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## RPA in the Automotive Industry

It's not hard to picture how automation works within the automotive industry, especially since it is well known that automation technologies are integrated within the operations of automobile suppliers. Many automobile manufacturers, for example, implement physical robots in their assembly lines to streamline how cars are assembled and tested. In fact, much of the automotive industry has been automated since the first industrial robots were introduced to the automotive industry in the 1960s.

However, the development of software solutions — robotic process automation (RPA) in particular — is expected to provide even greater improvements for the automotive industry in coming years. Based on recent research conducted by the consulting firm Synechron (<https://www.synechron.com/sites/default/files/white-paper/Robotic%20Process%20Automation.pdf>), the automotive sector, among other industries, will significantly benefit from RPA via a shift in consumer and business applications which are expected to become a \$8.7 billion market by the year 2024. This forecasting naturally begs questions about what can be expected of automotive industry automation, such as: How is the implementation of RPA in the automotive industry unfolding? What benefits can be expected? What is possible in the long-term? How can automotive manufacturers leverage automation as a competitive advantage?

automation, we'll briefly examine the history of automation in the automotive industry, and then discuss both the current state of affairs and what may be expected in the mid and long-term future.

## The history of automotive automation

With the onset of the Industrial Revolution, there was a significant shift from production by manual means to progressive manufacturing processes, particularly those powered by new tools and machines. This period during the 18th and 19th Centuries marked the rise of factories and the first assembly lines; these advances also paved the way for the development of the first modern automobiles which became widely available in the 20th Century.

The first car, the Benz Patent-Motorwagen, was introduced by the German inventor Karl Benz in 1886, while Henry Ford started manufacturing the Ford Model T in 1908. It was at this time car production exponentially increased and cars became more widely accessible to the public. Important for keeping up with consumer demands for automobiles, the earliest industrial robots were able to quickly complete manufacturing tasks in assembly lines without requiring human intervention.

The first industrial robots, two of which included the Stanford Arm and MIT's Silver Arm, were used by the automotive industry starting in the 1960s. Since then, the use of robots in automation has expanded to perform a wide variety of functions including welding tasks, application of door sealant, installation of parts, and painting. Such developments in automation meant workers were aided in their previously labor-intensive and often dangerous tasks. These robotic innovations also allowed for improved production, increased reliability, and decreased costs.

## The current state

Despite these physical robots being able to help streamline the assembly line, much of the automobile industry to this day still struggles to maintain control over many of its back-office tasks and manage its operational processes. As a result, automobile manufacturers face a multitude of pain-points, including:

**Juggling labor- and time-intensive processes**

Many companies face hurdles such as effectively managing inventory levels of the needed manufacturing parts, digitizing paper documents, as well as processing payments to suppliers in a timely manner (<https://www.uipath.com/rpa-in-finance-and-accounting>). These operational burdens often take away focus from what matters the most: delivering top-grade services and products to customers.

### **Managing data, connectivity, and the Internet of Things**

Modern cars are increasingly embedded with sensors and microcomputers that collect and transmit vast amounts of data (for example, about car usage and maintenance) through wireless connectivity. Companies in the automotive industry are tasked with storing, managing, and analyzing these statistics for customers in a secure and reliable manner.

### **Reducing operating costs**

In an increasingly global marketplace, automobile manufacturers often experience a slowdown in sales growth and struggle to gain market share. Companies must drive down their operating costs as much as possible in order to maintain a competitive presence in the automobile market and to offer superior automobiles at affordable prices.

### **Providing innovative solutions for customers**

In addition to maintaining low costs for customers, companies must simultaneously provide clientele with the most innovative products. Automobile manufacturers work around the clock to, for example, develop electric and fuel-cell powered alternatives to combustion engines and to improve autonomous driving technologies.

In order to overcome these challenges, many companies across the automobile industry are turning to RPA's automation capabilities (<https://www.uipath.com/platform>), attaining improved agility and more efficient operations across the value chain. Take, for example, a medium-sized automobile manufacturer based in Western Europe. In response to experiencing the previously mentioned pain-points, the company recently decided to implement RPA. Through the help of the software, the company was able to

automate many of its business operations, especially those that required the involvement of its employees, within just a few weeks time.

Previously time-consuming, laborious, and menial tasks, such as emailing customers and suppliers, digitizing paperwork, processing orders and payment transactions, as well as managing procurement processes, could now be executed by **RPA software robots** with the click of a button. The automation technology also allowed for real-time monitoring of supply and demand. This meant that customer demand could be more successfully balanced with production capacity and inventory levels and that products could be sold at affordable prices to the customers.

By implementing RPA, the automobile manufacturer in question was able to enhance business value by achieving leaner operations, better inventory control and resource procurement, and improved communication with suppliers and customers. What's more is that RPA allowed the manufacturer to more effectively allocate its employees to jobs that allowed them to better serve customer interests.

Capgemini Consulting (<https://www.capgemini.com/resources/digital-transformation-of-supply-chains>), in fact, suggests that this digital transformation provided by RPA:

*[...] can enable superior collaboration and communication [...] resulting in improved reliability, agility and effectiveness [...] and] up to 20% cost saving" for the similar companies in the automobile industry as well as the entire automotive supply chain.*

## What to expect in the future

As a result of RPA's many operational benefits, car manufacturers around the world are able to streamline their internal workings and alleviate business challenges. Even more so, implementation of the automation technology can also drive significant front office improvements for customers (<https://www.uipath.com/blog/the-right-customer-facing-tasks-for-automation>). RPA's automation capabilities are allowing the automation industry to deliver higher quality services and the most affordable cars for its

customers, similar to how the implementation of the first industrial robots unfolded in the mid-20th Century.

While RPA is already being used by automobile manufacturers, the application of RPA within the automotive industry is only expected to become more universal and diversified in the future. Additionally, a McKinsey & Company (<http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/disruptive-technologies>) report suggests that one of the most disruptive technologies by 2025 is expected to be the automation of knowledge work with the help of RPA. Particularly, the development of RPA alongside other automation technologies (e.g. **artificial intelligence, computer vision**) will help to drive advancements to the automotive industry's current operations as well as developments to autonomous and near-autonomous cars.

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