

Artificial Intelligence in Service

Executive Summary Research

12th of August 2023

Research partners:



Executive Summary

This executive summary shows the outcome of our Service Business Forum Event on Artificial Intelligence in Service, held on the 22/23rd of June in Zurich.

During the event we analysed and discussed the research done on the topic by the Noventum team and came to several conclusions on key issues:

- The Use Cases of AI in Service
- The benefits, risks, and implementation steps challenges of using AI in Service
- Some examples of AI applications in Service
- Conclusions

Using our research as the starting point we evaluated the impact of AI on all areas of a service organisation. In total, approximately 100+ use cases for AI in Service have been identified. The table below summarizes the opportunities that AI can provide for service organisations:

Service Transformation Management	By using AI to predict trends, outcomes and patterns, service organisation can identify successes of service transformation, anticipate change and make better strategic decisions.
Service Business Management	AI can provide insight into service adoption, service usage, demand predictions etc. and use this to optimise sales, marketing and delivery strategies and operations.
Service Lifecycle Management	AI can identify customer segments based on service needs and can assist to create better value propositions, optimise the service portfolio and related pricing strategies.
Brand Experience Management	AI can support in understanding the brand values that strategically differentiate a company and provide recommendations to strengthen the branded customer experience.
Marketing & Sales Model	By analysing customers' service needs, personalizing marketing messages and service offers, AI can increase sales conversion rates and support sales reps in their role as trusted advisors.
Delivery Model	AI can optimise end-to-end service delivery processes, by automating repetitive tasks, ensure delivery people have the right knowledge, predicting when service is required etc.

People Management	AI can play a role improve the quality of jobs, and create more career opportunities, improve recruitment, learning & development, and contribute to the well-being of people.
Knowledge Management	By using AI, service organisations can ensure that knowledge is available when and where required and is automatically created using information from all different sources.
Technology Management	AI can be embedded in different technologies used by the service organization to ensure a better integration between systems and service processes.

Companies can use one of our Assessments inside the Noventum Service Transformation Centre to identify improvement opportunities when using AI in service.

<https://stc.noventum.eu/Stcs/assessmentcentre>

THE RESEARCH FINDINGS

- Productivity gains can be as high as 30% for use cases such as the automation of low value activities.
- Customer Experience and Employee Experience can significantly improve with customers experiencing experienced a proactive personalised experience, improved self-service, cost reductions, and higher service levels; and employees benefiting from better jobs and more career opportunities.
- Companies can strategically differentiate using their unique knowledge, experience, and positioning in the market by leveraging their data with AI technologies.
- New risk and transformation challenges must be managed. However, the biggest risk for companies may be being too late to the game.

When looking at the impact and risks of using AI, we divided the **three most important stakeholder groups** in Service:



• The Customer



• The Employee



• The Organisation

The participants concluded on the benefits of using AI in each of the stakeholder group as follows:

Benefits of AI in Service by stakeholder group:

Customers	Employees	Company
<ul style="list-style-type: none"> • Better customer experience measurement and proactive management due to AI enabled improved service speed and responsiveness, enhanced personalization, proactive issue resolution and continuous improvement. • Improved self-service capabilities due to more accurate and reliable information, 24/7 availability, improved knowledge availability through standardised and automated knowledge article creation. • Service costs reduction and more convenience with more efficient service scheduling and resource allocation • Higher service levels with improved accuracy of installed base data and automated predictive issue detection, analysis, and resolution. 	<ul style="list-style-type: none"> • Improved job satisfaction, employee well-being and work-life balance due to more meaningful and fulfilling jobs thanks to the automation of repetitive tasks, streamlined workflows and processes, easier problem solving in field service, improved AI enabled collaboration and knowledge sharing. • Ability to tackle more complex tasks with AI support for complex problem solving and decision making. • Faster career development thanks to personalized continuous learning opportunities with AI enabled learning, and more rotation in roles. • More career opportunities with lower entry level requirements, faster onboarding due to AI assistance for technical knowledge. 	<ul style="list-style-type: none"> • Improved operational efficiency, productivity, and improved cost effectiveness due to improved scalability, better automation of processes, more knowledge accessible, better data collection and standardization, improved consistency in service delivery, better parts management, more predictive maintenance, optimized resource allocation, better demand forecasting, inventory management, better collaboration, and knowledge sharing. • Lower customer churn due to better customer experience, satisfaction, and loyalty. • Improved competitive advantage due to AI capabilities leveraging unique corporate data and knowledge, faster continuous improvement, innovation, and flexibility. • Reduce talent shortages by lowering (technical) entry level requirements offering more attractive jobs and faster career development opportunities, becoming a more attractive employer with high employee satisfaction and engagement levels. • Better risk management and profitability due to more data-driven decision-making, better risk mitigation and higher IT security.

AI involves new and different risks that impact employees, customers, and the organisation:

Risks and Impact of AI in Service by stakeholder group:

Customers	Employees	Company
<ul style="list-style-type: none"> • Need time to adopt the AI initiatives that often require communication and training. • Need to understand the cost and benefits of AI enabled initiatives or capabilities. • Lack of trust because of lack of transparency, bias, and ethics of AI recommendations. 	<ul style="list-style-type: none"> • Potential transformation of roles and displacement due to disappearance of old jobs. • Need to upskill on IT skills, human empathy and “soft skills” that become more valuable and required to address AI capability gaps. • Lack of empathy of AI in co-working and processes. • Employees may not be able to explain AI recommendations, creating lack of ownership and lack of trust. • Performance management systems may change. • Less opportunities to receive recognition for excellent performance in certain tasks. • In some roles, knowledge is more important than experience. • The required speed to learn the use of AI technologies and applications can be a learning challenge. 	<ul style="list-style-type: none"> • Required speed to identify and prioritize where AI should be implemented. • Required speed to identify and build the capabilities needed to support AI initiatives. • High start-up investment in AI technology. • Required speed to onboard employees during AI-driven transformation. • Speed to collect data, and assurance that it’s reliable. • Creating a culture of continuous learning and collaboration between AI systems and employees. • Adapting to evolving government imposed rules and regulations. • The required speed to implement security systems that can enable the trust and confidence of customer and employees when using their data.

IMPLEMENTING AI IN SERVICE

During the business forum, participants discussed several use cases and how they could be implemented in their companies. The conclusions are that AI initiatives must start with informing and training stakeholders about AI. This is to ensure that the persons involved are comfortable speaking about AI in Service and forming opinions about the opportunities, the risks, the business case, the implementation approach, and the impact of AI on their current way of working. If stakeholders do not feel comfortable about it, any AI initiative is unlikely to move forward.

The number of possible AI use cases can be overwhelming. Our research identified more than hundred improvement possibilities enabled by AI in Service, as well as several new risks and potential impact on stakeholders. The forum participants concluded that a thorough analysis is required from several perspectives, including strategic, operational, IT and financial, to fully understand the impact on customers, employees, and the company. Only with such deep understanding can the objectives and strategy to implement AI capabilities be defined. Amongst several implementation approaches discussed, a generic approach to AI can be broken down into **7 phases**:

Phase 1 / starting phase:

Assess and identify AI opportunities and define strategy/



Phase 2:

Data collection and preparation



Phase 3:

AI model development



Phase 4:

Integration and deployment into the systems and processes



Phase 5:

Testing and validation



Phase 6:

Monitoring and continuous improvement



Phase 7:

Scaling and expansion



Phase 1 is a crucial phase to ensure the implementation journey is accurately navigated.

This phase consists of the following steps:

1. Assessment to understand the potential impact of the AI initiative and defining priorities based on time to implement, level of investment, risks, benefits for customers, employees, and the company.
2. Identify customers, employees, and internal functions impacted by the proposed AI initiatives to obtain customer and employee insights.
3. Assess current process cost and detail process improvement opportunities.
4. Benchmark key performance indicators in service to quantify benefits, risks, and investment.
5. Create a qualitative and quantitative business case for the selected AI initiative.
6. Define objectives, strategy, and plan.

Examples of AI application in service:

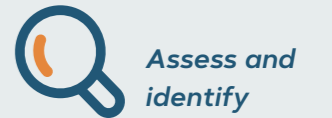
1. **Automating activities of low value:** Several activities in the support and field service processes are of low value. In other words, customers do not want to pay for these activities. As a result, these activities must be reduced through automation where possible. However, traditional service management applications require considerable administrative time. Using AI can bring the level of automation to a much higher level.

Examples of better automation in support centres are:

 - automated email and social media response to common inquiries or service requests,
 - using AI-powered chat bots that can handle customer inquiries, automated routing of service requests to the appropriate agent or team,
 - providing AI powered knowledge bases to customers that reduce incoming emails, chats or voice calls, increase predictive support and issue resolution to proactively address issues instead of dealing with them at an urgent bases,
 - agent assistance and knowledge retrieval to by providing real time suggestions and provide relevant knowledge articles with step by step instructions.

Examples of improved automation in field services are:

 - Intelligent automated scheduling and routing without the need for planners, service engineers and customers to spend time on this task, and AI powered knowledge base and guided workflows that reduce the time needed by service engineers to collect all required information to carry out a job.
 - Other examples include automated service reporting that reduces the time needed by service engineers to provide a service report. This can be enabled through speech recognition



that converts a spoken report by the service engineer into a written report, captures the time and materials used, changes in the installed base, etc.

Based on benchmark data we calculated, productivity improvement could increase by as much as 30% for an average field service organisation that already has a high level of digitalisation.

2. **Automated sales lead generation from the installed base:**

AI can be used to identify and qualify potential service sales lead by analysing the usage of equipment using IoT data. This includes determining patterns of use by analysing how customers are using equipment, performance data, and other data that indicates important moments in the product life cycle, acting as a trigger for a service salesperson to contact the customer and discuss a potential need for services.



3. **Addressing the skills gap:** Companies are facing shortages of technically qualified service engineers and support centre staff.

AI can assist less experienced employees by providing context specific detailed instructions for technical activities that they have not experienced before. Smart phones, tablets or PC's can be used in combination with augmented reality applications that can project information into a live video image, providing instructions or required information in real time. The technical analytical skills that are normally required to perform complex diagnostics are normally gained over several years of working experience. AI applications can gather such knowledge from several sources and deliver the required knowledge in the format and through the channel as required. AI can make the employee user experience convenient and fast enough so that it will enhance productivity. Reducing the requirements on technical skills and experience makes it possible for companies to lower the entry level requirements for service engineer and support centre roles. This makes it possible to attract persons in these roles that have not fulfilled all the technical requirements and qualifications. In turn, it also makes it possible for people with only vocational training rather than advanced education to perform more complex tasks.



4. **Creating attractive career opportunities in services:** When requirements for technical skills and experience are lower (see insert: Addressing the skills gap) companies can change the typical career paths for service engineers and support centre staff by allowing persons without the relevant technical qualifications to try out such roles with the assistance AI applications. This makes it possible to rotate employees faster through different roles to discover their talents and potential specialization. AI enabled on-the job learning tools will further speed up learning as on-demand learning possibilities will grow. Young management talent can benefit from on-demand learning and speed up their career development. AI-enabled knowledge management and learning tools can help create a bigger and broader pool of talents for companies and offer more attractive and faster career development opportunities for talent.



CONCLUSIONS

- AI is transforming how we work in service organisations. As service is essentially a knowledge driven activity, the number of valuable AI use cases is very large and offers significant benefits for the key stakeholder groups customers, employees, and company. Companies will experience significant productivity improvements, become able to improve customer value propositions and customer experience and create long term strategic differentiation from the competition.
- Customers can expect more personalized service experiences with better self-service. Service value propositions are expected to include more predictive, and proactive services that will reduce customer risk and add new levels of value. However, customers must adopt new AI enabled services, often sharing data and knowledge in partnership with service providers. Trust is the key word to success in AI enabled customer-service provider partnerships that will rely on ethically built and IT secure AI applications.
- The transformation to an AI enabled service organisation will have a significant impact on employees but at the same time will offer an opportunity for service organisations to address (technical) skills shortages. Employees will have access to more interesting and attractive jobs and faster career development opportunities. However, employees may also fear negative outcomes because of AI, whereas the success of AI depends on successful collaboration between employees and AI applications. Therefore:
 1. Employers must ensure that AI is used fairly, transparently, and without bias.
 2. Employers must be prepared to address potential job displacement and ensure that employees are

upskilled to meet the changing demands of the workplace.

3. Employers must strike a balance to ensure that AI is used in a way that benefits customers, employees, and the company.
- The road to success with AI in Service starts with a deep understanding of the possible improvement opportunities of AI, as well as the benefits, risks, and required investments. Organisations must start by defining business objectives, and building a business driven AI strategy and plan that includes short term learning projects that can scale.

**The biggest risk is not investing in AI,
this can quickly make a company
irrelevant in the market!**



This research is conducted by:



Research partners:



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