacks [enterprise resource management (ERP), customer relationship management (CRM), product lifecycle management (PLM), and field service management (FSM)] are inefficient to support advanced, digital-first services.

We introduce the concept of the enterprise asset management (EAM) software as the digital backbone that connects the entire service value chain, enabling OEMs to deliver integrated, outcome-based solutions at scale.

To unpack this argument, the remainder of the white paper is structured to follow the OEM service journey from emerging market drivers through to practical next steps:

- Market drivers and the case for digital-first services
- Why existing systems fall short
- Evidence in action: OEM case studies
- The installed base challenge: from as-built to as-maintained
- The EAMS digital backbone framework
- Conclusion and next steps

2 The new economics of OEM services: Why digital matters now

The economics of OEM services are undergoing rapid change. For decades, equipment sales dominated revenue streams, but that model is under pressure. BCG's 2025 benchmark study confirms that aftermarket services now grow faster than new equipment sales and deliver margins two to three times higher than capital equipment, typically 25–30% EBIT for services versus 10–12% for machines.

In fact, services already represent one-third or more of total income for many industrial manufacturers, with revenue growth of 10% in 2023 and a further 8% forecast for 2024 (BCG, 2025)[1].

The PMMI 2025 Aftermarket Parts & Service Report reinforces this trend:

- 94% of OEMs predict growth in aftermarket services over the next three years.
- 98% of end users expect their aftermarket budgets to expand or remain stable.

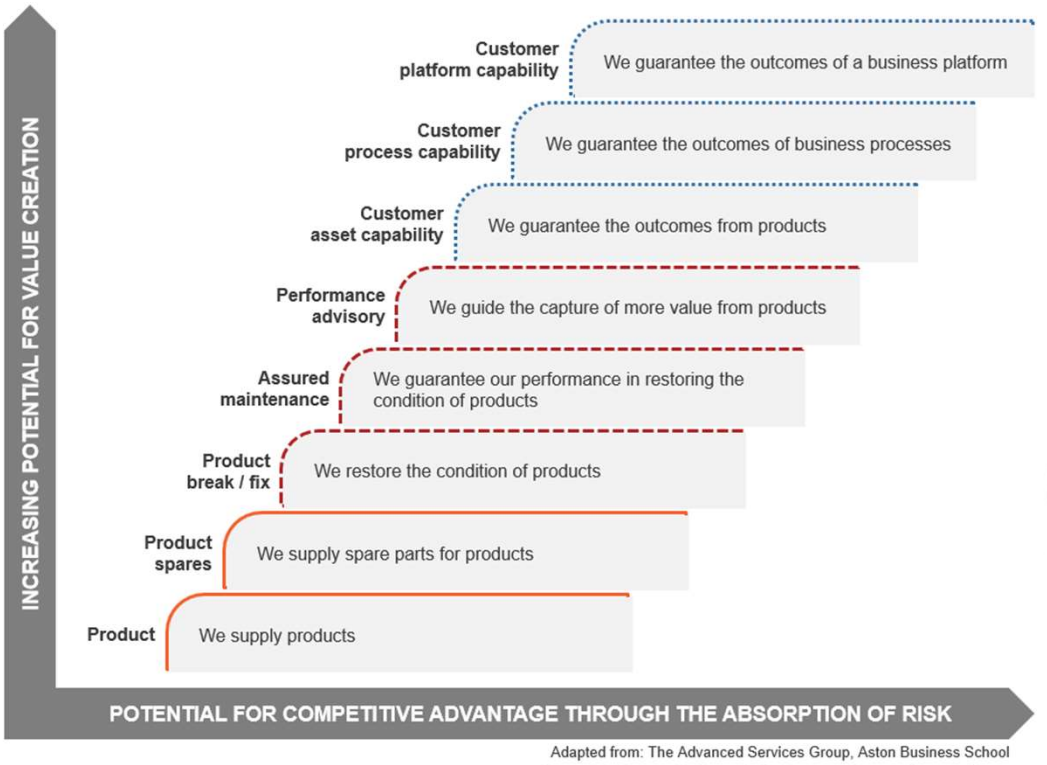
Remote services, predictive maintenance, and proactive obsolescence planning are now considered non-negotiable for competitiveness (PMMI, 2025)[2].

McKinsey's research highlights the digital-first adoption curve: a progression from self-help portals for basic services, to remote diagnostics, and ultimately to predictive, subscription-based offerings that guarantee uptime (McKinsey, 2024)[3].

This trajectory aligns with the Services Staircase proposed by the Advanced Services Group:

- **Base services:** Spare parts and break-fix repairs (ERP sufficient)
- **Intermediate services:** Maintenance contracts, remote monitoring (digital backbone required)
- **Advanced services:** Predictive maintenance, outcome-based contracts (full integration essential)

Executive services directors know that service revenues are now the engine of growth and margin. But scaling these services profitably requires more than intent; it demands new digital capabilities.



Adapted from: The Advanced Services Group, Aston Business School

Figure 1: Service Staircase™ by Advanced Services Group

Core insight: **Digitalisation is not optional; it is the foundation for profitable service growth. The following sections examine why current digital solutions fall short and introduce a framework for building the backbone that makes this transformation possible: an enterprise asset management software.**

3 From as-built to as-maintained: Closing the data gap

Managing the installed base, the complete record of assets in operation, is the cornerstone of any OEM service strategy. It is more than a list of machines; it is the data spine that connects service plans, work execution, and performance analytics. The transition from **as-built** (what was shipped and commissioned) to **as-maintained** (the real-world state after modifications, retrofits, and usage) is not just technical; it marks the shift from product-centric to service-centric business models.

Research consistently highlights this challenge:

- Inaccurate asset registers lead to cascading inefficiencies, from incorrect work orders to inflated inventory costs (Smith & Lee, 2023)[4].
- Predictive maintenance models fail when IoT (Internet of Things) signals cannot be mapped to the correct asset and BOM (Bills of Materials) position, making data integrity a prerequisite for digitalisation (Kumar & Patel, 2021)[5].
- Demand forecasting for slow-moving parts is unreliable without visibility of the installed base, driving "just-in-case" inventory strategies and locking up capital (Garcia et al., 2022)[6].

Services managers know the pain of fragmented data. Manual workarounds, slow quoting, and missed SLAs (service level agreements).

Accurate installed base data is the foundation for scaling digital services.

Organisations that maintain accurate, as-maintained records achieve measurable reductions in inventory holding costs and improve service-level compliance.

Bottom line: No accurate as-maintained installed base, no scalable digital services.

The next section will examine why current digital stacks fail to deliver this integrity and introduce an EAM software-centred backbone to close the gap.

4 The digital backbone: Connecting ERP, CRM and FSM

The need to manage the as-maintained installed base is clear. Yet, most OEMs face two structural hurdles:

1. Fragmented installed base information

Ala-Risku's research shows that asset truth is split between PLM or PDM (predictive maintenance) (as-built structures and engineering changes), ERP (materials, costs, inventory), and CRM (contracts, sites, entitlements), while service events live elsewhere; none of these systems delivers a unified, as-maintained view for day-to-day service decisions (Ala-Risku, 2009)[7].

Research on visibility-based service infusion reaches the same conclusion: without upstream, shared visibility into configuration and condition, providers cannot consistently or economically scale advanced offers (Holmström, Brax & Ala-Risku, 2010; 2011)[8].

2. Managing the end-to-end services process with separate tools

Quoting and contracting rely on an accurate configuration; planning needs standard, inheritable maintenance tasks; execution must convert alarms and conditions into governed work orders; and improvement depends on closing the feedback loop back into tactics.

Traditional stacks struggle to deliver this closed loop. Moving the "demand-visibility point" upstream - from work orders to asset condition - requires an integrating layer that turns signals into tasks and tasks into learning (Holmström, Brax & Ala-Risku, 2010; 2011)[8].

ICT managers are tasked with integrating new solutions without creating new silos. EAM software is not another software application. It is the backbone that connects and operationalises your existing stack.

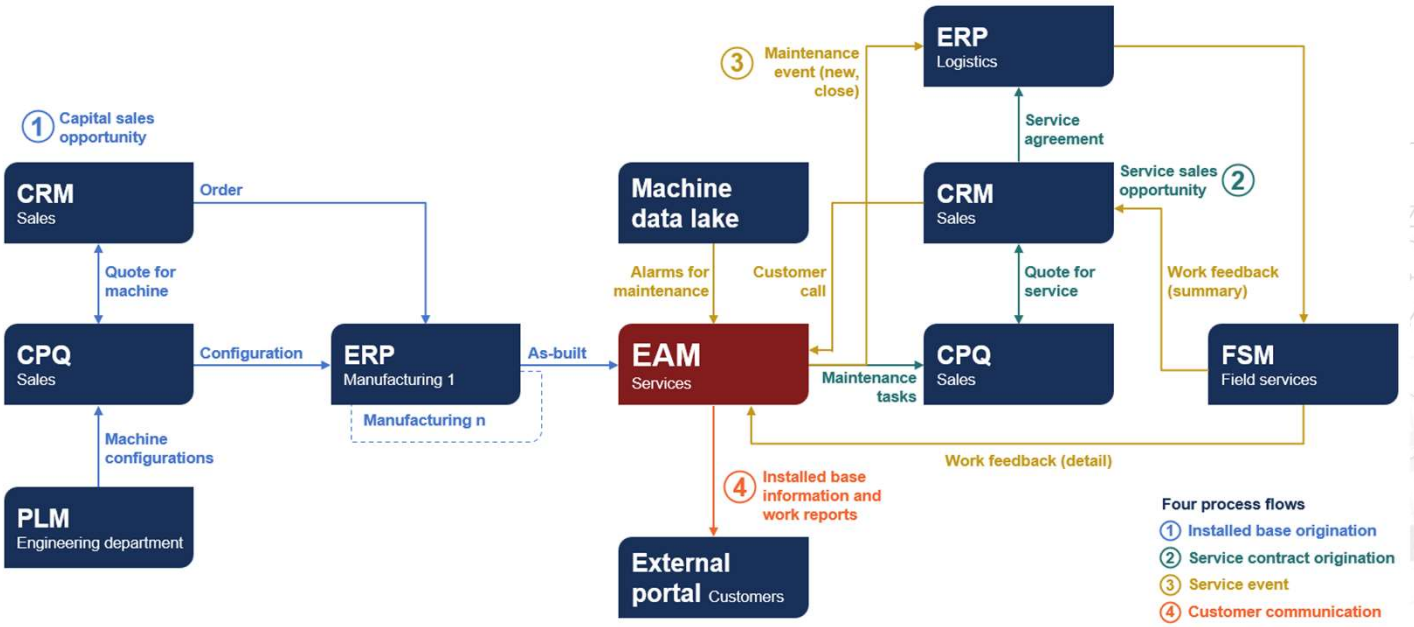


Figure 2: Suggested Application Landscape

4 The digital backbone: Connecting ERP, CRM and FSM

Figure 2 (Suggested Application Landscape) places the EAM software at the centre of the application landscape. The point is not "another system," but a backbone that connects PLM/PDM, ERP, CRM and FSM around the as maintained truth.

From PLM/PDM it inherits engineering structures; from ERP it synchronises materials and costs for planning; from CRM it links entitlements and contracts; from the machine data lake it ingests alarms/conditions and then it does what the others were never designed to do: govern maintenance strategies, maintain the installed base, and translate signals into standardised work (Ala Risku, 2009; Holmström, Brax and Ala Risku, 2010)[8].

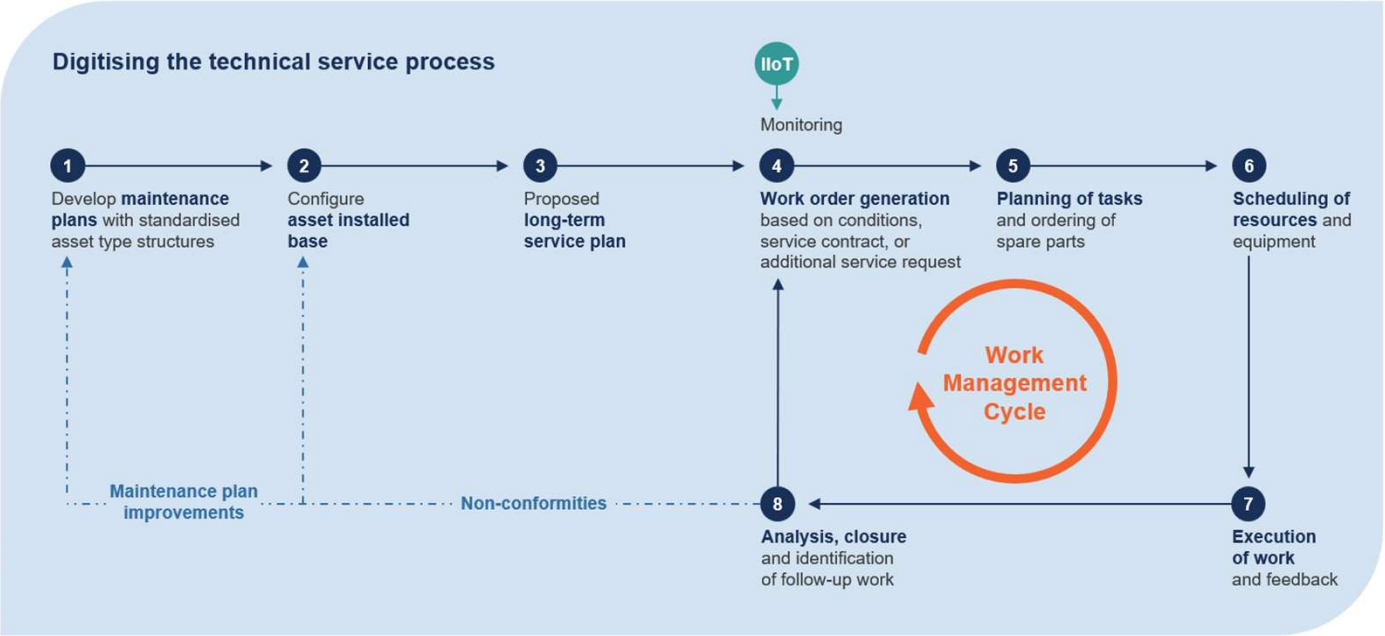


Figure 3: Service Process

Here, the backbone becomes visible in execution. Starting with design for maintainability, maintenance plan development and asset register (as maintained) control, the EAM software anchors service contract generation, work order creation, planning, scheduling, execution and feedback, and analysis.

This is the closed loop cited in the literature: upstream visibility to condition and configuration, conversion to managed tasks, and systematic learning back into tactics and BOMs (Holmström, Brax and Ala Risku, 2011[8]; Dekker et al., 2011[9]).

Practically, this is also where remote monitoring becomes service: thresholds and alarms map to the right asset/BOM position, generate the right task, reserve the right parts, and write back field feedback to improve plans across the whole installed base.

Why this matters: **The backbone does not replace your core systems; it connects and operationalises them around the installed base so you can (1) quote against reality, (2) execute consistently across regions and models, and (3) improve spares and tactics with every job.**

5 Evidence in action: How EAM software delivers the backbone

The installed base challenge is not theoretical; in practice, it impacts quoting speed, contract accuracy, and execution efficiency every day.

1. Use case | Accelerating service quoting, Meyn

Meyn needed to generate service contract quotes quickly, but asset data was fragmented: ERP held cost and material details, while maintenance tasks were managed manually.

By implementing On Key EAM software, Meyn connected ERP's cost data directly to standardised maintenance tasks within EAMS. This integration enabled CRM to pull accurate cost indications for service agreements without manual intervention. The result: quote preparation time dropped from days to hours, enabling faster response to customer requests and improving competitiveness.

2. Use case | Scaling maintenance execution, Global packaging OEM

A global packaging OEM faced complexity across thousands of assets, each requiring preventive and corrective tasks.

On Key provided a centralised maintenance plan library that was applied consistently across all asset types and automated work order generation. This eliminated regional variations and manual scheduling, reducing administrative overhead and improving compliance. IoT alarms were linked to the correct BOM positions, triggering governed tasks and ensuring that every intervention aligned with contractual obligations.

3. Use case | Managing non-OEM assets, Third-party equipment (3PE)

EAM software also supports third-party equipment, which is a requirement for advanced service models where OEMs guarantee process outcomes, not just machine uptime.

On Key incorporated non-OEM assets into the same governance framework, enabling planners to create tasks and work orders for all equipment in the production line.

Core insight: EAM software is not an "extra software platform"; it is the digital backbone that connects ERP, CRM, and FSM around the as-maintained truth.

It transforms fragmented data into actionable intelligence, accelerates quoting, and scales execution, even across assets the OEM did not deliver, making advanced services achievable and profitable.

6 Conclusion
Building the backbone for digital growth

The journey toward advanced OEM services is best understood through the lens of the servitization continuum (Oliva & Kallenberg, 2003)[10].

At one end, OEMs provide base services such as equipment supply and spare parts, where traditional ERP and transactional systems are generally sufficient. However, as organisations move along the continuum toward intermediate and advanced services, including maintenance contracts, remote monitoring, and outcome-based agreements, the requirements shift fundamentally.

These higher-value offerings demand not just transactional efficiency, but also integration, governance, and realtime visibility across the entire installed base, as well as the ability to manage complex service processes and customer outcomes.

Research and case evidence converge on one truth: fragmented data and is connected processes cannot support digital-first service delivery.

ERP, CRM, PLM, and FSM excel in their respective domains, but none orchestrates maintenance strategies, IoT signals, and service execution at scale.

That role belongs to an Enterprise Asset Management Software, which is the backbone that connects these silos, governs maintenance plans, and closes the loop from design to feedback.

Next steps

Benchmark your installed base
Is your as-maintained data accurate and actionable?

Assess your digital backbone
Are your ERP, CRM, PLM, and FSM software platforms connected around the installed base?

Evaluate your service capabilities
Can you quote, execute, and improve at scale?

Consider a readiness assessment
Identify gaps and opportunities for digital-first service growth.

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Core insight: **For OEMs, the question is not whether to digitise, but how to scale digital services profitably. the answer lies in building a backbone that transforms complexity into control and data into value. Those who act now will lead the market in delivering guaranteed outcomes, not just machines.**

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