

Whitepaper

From Ownership to Experience: How EaaS is Driving Innovation and Empowering Growth in Industrial Manufacturing

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Introduction

The expansion of services is increasingly becoming a vital factor in the success of product-centric businesses, contributing significantly to both revenue growth and profitability. Advancements in digital technologies such as IoT and data analytics coupled with AI/ ML based models are providing ample opportunities for organizations to create more value with their products and services. Customer expectations are also rising. Customers want to pay for what they use, without worrying about uptime and maintenance. They are also inclined towards business models that are more sustainable and environmentally friendly.

Purpose of the paper

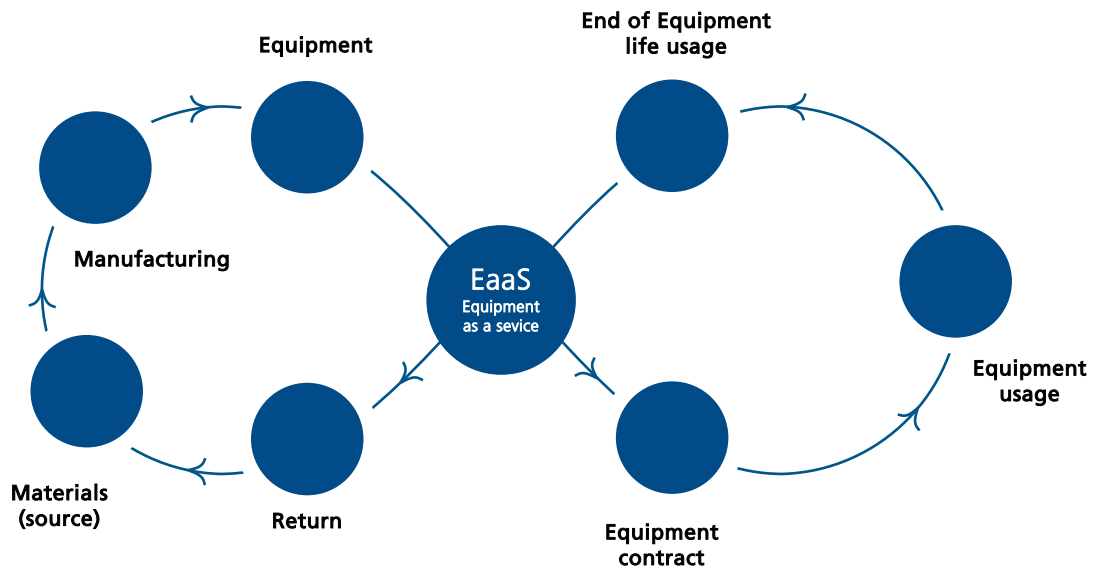
The authors of this paper investigate the potential of Equipment-as-a-Service (EaaS) to promote sustainable business growth in industrial manufacturing by transitioning from traditional capital-intensive equipment ownership models to flexible, subscription-based approaches. EaaS is one of the most potent examples of usage-based Business Model Innovation (BMI) in the field today. It enables companies and businesses to access the latest equipment and technology without making an upfront investment (CAPEX) and eases the burden of ongoing maintenance.

This paper provides an in-depth analysis of EaaS models and their implementation in the Industrial Manufacturing context. The authors substantiate the EaaS model by highlighting its benefits and enlisting organizations' requirements in all aspects in order to implement EaaS. The paper throws a glimpse into real-world examples of how some companies have successfully implemented EaaS in their business model. Furthermore, the paper proposes an EaaS readiness assessment framework through the author's point-of-view aimed at helping organizations kick-start their journey toward EaaS model adaptation/ implementation. It also includes a brief discussion of emerging trends and opportunities in the EaaS market.

Why EaaS and the industry perspective

Over the past few years, there has been an observed increase in Industrial Manufacturing companies expanding their offerings to include products, services and even complete business solutions to customer problems. According to a study conducted by the Business Innovation Observatory of the European Commission, 70% of machine manufacturers view services as a crucial factor in setting themselves apart from competitors. Those who have adopted service-oriented business models have experienced annual growth of 5-10%, with services accounting for half of their total revenue.

Figure 1: Illustration of Equipment-as-a-Service model



COVID-19 acted as a catalyst for the consumerization of buyer-provider relationships, helped accelerate change in all manner of doing business throughout 2020 and set the stage for time beyond. One of the outcomes was the ever-greater focus on digital delivery as well as a greater awareness of and focus on sustainability. This further escalated the adoption of pay-per-use solutions and primed the industry for more as-a-service-focused business models.

As per research, the three main determinants that bolster this industry trend to include the provision of services in predominantly product manufacturing business model are as follows:

a) Economic factors: By offering services related to their products, companies can generate additional revenue streams from their installed base of products, particularly when the products have long lifecycles and remain in use for extended periods of time. Additionally, it's worth noting that services generally offer higher profit margins than physical products, further highlighting the financial advantages of the EaaS model.

b) Demand conditions: As customers become more sophisticated, their expectations rise, and they demand solutions rather than mere products. Often, this is set in terms of the trend towards greater specialization and a move on the part of many companies to outsource services as they focus on core competencies.

c) Competitive advantage: Services are often more difficult to imitate and are a source of potential competitive advantage.

The as-a-service model is revolutionizing how technology is being adopted and consumed. This trend is called Everything-as-a-Service ("XaaS") and EaaS is amongst one of them.

In contrast to the classic equipment sale model, the equipment in the EaaS model is provisioned by the Industrial manufacturing company to the user against a payment (installation and commissioning fee). The manufacturer is responsible for providing maintenance, service, consumables, and spare parts after installation and commissioning. This means that the customer has a better guarantee of availability and output. The user saves on the high investment costs and can partly pass the operational risk to the manufacturing company.

“There are two reasons why we are at a pivotal point towards more flexible business models today:

- (1) Clients want to make their cash flow streams more predictable and resilient to crises and**
 - (2) The technology that connects machines and turns sensor data into maintenance insights has finally made X-as-a-Service model a more realistic option.”**
- Joseph Brunner, CEO relayr**

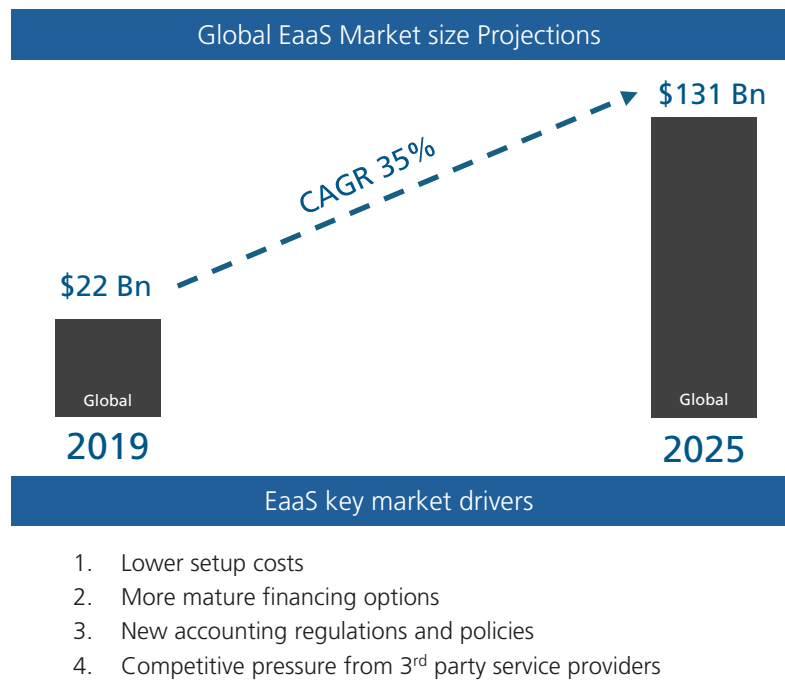
In return, the industrial manufacturing company factors in the risk as well as the added value for the user into its lump sum price. For example, monthly or as per the “pay-per-use model”, i.e., according to the number of units manufactured/consumed. Companies thus generate continuous revenues over the years and not just when the machine is sold. This leads to significantly more turnover and profit—a well-calculated business transaction.

Furthermore, the EaaS model also promotes customer loyalty as there is a continuous exchange between the provider and the consumer. This means that the Industrial Manufacturer is always working closely with their customer and can offer better solutions to meet their requirements.

The concept of selling equipment as a service, known as EaaS, dates back to 1962 when Rolls-Royce launched its “Power by the Hour” program, charging customers for the use of its Viper aircraft engines based on flight hours rather than a flat fee.

The global market for equipment as a service reached \$21.6B in 2019 according to IoT Analytics

Figure 2: Global EaaS market size projections

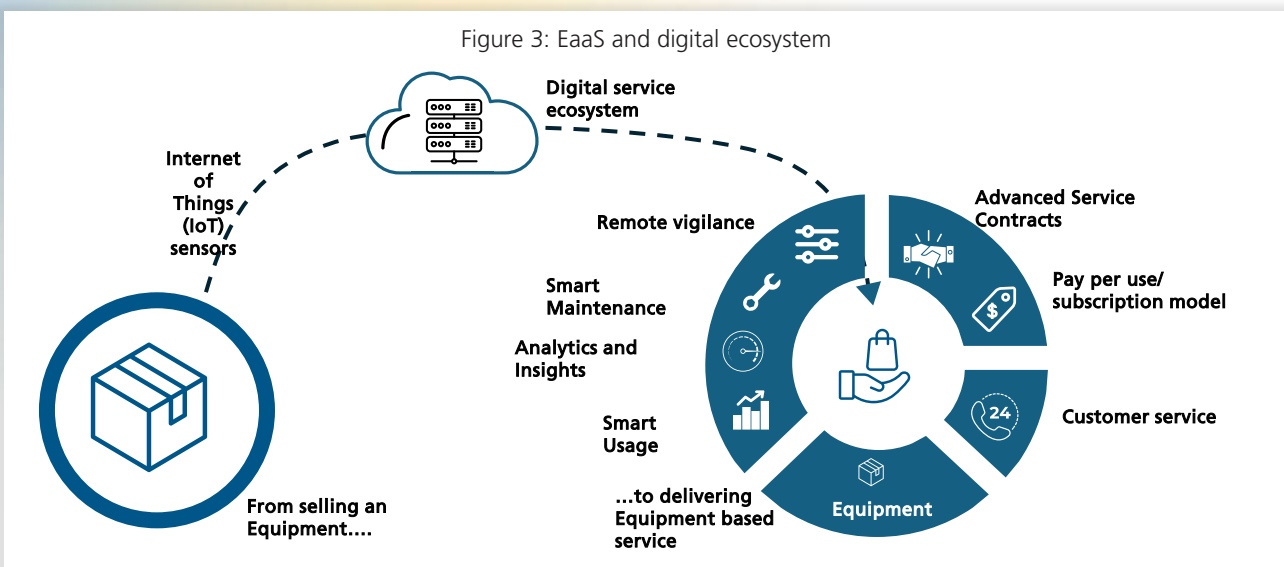


As per a 2022 Bain and Co. research report (Thinking Outside the Machine: Global Machinery & Equipment Report 2022), EaaS could translate into an 8x greater total shareholder return among machinery companies that combine hardware, software, and services compared to laggards.

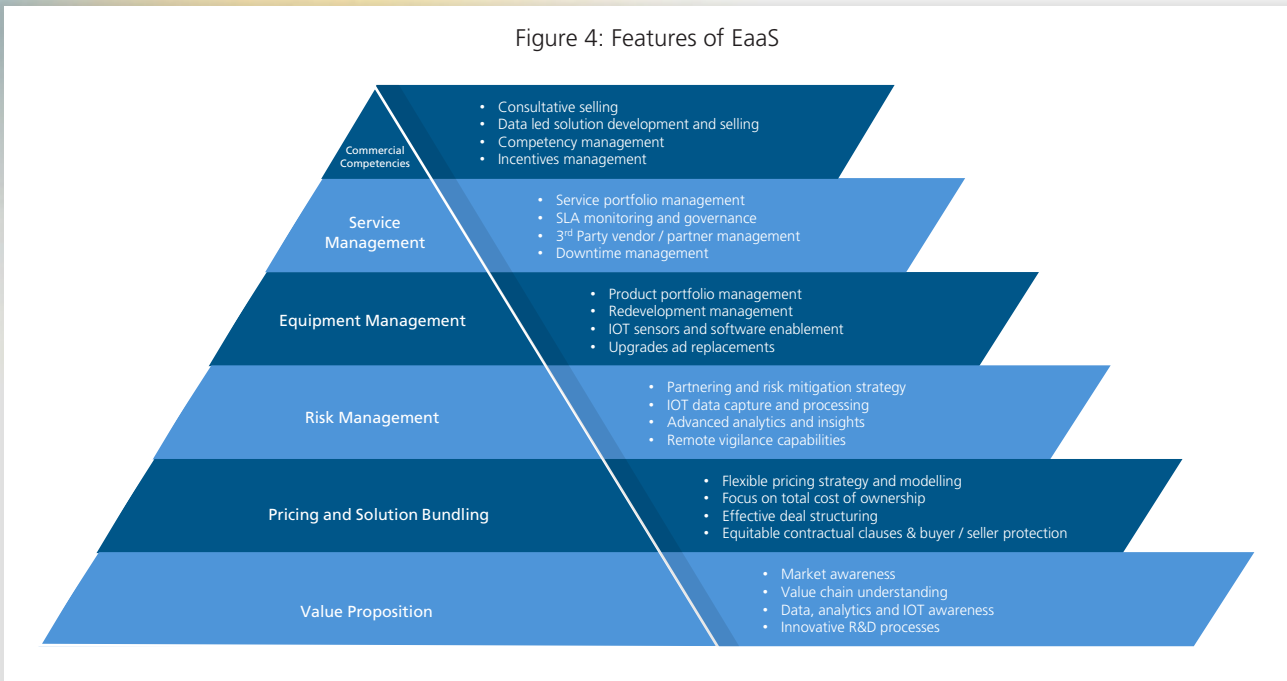
Key features

By shifting from traditional product sales to offering performance-based services through the Equipment-as-a-Service (EaaS) model, industrial companies can develop digital capabilities and establish themselves as indispensable partners in their customers' processes.

Figure 3: EaaS and digital ecosystem



The diagram below summarizes some of the key features of EaaS model across several dimensions of an innovative business model structure.



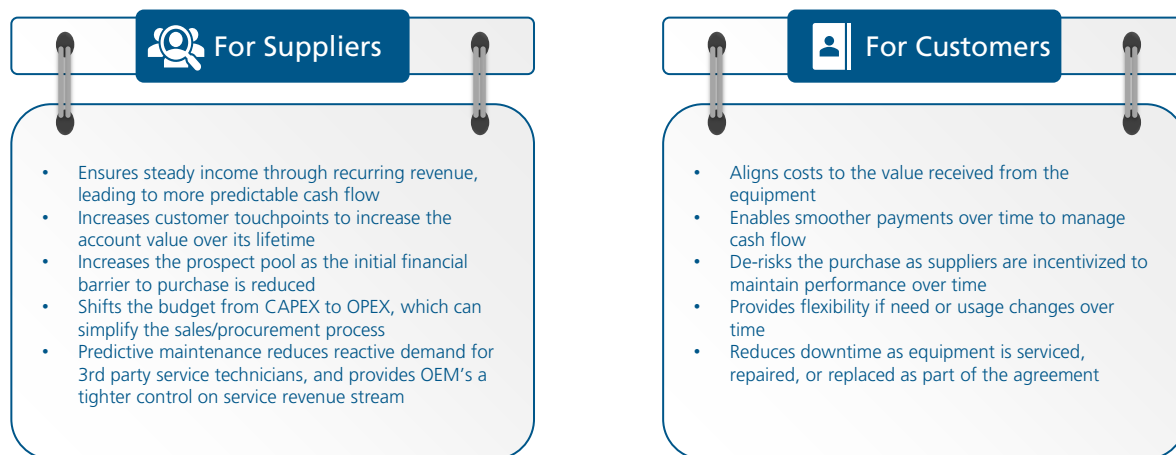
Different EaaS models

| Time-based model | Usage based model | Renting/ Sharing model | Outcome-based model |
|--|---|---|--|
| Customers are charged predefined, utilization-independent, monthly usage fees in exchange for the right to use the equipment and bundled-in service, as opposed to one-off lump sum payment. | Customers pay a monthly base fee (independent of equipment utilization) and a usage-based fee if their equipment utilization exceeds the amount covered in the base fee. Here too, the service is bundled into the model. | Customers rent required equipment on an on-demand basis via the channel of a renting platform. This includes a physical platform (where equipment is picked up to be used and stored when unused) and a digital platform (where equipment availability is checked and renting dates are blocked). | This model is based on financial or operational achievements. Providers' own success (revenues) is closely tied to the customers' success (equipment availability and efficiency). Monthly payments are linked to performance, for which equipment downtime due to damage is not paid. |

Business benefits

To survive in today's unpredictable economy, companies must be agile and resilient in order to adapt to fluctuations in the market and stay ahead of the competition. Many companies operate in markets with high exposure to a period of downturn. In a marketplace characterized by constant change and unpredictability, the capacity to swiftly adjust to evolving circumstances will be a critical factor in determining success. Organizations that can efficiently respond to shifting conditions will be poised to exploit new openings and gain a competitive advantage over their rivals. The adoption of Equipment-as-a-Service (EaaS) models can provide valuable advantages for both suppliers and customers as they navigate uncertain times.

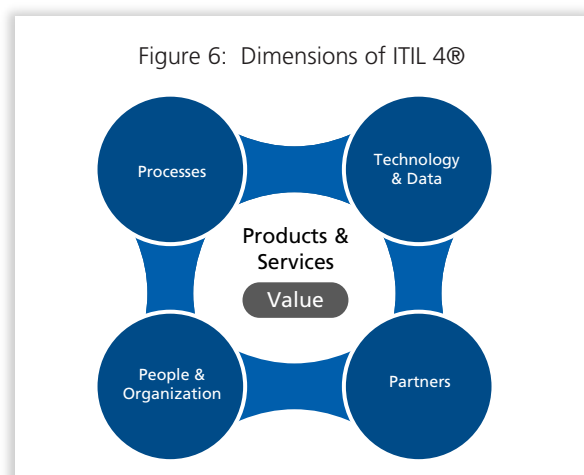
Figure 5: Benefits of EaaS



How can organizations implement EaaS?

EaaS is not just a new business model, but a transformation both for the OEMs and their customers. Let us have a look at the key requirements for OEMs to embark their EaaS journey using the four dimensions of ITIL 4®, that are essential to offer high quality products and services and delivering value to the customers.

Figure 6: Dimensions of ITIL 4®



Process

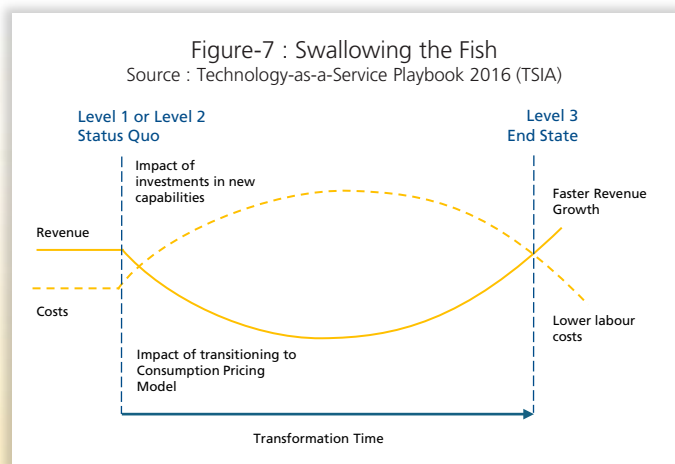
Finance

- **Pre-financing assets:**

With EaaS, the ownership of the product remains with the OEMs. The assets are in their balance sheet, so they have to pre-finance their products and change the payment model from up-front to pay-per-use.

- **Cash flow and Balance sheet impact:**

Remodeling your finances would impact your P&L statements, balance sheets, and revenue generation. With the adoption of subscription models, there is a revenue loss for a few years. The cost could be higher during this period because of investing in new capabilities. Assess the ROI in the long term by performing good market research and considering growth potential.



Sales & Marketing

- **Pricing:**

Set appropriate price points for service components of your offering, considering all servicing costs over the total lifetime of the offering.

- Perform good market research among existing as well as new customer segments.
- Offer different packaged offerings and options that are optimal for OEMs and value-added for businesses.

- **Sales:**

- With EaaS, the sales cycle does not end with the sale of the product. The sales process needs to be adapted to include after-sales follow-ups.
- Sales personnel need to develop more collaborative relationships with the customers for various reasons such as contract management, up-selling and cross-selling of service bundles, or simply relationship management.

- **Marketing:**

With the new offerings that include services, go-to-market plans, and the positioning of the offerings to the target audience needs to be re-defined. This may require a change from media strategy to content creation and publishing. Clear service offerings must be defined with the highlighted value proposition and communicated to target customers.

Supply Chain & Operations

- **Reverse logistics:**

A process needs to be defined for a rental asset's end of life — repurposing, recycling, disposing, or selling. Additional capacity and resources for reverse logistics need to be considered.

- **Channels:**

Different paths and channels need to be defined based on the revenue model (lease, subscription, owned, hybrid, etc.)

Technology & data

Manufacturing & PLM

- **Product re-design with IoT:**

IoT and sensors are among the key requirements for EaaS. Product design and manufacturing systems should be integrated to achieve this (e.g., PLM-ERP integration). The IoT solution should enable the equipment to automatically share asset performance data and provide transparency on asset usage. This is especially essential for pay-per-use billing.

Digital tools and solutions

- **Digital tools & connected machines:**

Connected installed bases are essential not only to provide performance data but also to enable remote connection to customers' machines for the service specialists to resolve the issues online, thus reducing costs and decreasing the equipment downtime. Digital tools and portals should also extend to field services and spare parts. A stable architecture is needed to support big data and analytics needs.

- **Machine learning and cloud solutions:**

Machine learning-based solutions are essential for several offerings such as predictive maintenance, asset analytics, anomaly detection and alerting, estimation of consumables, etc.

People & organization

Customer service

With EaaS, customer service is not merely technical support but an ongoing support partner for the customer to monitor, diagnose and maintain the equipment, perform data analysis, and help in performance improvement of the equipment with analytics insights.

Cross-functional collaboration and change management

With EaaS, the OEMs sell experiences and solutions to customers, not just products. This requires increased collaboration between the service business, new equipment manufacturing and product design teams. A mindset change is required from the executive team to the frontline customer-facing employees. To make the transition seamless, we advise hiring a change manager or organization-wide change management team to prepare and train all the teams for the new business model.

Partners and suppliers

Apart from the equipment manufacturers and the equipment users (customers), an ecosystem of players/partners that enables the implementation and success of EaaS model.

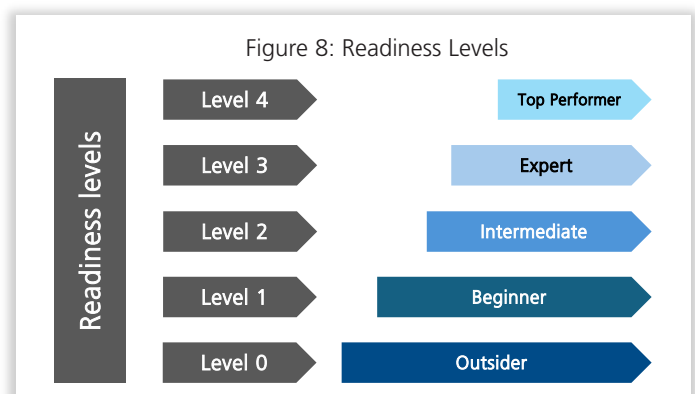
| IIoT providers | Software service providers | Banks and financial service providers |
|--|--|---|
| To provide the IIoT infrastructure for the machinery | For asset analytics, predictive maintenance, billing, contract management and security solutions | To provide the required capabilities for subscription and leasing models, for insurance and for financing and risk management |

Readiness assessment for EaaS adoption: our PoV

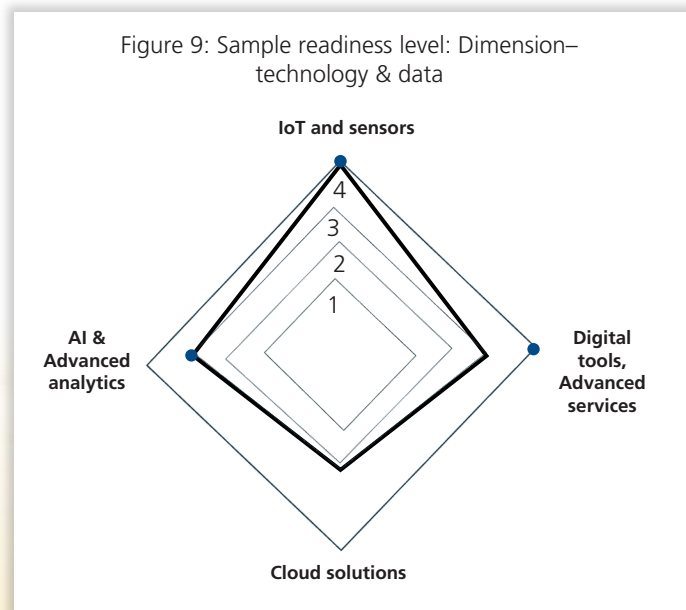
How ready is your business for EaaS?

We have prepared a self-assessment model that gives the business the ability to discover their readiness and areas of improvement to adopt EaaS and succeed with it:

- Determine the readiness dimensions and sub-dimensions critical for your business, based on the 4 pillars of ITIL 4®: Process, People & Organization, Technology & Data and Partners
- Use the following maturity model to measure your organization’s current state in each sub-dimension based on the maturity model as described in Figure 8.



- Assess the organization’s level in the maturity model for each sub-dimension. The following methods can be used:
 - Identify the impacted personas—executives, representatives from different functions, customers, and vendors.
 - Interview key personas
 - Administer survey questionnaires to assess readiness in the respective dimension/sub-dimensions.
- Identify focus areas of improvement and prepare short-term and long-term strategies.
- Set milestones and prepare an implementation plan.



Our POV: The journey to EaaS can be long and hard. Therefore, we recommend a phase-wise adoption starting with short term goals such as technology and data readiness, moving towards organizational change with a service mindset, and finally new business model adoption.

EaaS in practice

Even though a tiny fraction of the worldwide equipment market is sold “as-a-service” today, the market CAGR of around 50% demonstrates that the adoption is accelerating.

Some of the OEM leaders in the EaaS adoption include global printing machinery manufacturers, Heidelberg Druckmaschinen AG (Printing as a Service), compressors manufacturer Kaeser Compressors (Compressed air as a Service), tunnel drilling machinery manufacturer, Atlas Copco along with EPOS (Tunnel drilling as a Service) and a power tool manufacturer, Hilti (fleet management as a service).

China is a testament to this rapidly evolving market in EaaS and advanced digital services. Large OEMs and digital start-ups in China started their journey a decade ago.

- Heavy equipment manufacturers like XCMG have developed their own digital platforms to offer cutting-edge services, including machine diagnostics, operating time analytics, equipment usage statistics, and interconnected production facilities.

- Agile Chinese start-ups sell low-cost equipment service solutions on cloud-based platforms. One example is the cloud service Machine Commander, offered by the Chinese start-up Zeaho. It provides real-time monitoring of construction sites to improve equipment efficiency. Another example is value-added service in fleet and facility management. It harnesses AI and ML for routing and job scheduling of field force teams, thus improving efficiency drastically.

Future outlook and conclusion

The evolution of EaaS in Industrial manufacturing heralds a transformative future in the sector. EaaS is a paradigm shift capitalizing on emerging innovations, service mindset, and sustainability goals. The integration of IoT, AI, and data analytics is already revolutionizing equipment management. According to Bain, by 2030, companies will sell most equipment as part of bundled solutions, including services based on connectivity and enhanced data. Collaborative ecosystems are starting to unite manufacturers, service providers, tech innovators, and customers. This collaboration will amplify EaaS's impact.

EaaS has emerged as a powerful catalyst for innovation and growth in Industrial manufacturing. In this paper, we have explored its ability and benefits, the dimensions that need to be considered for businesses to be EaaS-ready, and the different models they can adopt. Our call to action is clear: Embrace EaaS as a strategic imperative. Embracing the principles of EaaS will position forward-thinking organizations at the forefront of progress.

At LTIMindtree, we are well-equipped to drive successful business model transformations. With our expertise in Strategic Advisory, Technology and Data Consulting, AI and Automation, ESG, and Organizational Change and Transformation, we can help organizations achieve their desired benefits and optimize their businesses. Our focus on effective communication, training, and stakeholder engagement ensures a smooth and successful transition toward a truly transformed future, faster. Together!

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Lavina Malani is a seasoned consultant with over 14 years of experience, driving synergy between business, processes, and technology. She has worked with a wide range of organizations across Manufacturing, Consumer products, Retail and Travel & Hospitality, across multiple roles - business and domain consulting, product ownership, process consulting and digital transformation. Her areas of expertise include digital commerce (B2B, B2C, marketplace, quick commerce), product data and marketing content management and customer journey development.



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Tushar Sehjpal possesses close to a decade of experience primarily in digital business consulting, business analysis, application development and maintenance roles for clients spread across industries like Manufacturing, Retail, CPG, Digital Agriculture, Life Sciences. Currently, he is part of the LTIMindtree Consulting Group supporting the Customer Experience cohort. At LTIMindtree, he works alongside a team of Enterprise Architects, UX Designers, Tech & Change Management domain experts, helping organizations navigate and thrive in today's rapidly evolving technological landscape.

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