AI Automation Solutions at Henkel

Henkel's shared service organization "Global Business Solutions+" has been continually developing its AI automation solutions as part of its digital transformation journey. This has enabled capacities that were previously required for transactional activities to be refocused towards more complex business solutions.

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In 2003, Henkel embarked on its shared services journey by establishing its first shared service center (SSC) for accounting activities in Manila. Henkel's shared service organization "Global Business Solutions+" (GBS+) has since expanded and now supports the global Henkel organization in 75 countries with activities along the value chain. GBS+ has evolved from processing manual transactional activities to providing more complex business solutions. Examples of transactional, i.e., rule-based, and/or highly repetitive and frequent activities include posting invoices or generating simple reports. Examples of non-transactional more complex solutions, i.e., analytical and decision-based activities include global forecasting of sales volumes or artwork creation. Digitalization is a key strategic focus of GBS+ to futher speed up and automate processes and to generate additional insights. To leverage the full potential from digitalization, GBS+ has set up a digital transformation program.

The digital journey at GBS+ has started many years ago with introducing desktop automation solutions. Robotic Process Automation (RPA) was piloted in 2017 and soon became an important additional lever for process automation, which now counts over 300 developed robots. In 2018, GBS+ started to build the first AI capabilities and prepare the ground to leverage AI technology going forward. GBS+ has extended its scope with a digital transformation program to drive digitalization even further by leveraging different digital capabilities. To date, 15 solutions have been developed. **Figure 1** shows GBS+'s automation journey.

Desktop automation refers to macros and workarounds using pre-existing basic technologies like Visual Basic for Applications (VBA), automatic keyboard shortcuts, or screen-scraping to automate repeatable actions with a structured data base. Robotic Automation is a specialized software that works by using IT to automate high-volume, repeatable, and rule-based routines, such as processing information from e-mails to SAP. This reduces manual workload and increases the quality of data in the systems. AI automation includes various opportunities for intelligent automation like Machine Learning, Natural Language Processing, Optical Character Recognition or Speech Recognition that enable non-routine tasks requiring judgement to be performed and that generate new insights for better decision making (Advanced Analytics). AI is the simulation of human intelligence in machines. These machines work and react like humans with human cognition to enhance the user's ability to solve business problems with predictions and recommendations. This is done by using intelligent algorithms and data processing. For GBS+, AI is essential to increase efficiency, speed, and agility, to accelerate digitalization, and to offer a broad and growing toolbox for multiple business challenges.

Picking the high-hanging fruit with AI automation solutions

With the development of AI, the automation journey has been moving from RPA towards intelligent automation. The latter can also be referred to as cognitive automation, which delivers new insights using Big Data. Desktop automation and RPA solutions continue to be implemented in the RPA

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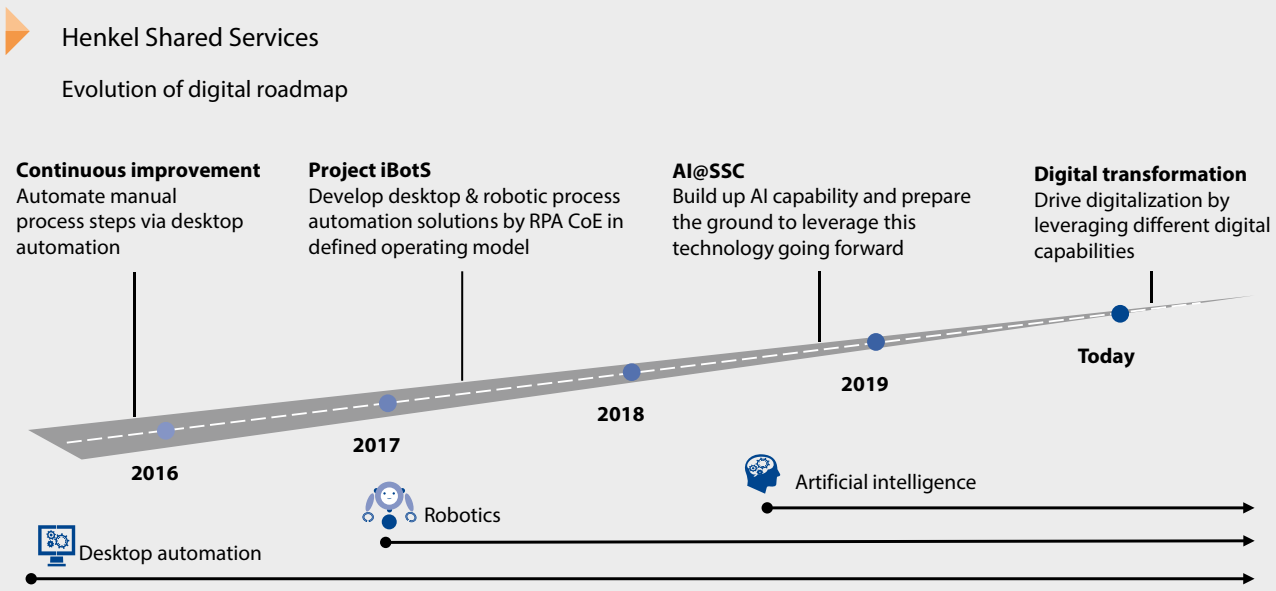
Center Of Excellence (CoE), while GBS+ is now at a stage where AI can be increasingly exploited as its potential application area is ever expanding.

Use case examples for AI applications are e-mail clustering, chatbots, matching models, workflow forecasting, and customer clustering. E-mails can be clustered based on content and rules to reduce time spent on sorting mails and to make it easier and faster to access needed e-mails. Chatbots can answer questions on specific topics, acting as a central knowledge resource, and providing 24/7 availability. The target audience for chatbots can vary from specific process areas to overall questions on GBS+. Chatbots can support newcomers with location-related questions, such as how they can reach the IT Service Desk, external suppliers with where to find their orders, fixed asset managers with conditions for lease contracts, or any

"For GBS+, hyper automation is a core technology."

purchasing employee with the status of supplier invoices. Matching models use logic to match items like goods/invoice receipts or accounts receivable/payable to unmatched items, directing focus towards high-risk items and enabling continuous adaptation based on new data. Workflow forecasting assists in predicting workflows based on historical data, helping to set the correct priorities and generating early warnings when a workflow is at risk. Customer clustering can be used to group customers based on their

Figure 1 GBS+ Automation Journey



Source: Author's illustration

payment behavior, as a basis for strategy development, and to eliminate the need for follow-up tasks.

Compared to RPA solutions, AI solutions often do not bring immediate benefits but evolve rather slowly, following the "think big, start small" approach. This approach can lead to higher productivity, personnel cost savings, higher capacities, as well as better results and growth.

Identification and application of automation use cases

Ideation workshops are often set up to identify additional process automation potential. The identification process or process automation project lifecycle can be separated into an innovation stage, during which use cases for new technologies are collected, and a consultation stage, in which concrete challenges are addressed by identifying the appropriate technology. In the past, ideation workshops only tackled challenges that could be resolved by desktop automation or RPA. Their scope has now been extended to encompass AI automation solutions. Within the ideation workshops, existing RPA solutions are reviewed to determine whether they can be enhanced by combining them with AI solutions, resulting in a hyper automation. For GBS$^+$, hyper automation is a core technology that offers higher flexibility and performance by enhancing RPA with AI. Hyper automation addresses the processes where data is unstructured and cannot be processed by traditional RPA solutions alone. The main difference between AI automation and hyper automation is that hyper automation includes both RPA and AI. Specific tools that are increasingly being applied at GBS$^+$ to identify automation potentials are Signavio, where all processes are modelled, and Celonis, where actual process data can be retrieved, and which allows for automation potential to be detected using process mining.

AI automation solutions can help identify patterns in unstructured data and generate new insights.

The following use cases show how GBS$^+$ pursues the implementation of AI solutions together with the finance unit and the recently established Henkel dx (digital business) unit:

1. **RPA automation:** In purchasing, teams frequently negotiate prices and commercial terms with suppliers. These are recorded in multiple and at times complex price lists that must be uploaded to SAP repeatedly and subsequently maintained. Issues surrounding this activity include varying formats, high volume, missing or incorrect data, and time pressure. The standardization of the price template and the development of an RPA solution that checks for data completeness and correctness, automatically uploads it, maintains the data in SAP, and contacts the requester via mail in case of missing information, helped to increase efficiency and to improve quality. The freed-up resources could consequently be used for more value-adding activities.
2. **AI-powered chatbot:** For a project implementation manager, the launch of a new product innovation project can be complex and time-consuming. This also applies to the process's initiation, which is done using the Henkel Innovation Tool (HINT). Managing the project in HINT requires deep knowledge of multiple modules (e.g., supply chain, research & development, marketing, and production) and awareness of all rules to operate the tool, which often requires seeking advice from other employees.

Summary

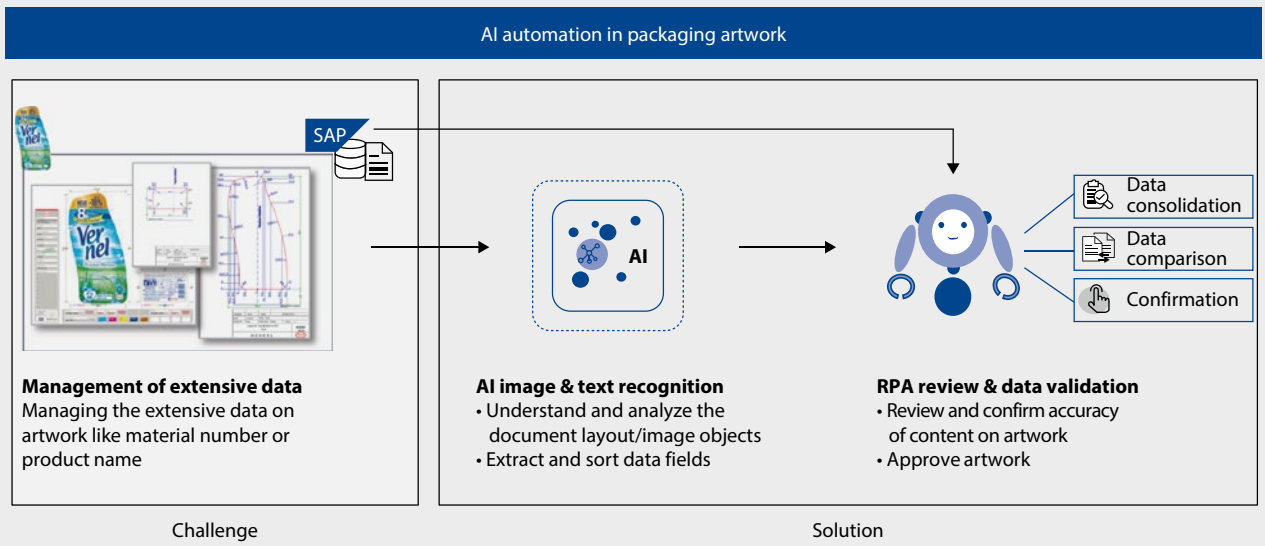
- The automation of shared services is shifting from desktop automation and RPA to intelligent automation, making use of cognitive technologies such as AI and leveraging big data.
- Intelligent automation solutions increasingly focus on value-adding activities, generating new insights and enabling efficiency gains.
- Shared services will be one of the main drivers of Henkel's digital transformation alongside experimentation with new and innovative technologies and a digital workforce.

AI is a key driver for further automation and insight generation.

With the implementation of a chatbot that runs 24/7 and assists with hundreds of questions, the project manager can learn more about the tool without being dependent on his colleagues and focus on steering the project. Over time, the chatbot can be improved by combining it with other tools. This helps to provide holistic and transparent information on end-to-end reports and to promote data-driven decision making.

3. **AI automation:** Henkel aims to have the right products in the right quantity in the right place at the right time. The release of a new product requires many decisions to be made until it finally reaches the customer and consumer. These decisions, in turn, are influenced by several factors, which are often not based on data only. Examples of such factors encompass the time needed to communicate or exchange documents with individual suppliers or the effect of seasonal fluctuations, e.g., vacations, on run-times. Consequently, this may lead to unrealistic expectations about the readiness of a product including product data in the system. Effective forecast analytics using AI to dynamically predict data readiness allows for efficient workforce utilization and project prioritization, as well as the detection and proactive resolution of potential bottlenecks using alert systems. An AI solution is a powerful tool to generate insights and make data-driven decisions while optimizing business scenarios and reducing time-to-market. Other benefits arising from an effective forecast might be improved customer service levels and a simplified inventory level management.
4. **Hyper automation:** As a consumer goods company, Henkel faces the challenge of managing the development of massive amounts of packaging design to increase brand value and launch new products ahead of the com-

Figure 2 AI automation in packaging artwork



Source: Author's illustration

petition. The GBS+ master data team is responsible for the validation process and for ensuring that the correct data (see **figure 2**) is displayed to the customer. This activity was formerly performed using a visual check, which involves a high level of effort and the risk of human error. Furthermore, complexity is increased due to differing, non-standard layouts from the various agencies designing the drafts. To make this activity more efficient, advanced AI technology was combined with computer vision and neural networks to recognize the specific layout with all text parts and with object recognition to identify and extract all relevant information. To further increase the scope and efficiency, a hyper automation solution was designed which implemented RPA to compare the extracted data with existing data stored in Henkel's systems. This solution provides time savings, increases quality by eliminating human error and provides the potential of scaling it to other business units and streams.

The last use case demonstrates the potential benefits of implementing hyper automation solutions by reviewing existing RPA solutions for AI potential or augmenting AI solutions with RPA solutions. AI automation solutions often require experimentation and a culture that accepts learning from mistakes. The higher-hanging automation fruit needs to be picked with patience since the benefits are often not of immediate nature but likely to arise over time.

AI combined with RPA can provide powerful hyperautomation solutions.

The digital journey continues

Technological development will have an increasing impact on shared services and will significantly determine its future evolution. GBS+ will continue to focus on the automation of processes and elimination of manual tasks. Automation will increasingly change towards out-of-the box and end-to-end automation across processes. While the low-hanging fruit has been picked, the focus will further shift towards more complex business solutions including experimentation with new AI opportunities. To accelerate the digital transformation, GBS+ has launched a digital transformation program. One of it's key pillars is to digitally upskill the GBS+ workforce, which includes raising awareness regarding digital tools and potentials.