RWS

Content-as-a-Service for Industry 4.0

Servitization of products and content

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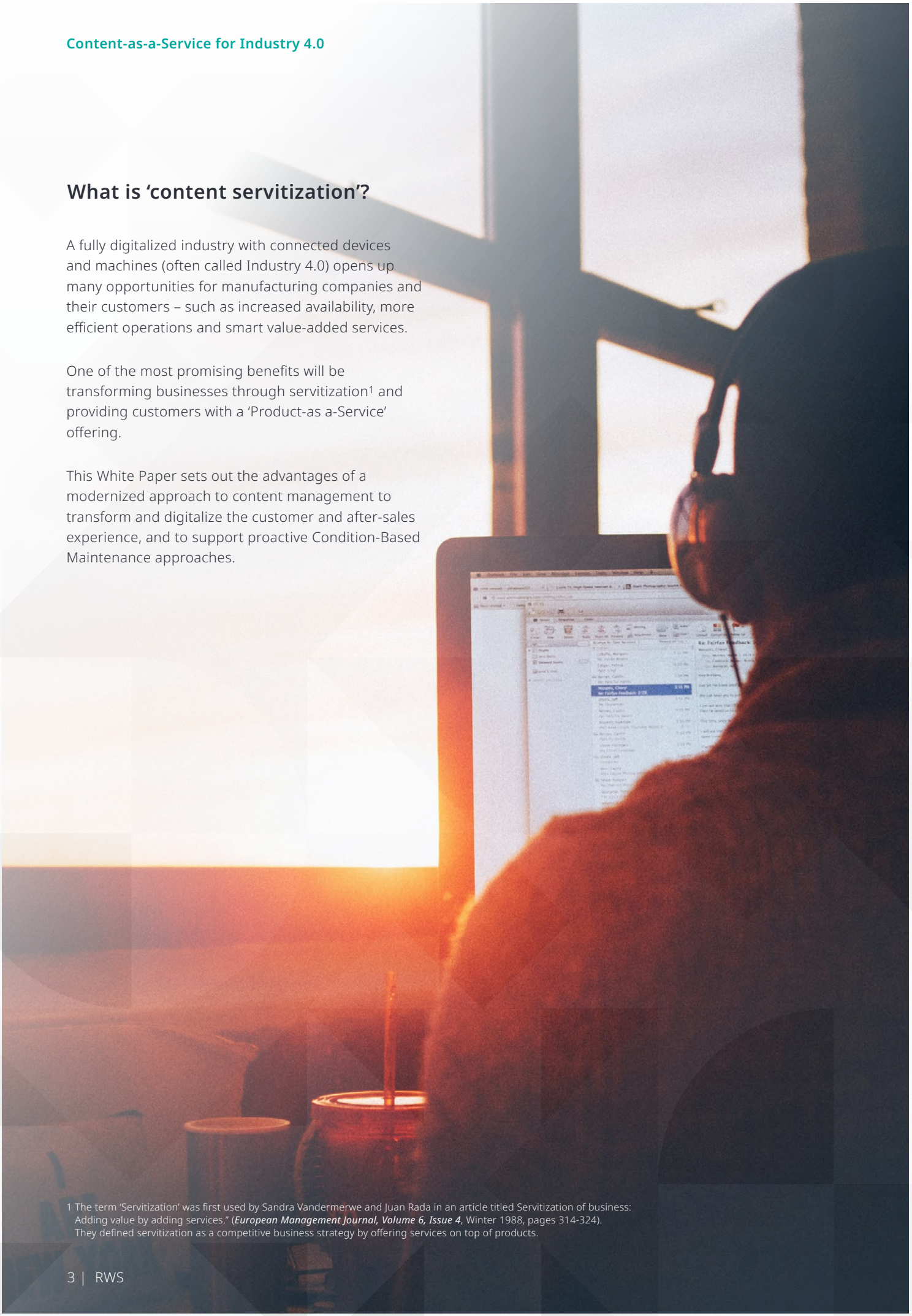
Contents

What is ‘content servitization’?

A fully digitalized industry with connected devices and machines (often called Industry 4.0) opens up many opportunities for manufacturing companies and their customers – such as increased availability, more efficient operations and smart value-added services.

One of the most promising benefits will be transforming businesses through servitization[1] and providing customers with a ‘Product-as a-Service’ offering.

This White Paper sets out the advantages of a modernized approach to content management to transform and digitalize the customer and after-sales experience, and to support proactive Condition-Based Maintenance approaches.



1 The term ‘Servitization’ was first used by Sandra Vandermerwe and Juan Rada in an article titled Servitization of business: Adding value by adding services.” (***European Management Journal, Volume 6, Issue 4***, Winter 1988, pages 314-324). They defined servitization as a competitive business strategy by offering services on top of products.

Executive summary

Many manufacturing companies and their ecosystems are gradually shifting their focus from solely sales of products towards a product offering with an operational lifecycle and additional services – Product-as-a-Service (PaaS).

Fig. 1: From making products to delivering services

Although the shift from 'making products' to 'delivering services' began several decades ago, as technology advances and the level of service that can be provided improves, more and more companies are recognizing the benefits of being more service orientated and making the change.

The shift has largely been gradual due to the considerable changes needed to transform a business from a product manufacturer to an integrated solution provider.

Because the Internet of Things (IoT) enables and enhances this change, this process is commonly described as digitalization, but from a business perspective, it is perhaps more accurately referred to as servitization.

Servitization enables manufacturers to better manage the lifecycle of their product, and optimize or shorten it in terms of value, durability and efficiency for the customer. It is similar to leasing concepts, but with servitization you also manage processes like uptime, performance, quality, maintenance/service, and manage the asset during the product's intended lifecycle. [2, 3]

In this White Paper we set out a holistic vision of servitization and the solution architecture needed to achieve it. We look at what the implications of the shift to Product-as-a-Service are in terms of content production and how AI-powered[5] intelligent content helps make meeting the increased demand and sophisticated service needs possible.

2 Servitization Frontrunners, Scheper.Co; scheper.co/wp-content/uploads/2020/07/Servitization-news-item-2020.pdf

3 NIBC Whitepaper Servitization, February 2018, PA Consulting Group, Praetimus; paconsulting.com/insights/2017/servitization/

What is servitization?

There was a time, not so long ago, when products were just products.

However, as technology has advanced and products have become ever more sophisticated and digitally connected, expectations around customer service for products and after-sales support have soared. And as the Internet of Things increasingly becomes a day-to-day reality, these expectations will only grow.

If technological change and rising customer expectations weren't enough to contend with, many manufacturers face market saturation and limited growth prospects. And with technology constantly evolving, products that can take years to develop may quickly become outdated and redundant, threatening the company's return on investment. In addition, customers are becoming increasingly wary of investing heavily in products that have a shorter and shorter lifespan.

The challenges are certainly daunting but some manufacturers have found a way through them that embraces the relentless technological changes and gives them a more profitable and sustainable business model.

A 'Product-as-a-Service' business model requires fundamental changes to how you operate and how you structure your 'production'. It moves away from the idea that 'we make products' to 'we deliver services'. Pioneered by Rolls-Royce in the 1960s, with its 'Power-by-the-hour' Viper engine, [4] it moves beyond the purchase of the physical product to include after-sales service and maintenance. Customers no longer make a one-off purchase and hope for the best with the product's performance – they are purchasing help and high performance for the lifetime of the product.

'Servitization' helps extend the operational lifecycle of products and introduces additional services that can be offered throughout the lifetime of the product to add value for the customer – such as Predictive Maintenance (PdM). The product lifecycle can be managed to optimize or shorten it, in terms of value, durability and efficiency. Uptime, performance, quality and maintenance can all be monitored and acted on quicker – and before repair issues emerge.

Obviously this requires a much closer and ongoing relationship with the customer – one where trust matters. They have to trust that you are delivering superior performance for them – that your 'product' is more efficient, performs optimally, and that you're committed to a long-term relationship with them.

Rolls-Royce pioneer the way

Originally Rolls-Royce would just sell their engines and parts for aircrafts to customers. They noticed that on average their engines would last for 20 years but needed an overhaul every 5 years. Within these periods many service and maintenance intervals were necessary.

In the 1960s Rolls-Royce decided to move to selling their Viper engines by the hour (power-by-the-hour). This shift to product-as-a-service started within a specific group of business aircraft, but is now used more widely across the business – services now account for 49% of their total turnover. [4]

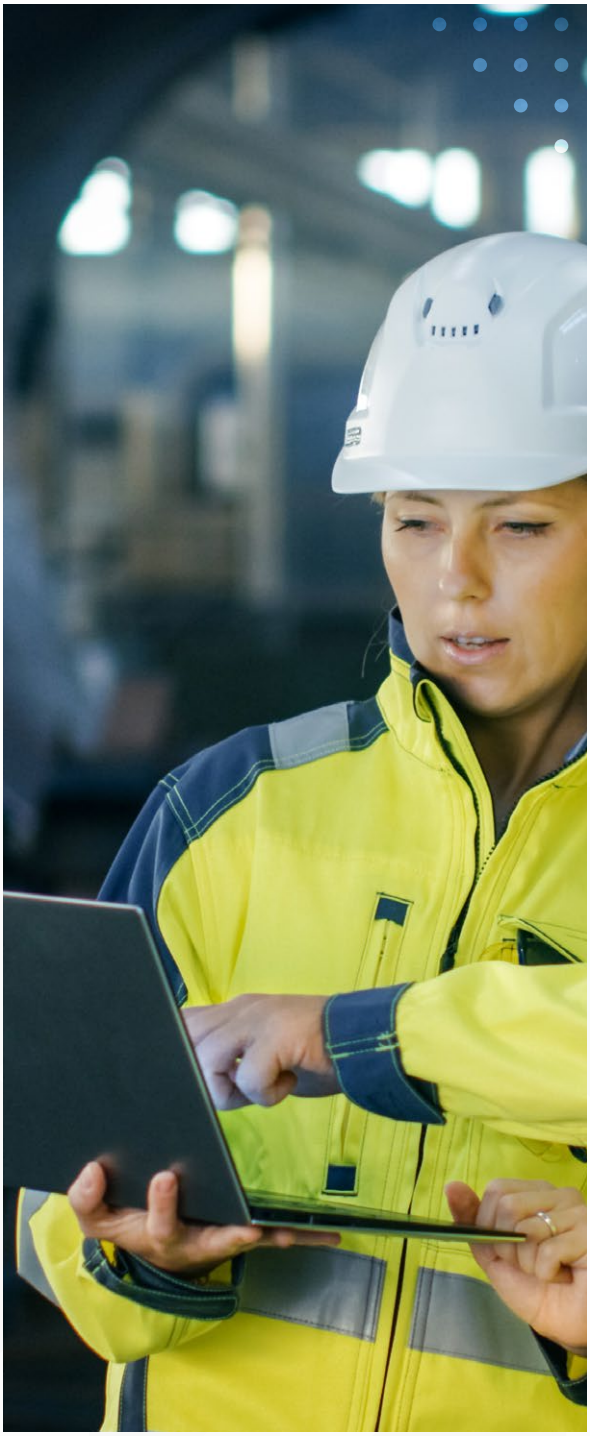
[4] Rolls-Royce
en.wikipedia.org/wiki/Aircraft_maintenance#Power-by-the-Hour

Why does it matter?

The 'Product-as-a-Service' model can be a game-changer. If you do it right, not only will you gain a competitive advantage over your rivals, you will also be rewarded with customer loyalty and a more sustainable customer base.

Servitization not only benefits customers with improved performance and reliability – it also boosts company profits and increases market value. The average EBIT profitability (operating profit after depreciation) of services is in many companies 2-5 times higher than just product sales, and a long-lasting US research study shows that stock-listed companies that have adopted servitization have a higher market value.

The business model for product-as-a-service has been around for some time now and 75% of manufacturing companies expect that servitization will dominate their future. Given this, it is surprising that less than 30% of manufacturing companies have a servitization strategy in place. [5, 6, 7, 8]



5 ServitizationBlue, Scheper.Co; scheper.co/labelblue/servitization/

6 Servitization Frontrunners, Scheper.Co; scheper.co/wp-content/uploads/2020/07/Servitization-news-item-2020.pdf

7 Analytics-as-a-Service Blue, for Servitization, Scheper.Co; scheper.co/labelblue/analytics-as-a-service/

8 CMMS FiiX 20 benefits of a CMMS (corrective to predictive) fiixsoftware.com/blog/15-benefits-of-a-cmms/

Why isn't everyone doing it?

The most obvious reason is that it is far from easy and making the changes to your business model, your organization, and the way you operate takes time – you can't run before you've learnt to walk.

Content has a critical role to play in the customer experience and the shift to Products-as-a-Service, but many organizations face significant challenges before they are able to deliver the digital-first strategy that is needed.

Many content teams remain rooted in the world of print. Content production processes and workflows that have worked very effectively for print over the decades are struggling to meet the new demands of a digital world. And as the volume of all forms of content that are needed rises, this approach is increasingly becoming unviable.

For many companies, content production is still product-centric, and more often than not, siloed by individual products or product areas – usually with their own processes, systems and ways of doing things.

Content production has understandably mainly been driven by the aim to create, manage, translate and publish content as easily and cheaply as possible. The primary goal is cost reduction rather than the added value approach that is needed if companies are to make the most of the opportunities servitization creates.

In many organizations, the content architecture just isn't set up for content delivery in the digital age and is simply unable to cope with increasing volumes of content, to multiple formats, in many languages, quickly and consistently.

So how do companies overcome these challenges and evolve their content production to meet the needs of a Products-as-a-Service company?

Outdated architecture for a digital world

- Increasing difficulty in coping with the growing volume of content
- Struggling to meet the content demands for multiple formats efficiently
- Translating content into multiple languages is laborious
- Achieving consistency across all channels and updating content is a painful process
- No feedback or content interaction between field and after-sales management
- Hard for service technicians to find the detailed information they need quickly in large paper-based or PDF manuals that they have to flip through

The way ahead

For content production to be fit-for-purpose for delivering Products-as-a-Service in a digital age, there are two key issues that need to be tackled.

Intelligent content

Intelligent content draws on snippets and components rather than the pages or entire documents seen in traditional content management systems.

Using it in conjunction with meta data and better taxonomy management allows automation throughout the content supply chain.

Servitization of content

For connected products that are monitored and have software updates, a Content-as-a-Service (CaaS) approach that supports data-driven dynamic delivery, targeted for the relevant channels, audiences and use-cases, is essential.

This needs to be done, not just with broad taxonomies and tagging for customer-centricity and use-case targeting, but also with content-interaction services that monitor product conditions to trigger and track maintenance and repair activities.

Intelligent content

Improving the customer experience

A company that is being built upon a Product-as-a-Service business model has to deliver a great customer experience – and technology has an increasingly important role to play in providing it.

Personalization remains an important application of Artificial Intelligence (AI) and with fast-maturing technology, it can be realized with even higher granularity. To see how hyper-personalization[9] helps with higher revenue, we only need to look at brands like Amazon, Starbucks and Spotify. They have begun using predictive personalization, where AI and machine learning power their individual recommendation engines.

However, improving customer engagements based on the predictive power of data is just one element of the opportunity AI opens up.

When AI becomes an essential component of every process, it enables far greater automation, which can lead to growth that goes far beyond just the customer-facing aspects of a business.

Artificial Intelligence (AI)

The incredible potential of AI comes with countless expectations of its ability to revolutionize productivity, performance and profits. Through all the hype around AI, it is important to remember that it is not just one technology, but is in fact a set of technologies that organizations can mix and match in various ways to learn, understand and act.

These technologies can either augment or perform human tasks better and can improve skills and performance over time through continuous learning. A core characteristic of AI is the ability to learn, adapt and improve. Through this method, growth can be powered continuously and incrementally.

AI means providing solutions for machine and deep learning, computer vision, natural language processing, visualization, forecasting and optimization.

The promise of AI for enterprises lies in operational efficiencies for employees as well as driving top-line revenues through highly relevant, personalized experiences that drive customer loyalty and lifetime value (LTV).

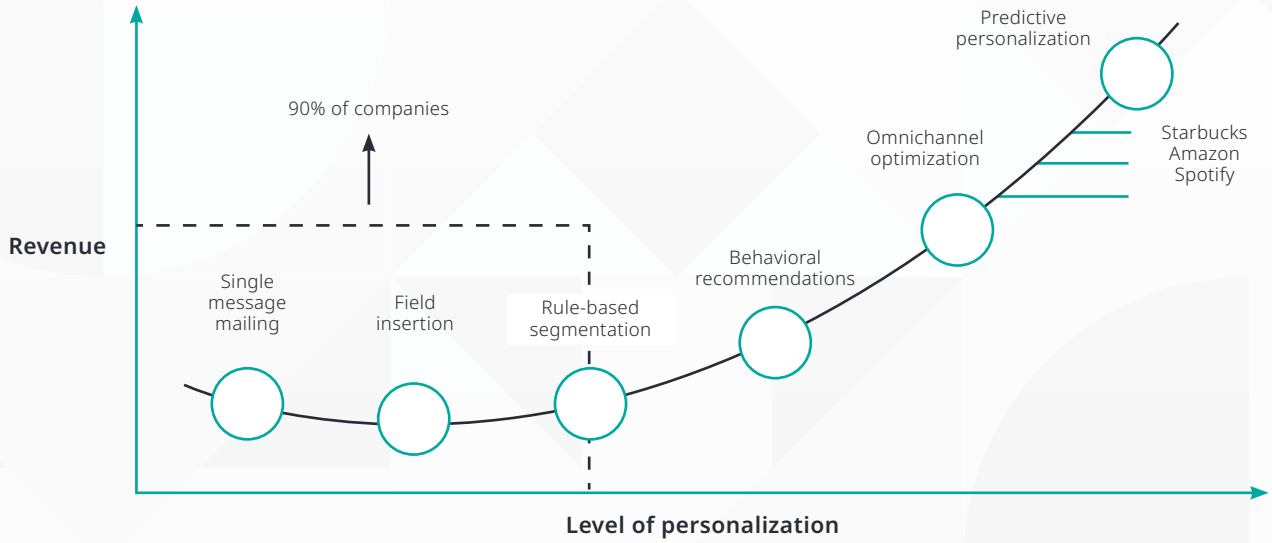


Fig. 2: Contextualization and Revenue Relation

[9] Hyper-personalization; instapage.com/blog/hyper-personalization

Every individual today is looking for answers and they want them now, regardless of their role.

To achieve this, the solutions and services offered by organizations have to embody the following traits:

Immediacy – enables experience and discovery of information on demand each time and every time without fail.

Hyper-personalized – utilizes behavioral and real-time data to create highly contextual experiences that are relevant to the user/machine.

Interpretation – establishes relationships between information sets to discover meanings and insights to fuel innovative digital services.

Accessibility – creates ways to access information beyond a single format and delivery channel.

Findability – makes it possible to find precise and exact information at a click (or voice command) which is timely and relevant.

All the above can be facilitated by content that can be unambiguously read by machines and humans alike. In other words, 'intelligent content'.

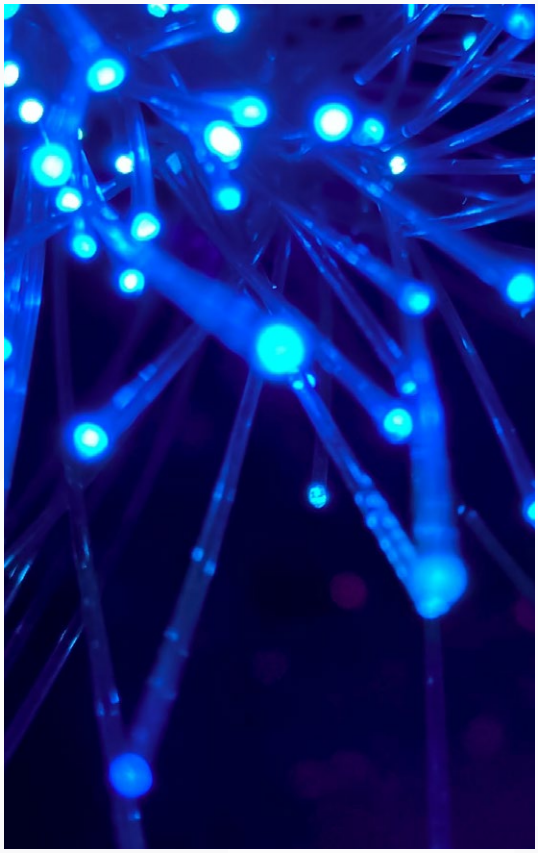
What is intelligent content?

Intelligent content forms the information fabric of an organization that wants to digitally transform itself.

Intelligent content is content that is treated as a valuable business asset. It is modular, written and stored in small chunks (or topics). These modular chunks can be reused in a variety of outputs and each chunk is its own 'single source of truth' – thus making it easy to write, reuse and update.

Intelligent content is also semantically rich. This means that it is tagged with information that makes it easy to find.

Finally, intelligent content is separate from output format. This allows you to use the same content in a variety of contexts, displayed on a variety of devices, while still maintaining the single source of truth.



All together now

Intelligent content creation should be an organization-wide initiative. Breaking the departmental silos to unify content across the organization is necessary for any digital transformation initiative to succeed.

Unified intelligent content across the organization has several benefits:

Cost savings with content reuse

Information governance with access rights and tracking changes

Adaptive delivery of information to any digital channel

Discovering insights usually hidden away due to departmental silos

An important source for all service and maintenance interactions

In other words, intelligent content shines when it is centralized across the organization without the barriers of departments.

To successfully embed AI throughout an organization and properly enjoy its benefits, organizations must have a unified technology base for their information management.

The role of information architecture is to provide a framework for content creators to be able to easily write the required information so that it can be leveraged by AI, as well as traditional delivery systems.

AI underpins intelligent content

As we saw earlier, AI is rapidly becoming an object of desire across organizations – even being held up by some as the solution to all our problems. However, the technology is still at a nascent stage, and as with anything nascent, myths around it abound.

Organizations believe AI can be implemented irrespective of the way they work with content – which is both correct and incorrect at the same time.

Today, machines can use AI-enabled deep learning to:

Translate content into any language (machine translation).

Break down human speech and written language against human-constructed taxonomies to identify the sentiment, intent and subject of a phrase (natural language processing).

Construct new content from data and human supplied strings and templates to approximate human authoring (natural language generation).

The use of these semantic technologies increases content intelligence and enables organizations to take the next step towards a highly relevant customer and after-sales experience.

Knowledge graphs reveal knowledge relationships

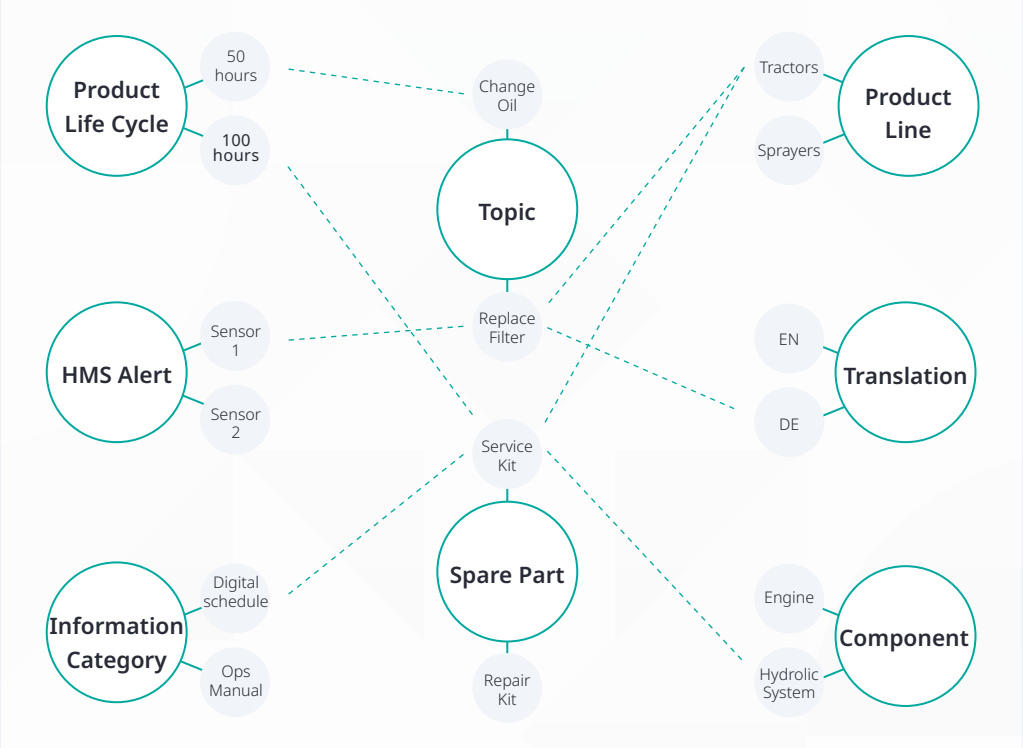


Fig. 3: Knowledge graphs can connect data and content across RWS and 3rd party applications, providing deep visual feedback on knowledge relationships

AI can drive improvements in the customer experience by providing deeper metrics, tracking, feedback and measurement – giving the organization superior methods to measure and improve content utilization. For example, new semantic AI technology can collect metrics, with the ability to highlight specific content for author/review cycles to improve the user experience.

All of this helps to significantly improve the after-sales experience. After-sales requires intelligent content to meet customers, operators and service technician's needs, and as the IoT becomes commonplace, content for guided diagnostics too.

AI can leverage this content – but it can't replace it. For example, even if AI can identify a product issue, it is unable to help the user unless it can provide the right information to address the issue.

AI gives you intelligent content and can help drive significant improvements in the customer and after-sales experience, but it can't do everything by itself – it relies on having the right information architecture and technology in place to orchestrate all this data and content.

Servitization of content

As manufacturers move away from producing products to delivering services, far greater attention needs to be paid to service features and after-sales services. This is where considerable value can be added, but managing all the content, data and information demands to deliver a great service isn't easy.

As the world becomes increasingly connected and digital, the opportunities to improve products and their performance have ballooned, as we can see in Figure 4 below.

How the Internet of Things can enhance the service experience

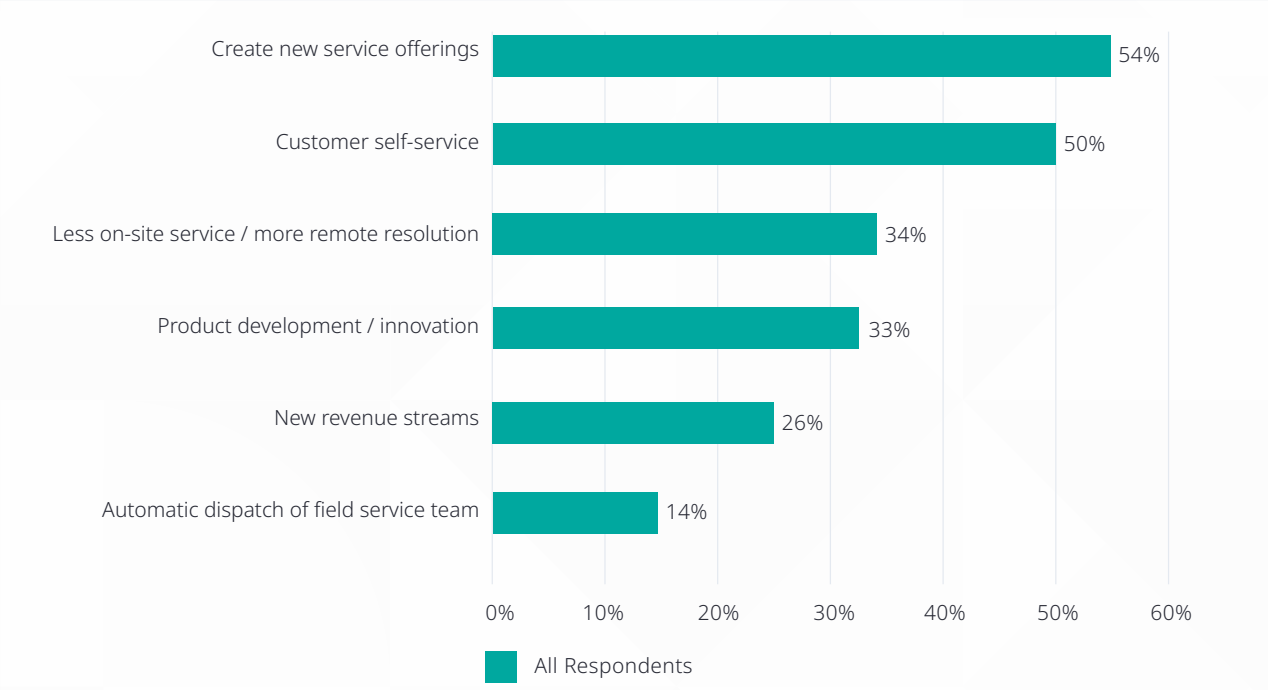


Fig. 4: Potential to enhance service experience by IoT [10]

10 Aberdeen Group, June 2017: The untold story from the field: reducing costs and creating happy customers

New opportunities to serve customers better are emerging within technical publications, such as deeper integration with maintenance plans and direct connection with the products themselves. These opportunities now allow technical publications to play a critical role in mission success – through streamlined asset availability and efficiently guiding customers and operators to execute their regular product maintenance or solve specific problems.

Despite often multiple disparate engineering and monitoring systems, the ability to deliver immediate, relevant and applicable maintenance and repair information to the service technician is now possible. Real-time information from external platform monitoring systems can also be shared through application interfaces, the Internet of Things (IoT), and new technical publication integration methods.

Even the smallest time and cost savings over the expected life of a product – by providing correct and relevant technical content, spares and tools – will return considerable savings. Reducing the need for technical manual 'page-flipping' also significantly increases the effectiveness of the service technician and improves customer satisfaction.

Chatbots, voice assistants and Augmented Reality (AR) applications are increasingly popular and also offer a more efficient way for Customer Support or Help desks to engage with customers or service technicians.

Smarter products demand smarter content

The maintenance status of a machine has an unquestionable impact on its reliability and resilience – especially for heavy-duty equipment. Historically, maintenance plans are managed as part of the maintenance procedures within the operators and service information package, and these can be very complex for heavy-duty equipment.

But in our increasingly digital world, how can a company expect to be able to offer lifetime service packages and Condition-Based Maintenance (CBM) if regular maintenance tasks are documented on paper?

Maintenance plans should be digitalized via a web application that is an integral part of the service for customers, dealers and service technicians. These digital maintenance plans need to be interactive so they can help to trigger, monitor, control and log any service and maintenance activity. They can be managed as part of the product's lifetime service record, providing a digital twin record. This digital service record then becomes a 'single source of truth' for all maintenance activities. Paper will then just be used – if requested at all – as a confirmation of executed service actions and not as the base for customers, operators and service technicians to document actions.

Outline of an IoT-triggered customer/operator self-service use case

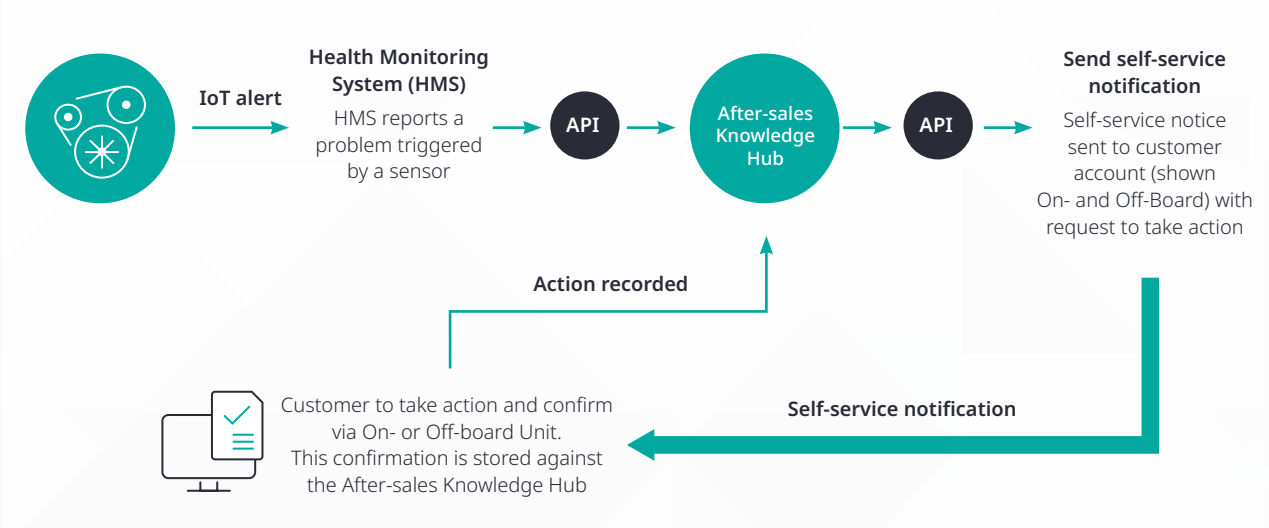


Fig. 5: Example of IoT triggered customer self-service use-case, monitored by digital maintenance plan

Customer/Operator Perspective:

As a customer/operator I want to receive a self-service notification once a certain operational parameter has been reached with instructions for the actions I (now) need to take. With the execution, along with these instructions, I want to have this 'documented' within the digital service record.

Manufacturer's Perspective:

As a manufacturer that has a lifetime service engagement with a customer/operator I want assurance that the required regular self-service actions are executed and 'documented' within the digital service record.

Align your content processes

Although the opportunities digital technology and the IoT open up to those looking to move from selling products to selling services are exciting, implementing them successfully is challenging – particularly with regard to all the new content that is needed and managing it efficiently.

To successfully implement content servitization you need to align your content processes to deliver the right information to the right person or machine, and use the right information from people and machines at the right moment.

The shift to content servitization doesn't happen overnight, but the more you can close the gap between 'People, Process and Products', the more efficient you become at providing Products-as-a-Service.

Continuous content creation and delivery

As well as aligning your people, processes and products, changing to Products-as-a-Service also demands that you rethink how your content is used.

For a future with connected products, some content that is currently published as one-off static publications now – like the 'Service Record Book' – need to become an interactive web application as mentioned earlier.

This can put considerable strain on content production and management processes that are rooted in the traditional publishing set up. A Component Content Management System (CCMS) can help enormously with this, as content is created in small chunks, rather than pages or entire documents, and these small chunks of content can then be used and easily updated if necessary in multiple places simultaneously – massively reducing the manual burden of having to create new content each time or search for each place the content has been used.

Servitized content management and delivery

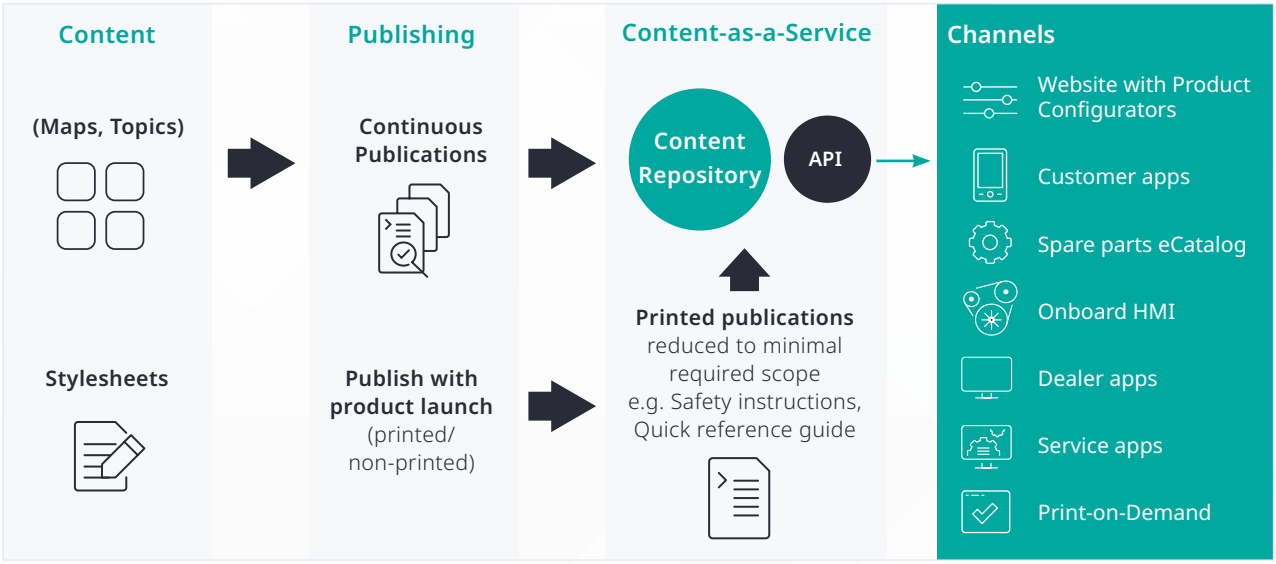


Fig. 6: Proposal for Content-as-a-Service

However, a CCMS is really only half of the story – to make full use of it and your intelligent content (see page 9), you need data-driven dynamic content delivery to all relevant channels, rather than having to adjust content and publish it to each channel separately.

Do lose your head

For content servitization to work it is essential to have a new and more agile way to publish and distribute your content.

To present and deliver content to any device, content cannot be associated with a layout – it needs to be format free.

To efficiently publish content to connected devices and multiple channels, a CCMS needs to be extended with so-called headless capabilities. The term 'headless' has been used for some time in the IT world to describe a computer system that can run without a monitor or presentation device.

A headless CCMS publishes content to a central location and exposes it via a Content API web service.
This is often referred to as 'Content-as-a-Service' (CaaS). Research firm Forrester provides a simple definition of CaaS:

CaaS
= {content authoring + management + API delivery}

This Content Service then becomes the central point for applications to connect to and to request information from – be it a website, smartwatch, tablet or touch screen panel.

A headless architecture provides a single source of truth content hub across the entire after-sales ecosystem with its various brands and stakeholders. It significantly improves efficiency, reduces publication and distribution efforts, and keeps delays to a minimum – all while improving consistency and the overall customer experience.

As the content is no longer created with a product, features or functions structure solely in mind, content needs now to be organized, structured, classified and managed in a customer, operator and service technician-centric way.

Such a fundamental change in emphasis takes time and effort, but as soon as the information types and related stylesheets that take a semantic approach to content creation are understood, the process becomes much simpler and easier for everyone to manage and follow. With an editing experience centered on pure content management, enriching content with metadata or personalization rules is also a much simpler process.

Traditional processes are not completely abandoned – a headless CCMS still requires creating content in the CCMS and uploading multimedia assets. And content will continue to be validated through workflows before its publication – content editors still need functionality such as versioning, simple editing interfaces and reporting from their CCMS.

A servitized CCMS with headless capabilities is much more agile than traditional CCMSs. The service information owner can create and manage content centrally and have various services that consume the content. If the information owner wishes to update service information, for example for a newly launched software-based service, this is then modified in the CCMS and simply republished.

Transforming maintenance strategies

As we have seen, the servitization of content and the use of intelligent content is an important enabler for manufacturers to move from 'making products' to 'delivering services'.

Key to unlocking the value that can be added for clients through content servitization is using these capabilities to transform your maintenance strategies. There are a range of maintenance approaches that can be used to structure maintenance programs, including Condition-Based Maintenance (CBM) as a part of a predictive and prescriptive maintenance process – as shown in Figure 7.

	Reactive	Proactive		
Category	**Corrective**	**Preventive**	**Predictive**	**Prescriptive**
Sub-category	Fix when it breaks	Scheduled maintenance	Condition-Based Maintenance – diagnostic	Condition-Based Maintenance – prognostic
When scheduled	No scheduled maintenance	Maintenance based on a fixed time schedule for inspect, repair and overhaul	Maintenance on current condition	Maintenance based on AI-enabled forecast of remaining equipment life
Why scheduled	N/A	Intolerable failure effect may be prevented through scheduled overhaul or replacement	Maintenance scheduled based on evidence of need	Maintenance need calculated and recommended by AI data analytics
How scheduled	N/A	Based on the useful life of the component forecast during design and updated through experience	Continuous collection of condition monitoring data	Forecasting of remaining equipment life by AI data analytics
Kind of prediction	None	None	On-and-off-system, near real-time trend analysis	On-and-off-system, near real-time analysis and recommendations
Required technologies	Yesterday's tech stack	Digital maintenance schedule, Content as a Service (CaaS)	IoT, Health Monitoring System (HMS), CaaS	IoT, HMS, CaaS, AI supported data analytics

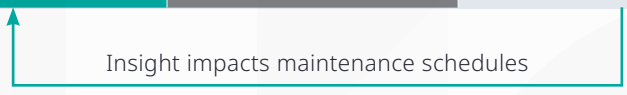


Fig. 7: Maintenance approaches and required technologies

In the past, the alternative to reactive maintenance (Stage 1) has most often been time-driven or scheduled maintenance. Under this approach, major maintenance occurs based on pre-determined time intervals and is usually expressed in operating hours. Maintenance actions are triggered primarily by time intervals that are based on average historical failure rates, engineering estimates or predetermined time cycles.

Many current maintenance activities rely on time or operation intervals for services that are labor-intense and fail to address specific conditions driven by environmental and operational factors – also known as the challenge around over- or under-maintained issues. While time-driven maintenance is the easiest to schedule, it fails to account for unexpected failures and does not incorporate the possible benefits of manual or automated condition inspection. Time-driven maintenance attempts to attain a predictive approach to maintenance, but it falls short of a true predictive strategy triggered by the assessment of actual equipment condition.

Without question, the life of equipment can be extended if proactive maintenance is performed.

Proactive maintenance, like lubrication and filter changes, or even more extensive changes such as the replacement of failure causing parts, will generally allow the equipment to run more efficiently and last longer – resulting in savings and greater time in use. While it will not prevent all catastrophic equipment failures, proactive maintenance will decrease the number of failures and overall equipment downtime. Minimizing these failures translates into savings in both maintenance and future capital equipment replacement costs. Because of the inherent randomness of individual item failures, proactive maintenance cannot eliminate all failures, but when a failure does occur, corrective maintenance will be required.

IoT, CaaS and AI technologies are now enabling the transition to more effective and proactive maintenance (servitization) strategies that will lead to fewer actual equipment failures and corresponding increases in overall equipment life and reduced total lifecycle costs.

Figure 8 below outlines the pros and cons of different maintenance strategies and their impact on failure rates.

Failure rates reduce as you move towards prescriptive maintenance

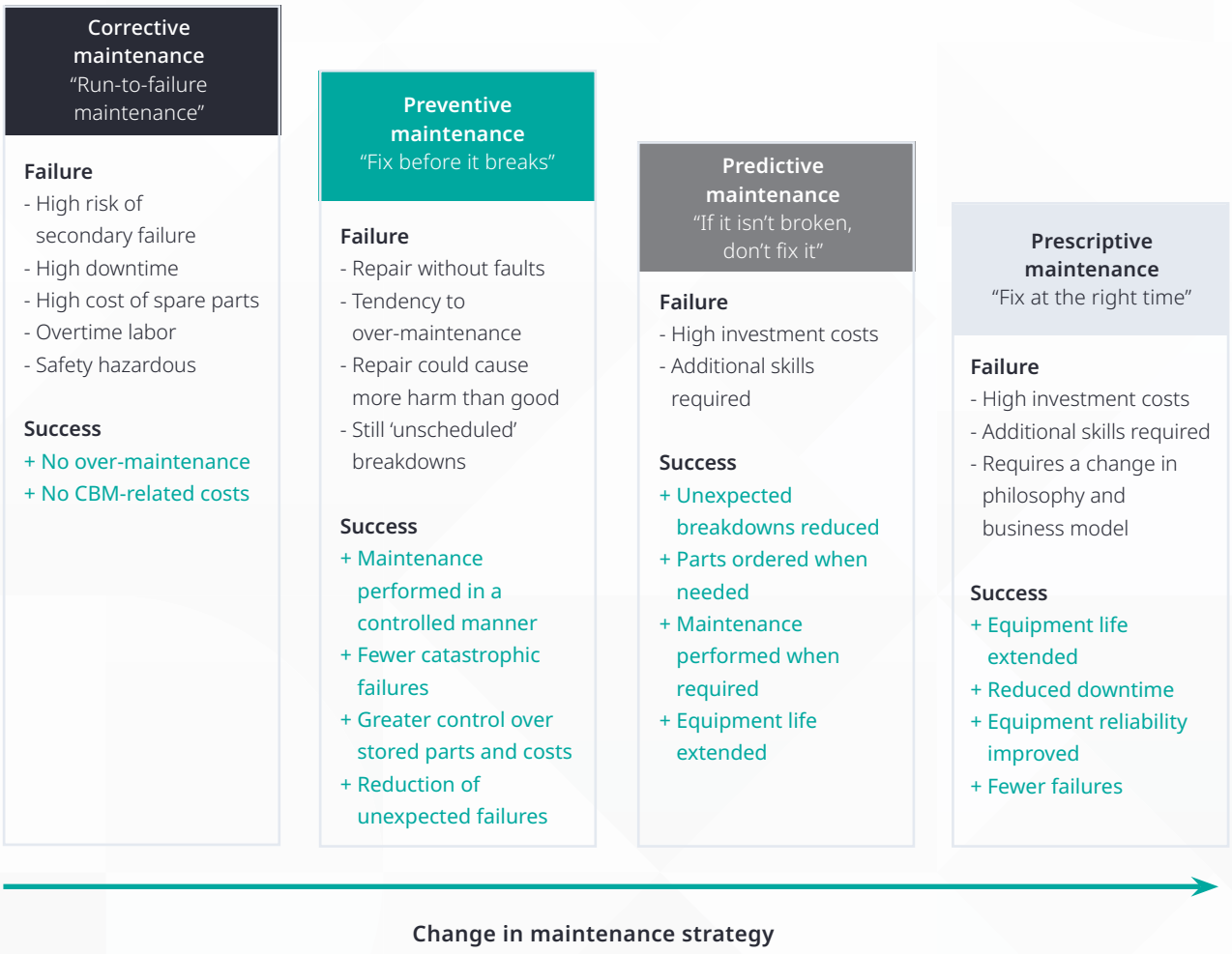


Fig. 8: Pros and cons of maintenance approaches

As AI and IoT are more widely adopted, the traditional 'Dispatch – Diagnose – Restore' approach will be replaced by a Diagnose first, then Dispatch and Restore approach.

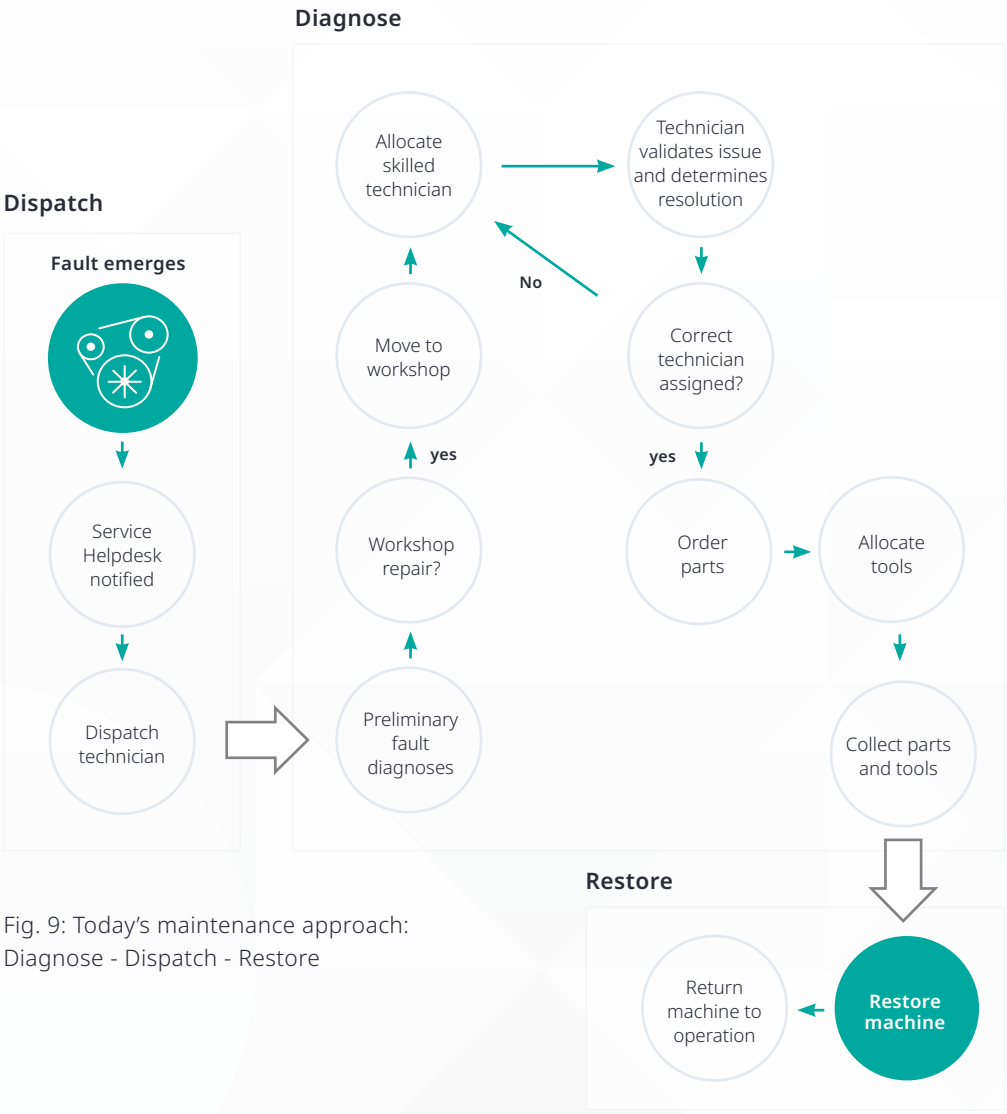


Fig. 9: Today's maintenance approach: Diagnose - Dispatch - Restore

Each approach to maintenance has positive and negative aspects. For example, preventive maintenance or timed component change-outs may not reduce failures, but they could reduce maintenance requirements and increase operational availability.

For some, there might be resistance to the change as it's a potential threat to the business model of dealers and may not provide enough benefit to the customer to make the switch.

CBM-enabled after-sales experiences

As manufacturers move towards making Industry 4.0 a reality (where the industry is fully digitalized with connected devices and machines), it is the IoT and evolving Artificial Intelligence (AI) technology that is driving the ability to accurately predict when a platform, system or component starts exhibiting early signs of malfunction or failure – well before an operator or service technician. This early warning capability, combined with AI data analytics and Content-as-a-Service integration, drastically reduces maintenance hours while maximizing mission availability and ensuring the right tools, spares and skills are available when a maintenance need is triggered.

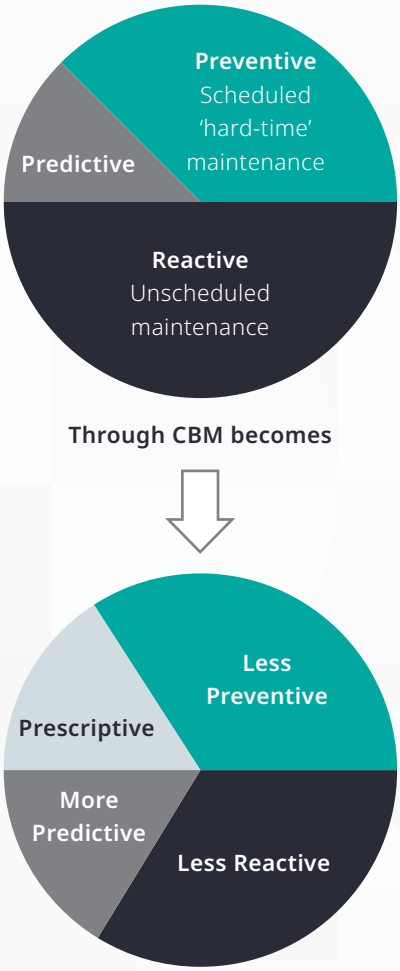


Fig. 10: Condition-Based Maintenance leads to smaller overall maintenance requirement

Benefits for a company moving to Condition-Based Maintenance (CBM)

- Can offer extended warranties or SLAs that will be cheaper to fulfill if products are properly maintained
- Reduction of delayed or missed service intervals
- Reduce costs of spare parts management
- Reduction in service notifications
- Increased productivity for the customer
- More efficient after-sales operations
- Increases the overall value of equipment over time
- Provides the best available product for each customer (revamp, modify or repair)
- Increases customer satisfaction and loyalty by predicting customer needs – saving them money and frustration

In this world, after-sales information is viewed as vital content to be used for operational and strategic advantage.

How after-sales information is defined, designed, produced and delivered to support the reduction of maintenance hours is now the core requirement to focus on. Capturing real-time monitoring data from a health monitoring system, via IoT, has the ability to trigger a repair and overhaul process that in turn initiates a maintenance process even before the asset has returned from operation.

New 'Diagnose – Dispatch – Restore' approach

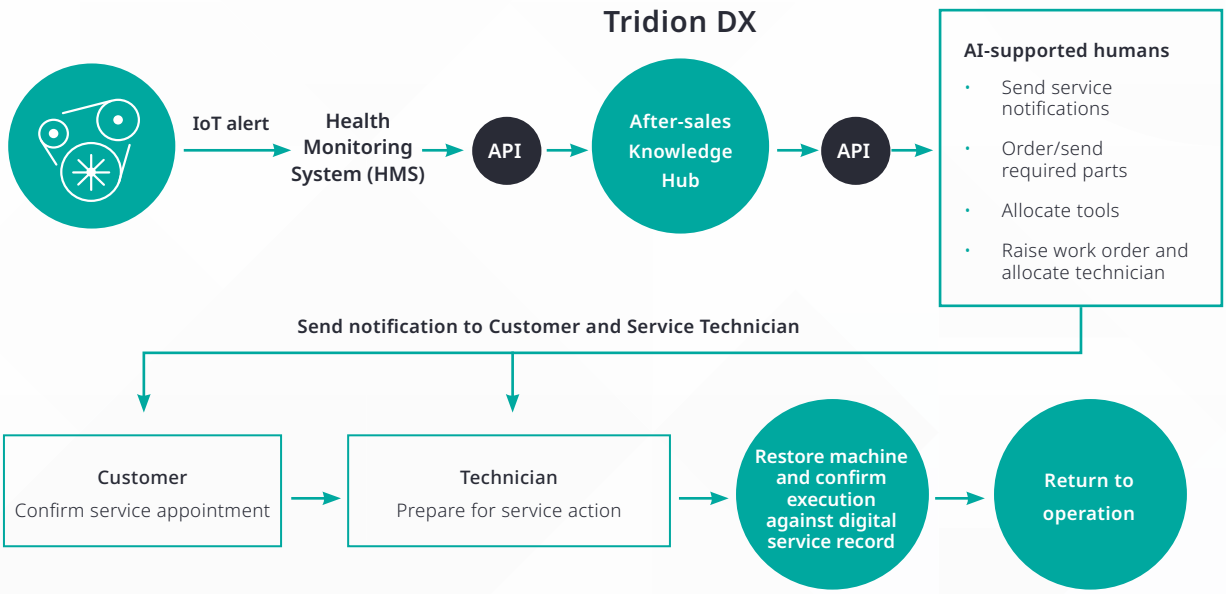


Fig. 11: CBM-enabled after-sales experience following the Diagnose – Dispatch – Restore approach

With a CBM-enabled after-sales experience, the main stakeholders have slightly different needs that need to be met.

Customer Perspective:

As a customer/operator I want to receive notification of a maintenance or service action once a certain operational parameter has been reached or a problem has been recognized by the Health Monitoring System. With this, I also want to be engaged with 'my' service technician/dealer for execution. With the execution of the maintenance or repair tasks, I want to have this 'documented' within the digital service record of my product and understand the reason for the notification.

Service Technician/Dealer Perspective:

As a service technician/dealer I want to receive notifications for upcoming maintenance or required service actions for the products/customers I am assigned to – once certain operational parameters have been reached. With this, I want to receive instructions, information about the required tools and spares to be taken with me. With the execution of the maintenance or repair tasks, I want to have this 'documented' within the digital service record of the product.

Manufacturer's Perspective:

As a manufacturer that has a lifetime service engagement and a Service Level Agreement (Servitization) for product availability with a customer/operator in place, I want to operate my after-sales organization as efficiently as possible. I want to take action before a product breakdown occurs and I want assurance that all executed maintenance and repair actions are 'documented' within the digital service record.

Adopting a CBM approach will transform your offering to customers and reduce your financial exposure as your extended warranties and service models become predictable. Your customers will not only benefit from increased product lifetimes, they will also see less downtime, reduced maintenance costs and greater productivity. In a competitive world, it's an attractive proposition.

Making it happen

As discussed earlier, there are many barriers to overcome in the transformation from 'making products' to 'delivering services'.

It requires significant changes to the orientation of the company, its processes, and indeed the technology needed to make it a reality.

Such a dramatic change can seem overwhelming, so it can be helpful to think of the transformation to a 'Product-as-a-Service' manufacturer as a journey, rather than something that happens magically overnight.

Figure 12 provides an overview of how this journey can be broken down into four maturity levels and their main characteristics. It shows one particular company, KAESER KOMPRESSOREN, with general industry figures shown in the green bar underneath.

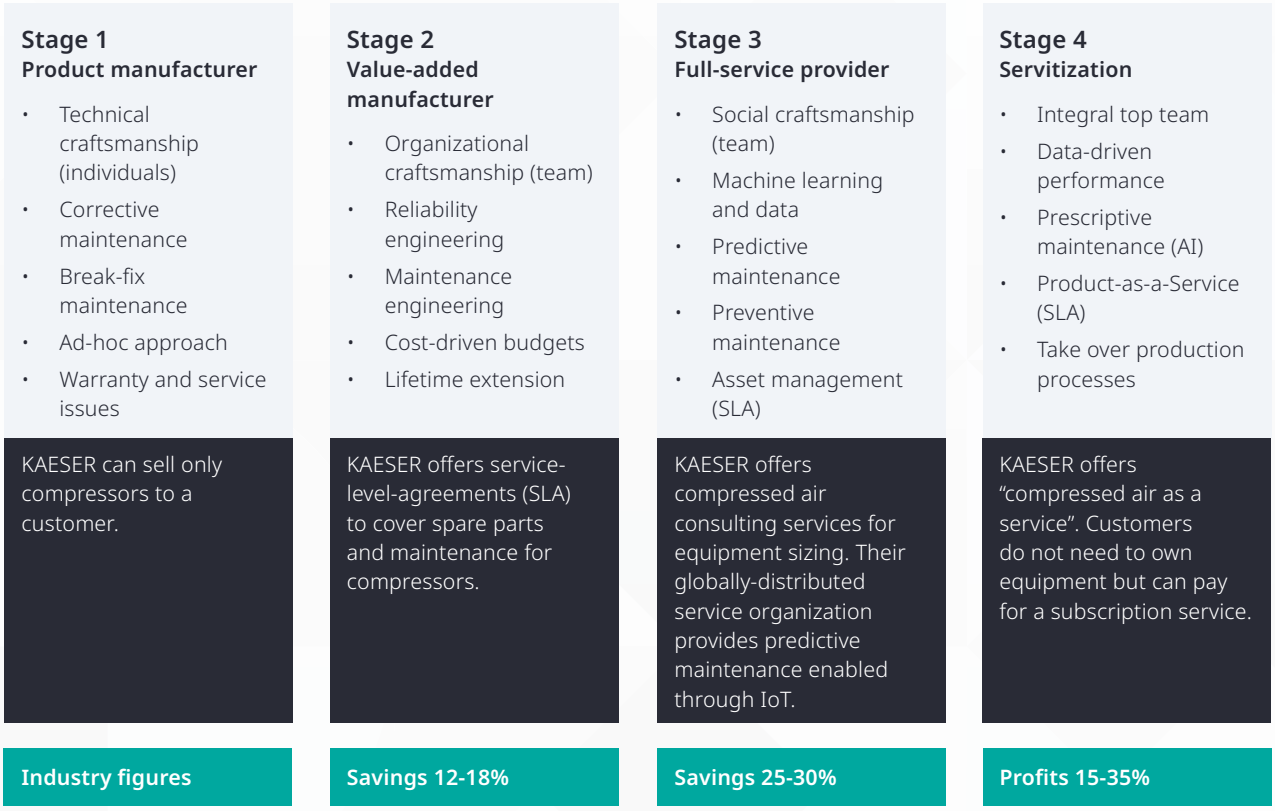


Fig. 12: Maturity Levels of Product Servitization with KAESER KOMPRESSOREN

Source: Scheper.Co

Different studies have shown that between Stages 1 and 3, efficiency gains of 12-30% were realized. Between Stages 3 and 4, companies increased profits by 15-35%.

Manufacturing companies can of course be found at each level.

Some have progressed from Stage 1 to Stage 2, where for instance the majority of after-sales content, such as operating manuals or service and repair instructions, are managed in a product-like approach as one-off deliverables such as printed books, PDFs or as HTML documentation packages.

Companies that are not able to establish a decent foundation layer (Stages 2 and 3), are inclined to try and leap from Stages 1 or 2 directly to Stage 4, for example by investing in tools for IoT data collection, but then struggle to turn that data via analytics into insight and real business value.

This is why every company needs to take into account their existing technologies, processes, and people if they are to achieve a successful and sustainable digital transformation.

Digital Transformation

Digital transformation is essential for every company and many of the technologies needed to complete the journey from making products to selling services can already be applied today. There is a huge difference between 'digitalization' and 'digital transformation'. While 'digitalization' involves bringing some of your activities into the digital age, 'digital transformation' is broader – it's about the enhancement of people, processes and (smart) products through digital technology, with the purpose of putting 'the right tools' into the hands of 'the right people' – allowing exponential results to be generated. Digital transformation requires integrating services and solutions around your processes, products and people if you are to move from selling products to delivering services in a servitized future.

Now is the time to start your transformation.

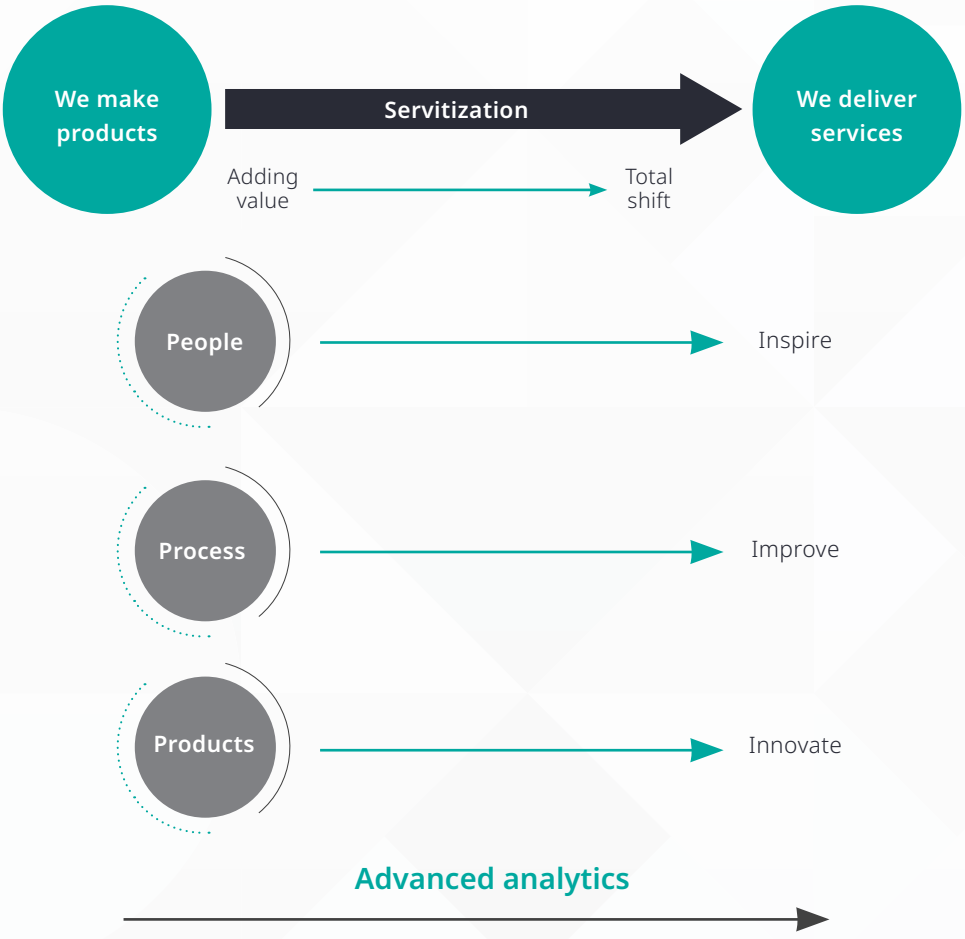


Fig.13: Roadmap for maintenance concepts in relation to People, Processes and Products

What next?

In this White Paper, we have described a comprehensive vision for servitization that we can implement in an integrated solution architecture, with advanced analytics solutions for companies that are transforming from a pure product manufacturer to a service provider.

Our solutions help manufacturing companies develop intelligent content for digitized product support and customer service.

With us, you can create, manage, review, approve and deliver content to all relevant channels more efficiently and continuously for your after-sales.

Inspired? We'd like to hear from you!

Website: rws.com/technical-communication

Contact: rws.com/contact/product-enquiry

Website: scheper.co

Contact: info@scheper.co

Talk to us today and find out how we can help you progress with your journey.

Scheper.Co – Engineering and Consulting, established 2014, creates end-to-end value-chain innovations by providing Product Development, Digital Transformation and Servitization consultancy. We Intent to Inspire, Innovate and Improve 'I4' by empowering Processes, Products and People, the '3Ps', together with Advanced Analytics AI.

About RWS

RWS Holdings plc is the world's leading provider of technology-enabled language, content management and intellectual property services. We help our customers to connect with and bring new ideas to people globally by communicating business critical content at scale and enabling the protection and realization of their innovations.

Our vision is to help organizations interact effectively with people anywhere in the world by solving their language, content and market access challenges through our collective global intelligence, deep expertise and smart technology.

Customers include 90 of the globe's top 100 brands, the top 10 pharmaceutical companies and approximately half of the top 20 patent filers worldwide. Our client base spans Europe, Asia Pacific, and North and South America across the technology, pharmaceutical, medical, legal, chemical, automotive, government and telecommunications sectors, which we serve from offices across five continents.

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