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Robotic Process Automation in Pharmaceutical Industry

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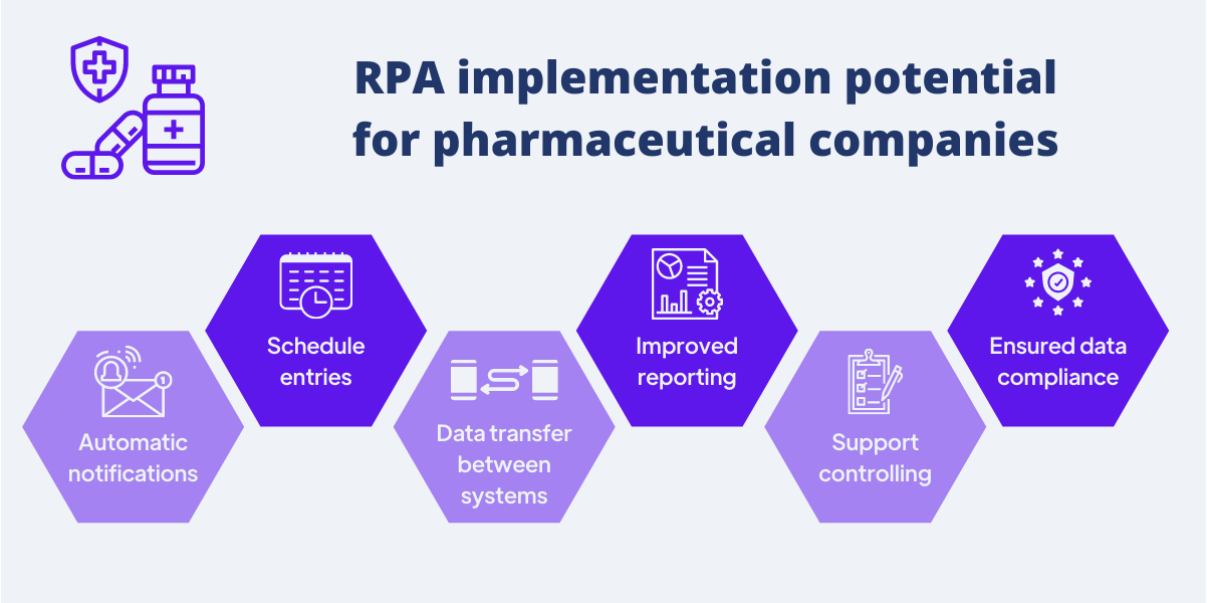
An extensive study on Robotic Process Automation (RPA) use in the pharmaceutical industry

Pharmaceutical companies have to face multiple challenges resulting from industry specifics - highly regulated and compliance-driven. We were able to identify multiple repetitive, time-consuming, and error-prone tasks that are strong candidates for robotic process automation implementation. This article will help you to understand the potential of RPA and its benefits for your company.

What is Robotic Process Automation and how pharmaceutical companies can use it?

RPA software is used to interface with computer applications to carry out repetitive, rule-based tasks, perform calculations, and execute decisions. Automation is carried out through dedicated software bots that have been programmed to perform specific tasks according to rules and commands previously written in a computer program.



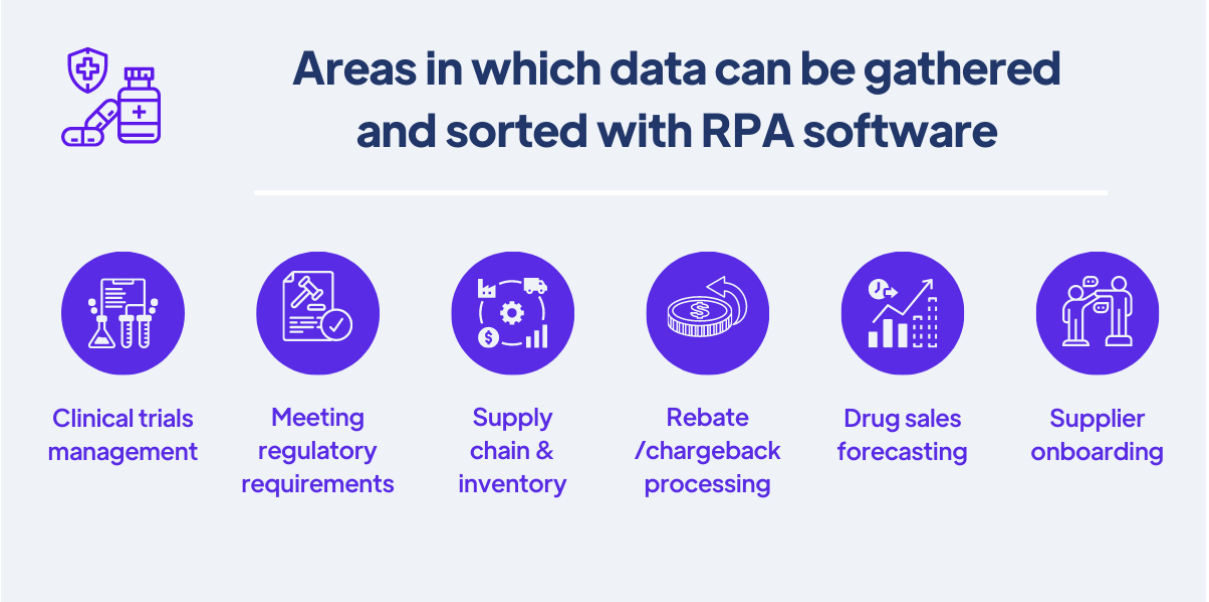
The potential for RPA for pharmaceutical companies is endless, as robots can be used to automate both front-office and back-office tasks. Robots help fill out records and documents, and can be used to send automatic notifications, make schedule entries, transfer data between systems, create documents, as well as for reporting, controlling, or ensuring data compliance. According to a McKinsey study, almost 45% of the jobs we do can be automated, which provides a huge potential for cost reduction and effectiveness improvement.

What you can find in this article?

Areas of the pharmaceutical industry that can benefit from RPA. Ways to include RPA in the company's Business Process Management strategy. Examples of how can RPA be used for:

- clinical trials management,
- meeting compliance and regulatory requirements,
- supply chain and inventory management,
- accurate drug sales forecasting,
- optimizing supplier onboarding,
- rebate and chargeback processing. Other common applications of RPA software in pharmaceutical companies. Importance of RPA implementation strategy for a pharmaceutical company. Future of automation in the pharmaceutical industry.

Which areas of the pharmaceutical industry can benefit from robotic process automation?



At a certain growth stage, each pharmaceutical company can identify dozens, and sometimes even hundreds of repetitive, time-consuming processes that can be

automated with RPA software. When a business grows, the amount of manual tasks tends to increase as well. To improve efficiency companies start using cloud-based systems, and in many cases, older legacy systems are not compatible with them. That adds up additional time required to move data between platforms, which is a perfect area for robots to improve, as they can obtain and add data between various business systems without the need to create additional programming interfaces, allowing easy integration and saving time for your employees.

Use cases for pharmaceutical companies can be found in many areas, including:

- clinical trials management,
- meeting compliance and regulatory requirements,
- supply chain & inventory,
- drug sales forecasting,
- supplier onboarding,
- rebate/chargeback processing,
- human resources,
- administration, tax, and finance.

An inspiring example of implementing RPA within the pharmaceutical industry is the Piramal Group case study. This global business conglomerate, operating in the Pharma sector, was able to automate 60 business processes within the first 2 years after UiPath software implementation, achieving 5,760 hours savings per month annually.

In this article, we will go in-depth and show the potential benefits of robotic process automation in each of those areas. If you have specific questions about the possible implementation of RPA in your company you can also benefit from a free 30 minutes consultation, during which we can advise how to approach the optimization of business processes.

RPA as a part of a Business Process Management strategy in pharmaceutical companies

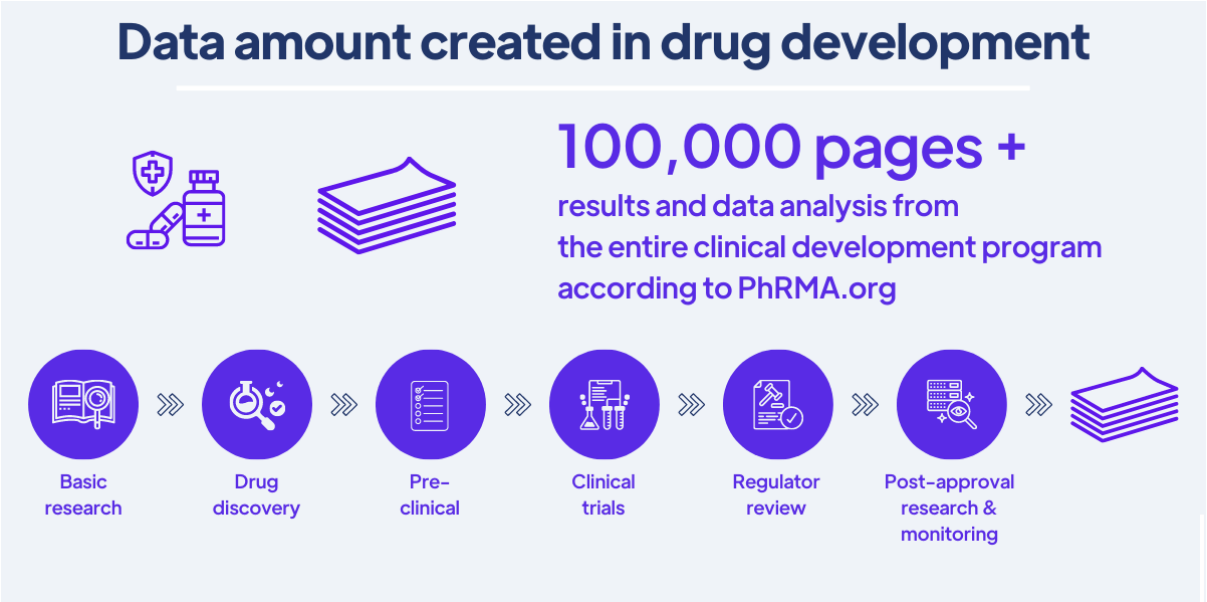
In this article, we focused on a small part of the automation strategy, which is the use of RPA software for streamlining manual and error-prone processes. But as a general trend, it's worth noting that it would be impossible to find today a pharmaceutical company that did not implement any sort of electronic document workflow.

But implementation is only the first step, it is essential to ensure that such document circulation systems properly serve their purposes, which are most of all:

- eliminating human error from the document flow process,
- ensuring control over the document circulation processes,
- creating a central repository for documents,
- putting in order messy and unstructured processes.

To learn more about what a company should consider to assure that automation is being implemented and used in the most effective way, we invite you to read our in-depth guide on How to identify and automate processes and workflows in your company.

How can RPA be used for clinical trials management?



For many companies, Randomized Clinical Trials (RCT) are areas in which many repetitive tasks can be automated, which can lead to significant success rate improvement across different phases. Designing and completing an RTC requires gathering vast amounts of data and using them efficiently, which is time-consuming and error-prone.

RPA use for patient matching

According to Pharmaceutical-technology.com recruiting patients on to trials has become a bottleneck in many areas of clinical research. The procedure of creating a patient population with dynamic inclusion and exclusion is time-consuming, and can easily be optimized with the use of robotic process automation software. Bots can be used for initial patient matching, before interaction with employees will be required, in effect speeding up the recruitment process.

Trial master file management with RPA software

All activities related to clinical trials have to be registered and stored in TMF, and in many cases, those data are entered manually. With proper use of RPA, all of that information can be uploaded automatically, and with proper data structure, bots can be also used to verify which data are missing.

The list of information that should be gathered in TMF is extensive, including trial documents, details of the laboratories, shipment records, storage records, monitoring visit reports, and much more. By combining RPA software (for example UiPath) with optical character recognition (OCR), which allows converting print or handwritten text into machine-encoded text, most of the data in those documents can be easily digitized and effectively used.

Automatisation in processing pharmacovigilance cases

According to an Ernst & Young report, a large pharma company processes approximately 700,000 adverse events (AE) cases annually.

It’s worth noting that:

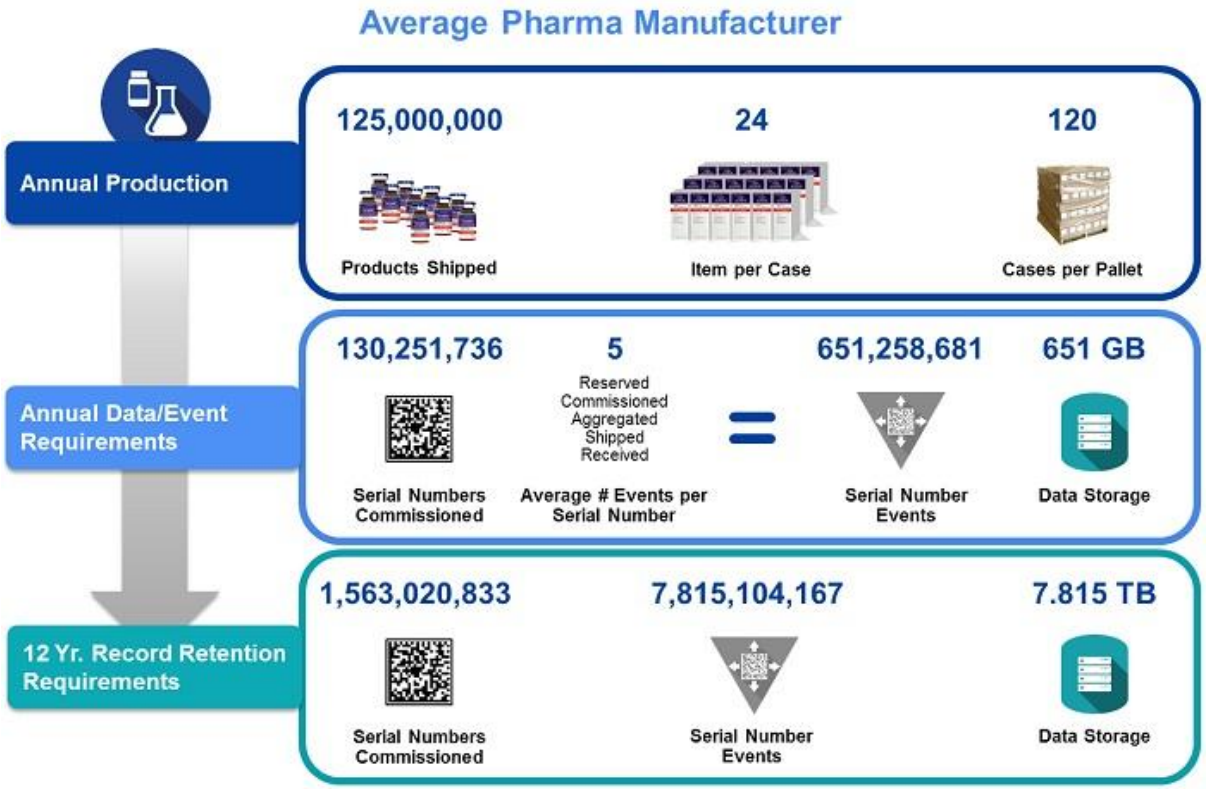
- 50% of PV resources are currently spent on managing cases that require integration of data that vary in quality, structure, and format,
- by Ernst & Young estimations by automating such manual steps the typical top biopharma company can reduce time spent on PV by 45%, with potential multimillion-dollar annual savings.

By implementing RPA software data collection and management can be radically improved, increasing effectiveness and guaranteeing significant cost reduction.

Meeting compliance and regulatory requirements with RPA

Regulatory affairs (RA) departments in pharmaceutical companies have to deal with many processes that are still manual in nature. Gathering documents, verifying if they are compatible with regulatory standards, and including them in regulatory submissions is time-consuming and error-prone. In many cases, RA employees are still using spreadsheets to maintain data, which is not helping them to effectively gather and use that information.

Amount of data that have to be gathered and used to comply with regulations will only increase, a good example proving how much, can be a case described by pharmamanufacturing.com, related to data that have to be created and stored, resulting from unit-level serialization required in Drug Supply Chain Security Act (DSCSA):



When employees have to compile reports for regulatory purposes, they should be able to access the documents and information quickly. It's in many cases difficult with companies using legacy IT systems that lack the ability to integrate with newer software. RPA tools allow not only to gather data in faster and more reliable ways but also to access and compile them faster when they are needed the most.

Supply chain and inventory management with RPA

Automation of multiple routine processes that can be identified within the supply chain can radically improve efficiency and bring down operation costs. Opportunities that Robotic Process Automation brings will be beneficial for pharmaceutical companies worldwide, but this software can be especially interesting for entities operating on the US market. The reason for that lies in the requirements resulting from The Drug Quality and Security Act (DQSA), and particularly Title II of DQSA, the Drug Supply Chain Security Act (DSCSA), which outlines steps to build an electronic, interoperable system to identify and trace certain prescription drugs as they are distributed in the United States.

Multiple processes can be automated within areas such as:

- inventory management,
- supply and demand planning,
- purchase order management,
- returns and refunds processing,
- invoice management.

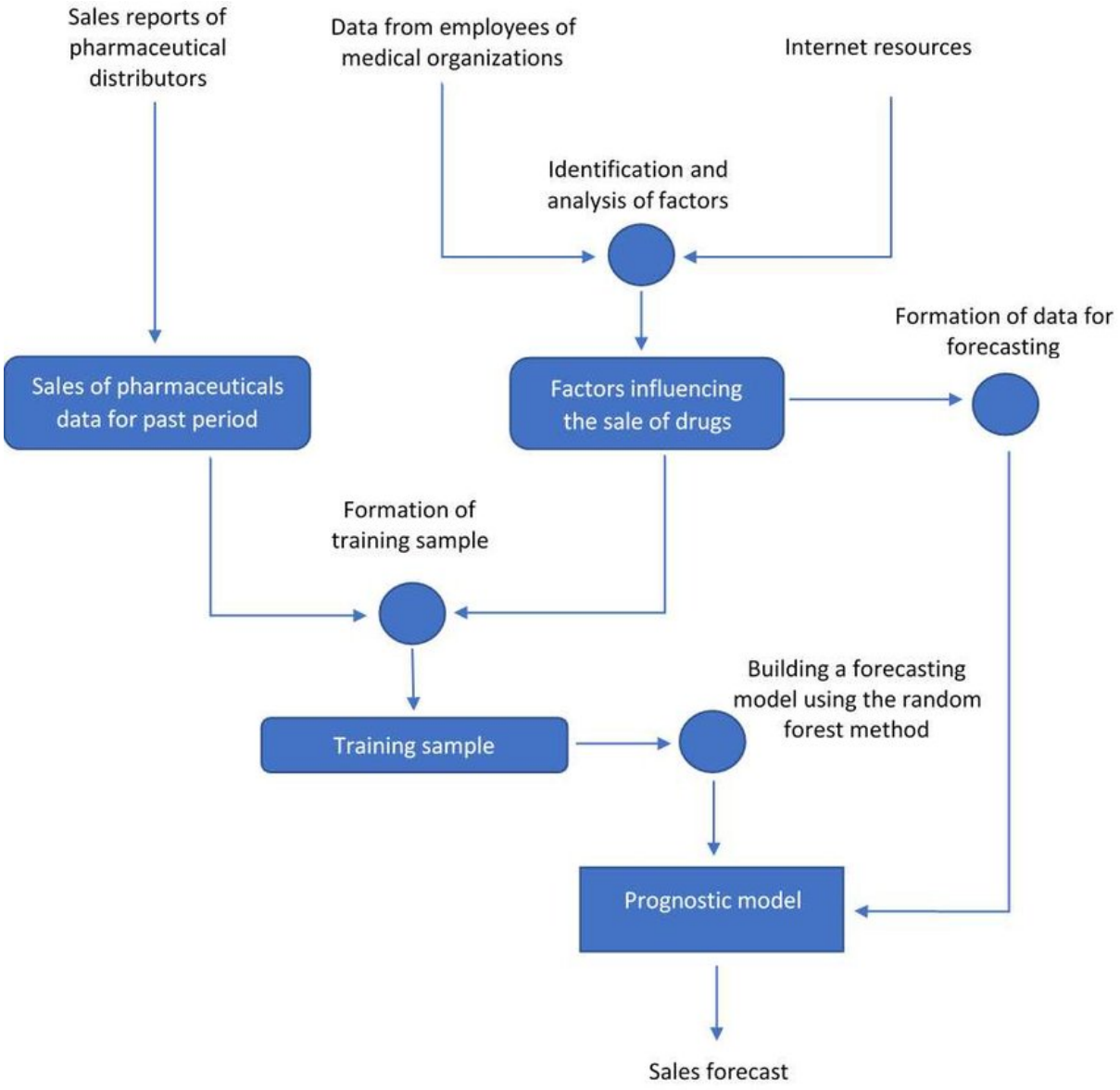
Potential benefits for pharmaceutical companies are immense - according to the Pharmaceutical Logistics Market Size Report from Grand View Research, the global pharmaceutical logistics market size was valued at USD 73.3 billion in 2020 and was expected to expand at a compound annual growth rate (CAGR) of 8.5% from 2021 to 2028.

With vast amounts of data gathered, stored, and analyzed, each improvement achieved through the implementation of RPA in that field can bring fast ROI and strengthen the company's market position.

More accurate drug sales forecasting with RPA

In many cases, forecasting methods used by most industries are ineffective for pharmaceutical companies, especially in cases when they do not have a large sample of historical data available. As stated in the “Model of medicines sales forecasting article from Journal of Physics by A. G. Kravets, lacking historical data for some drugs occurs when they are constantly replaced by analogs or are updated to enhance pharmacological effects or eliminate side effects.

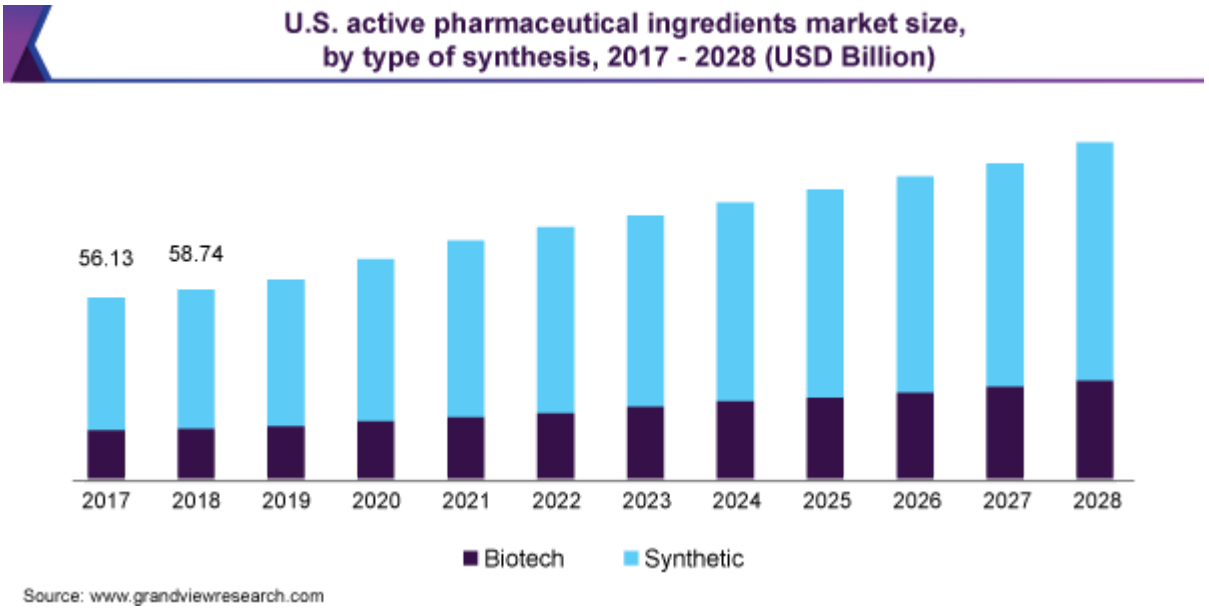
A suggested solution is to “build a model for forecasting sales of pharmaceuticals using one of the methods of machine learning, taking into account the constant updating of medicines and the lack of sufficient data on past sales of preparations of each kind”. An example of an algorithm of the forecasting method was suggested by authors in this article:



The use of RPA software, integrated with artificial intelligence (AI), allows predicting future sales accurately by automating tasks related to data gathering, manipulation, presentation, and, with proper implementation, also analysis. This way data from various sources, including old legacy systems that cannot be easily integrated with new, cloud-based solutions, can be quickly obtained and processed, allowing accurate drug sales forecasting.

Optimizing supplier onboarding with robotic process automation

Many drug manufacturers decided to extend their supply chains and diversify their network of suppliers globally, in reaction to multiple disruptions in existing supply networks. According to a BCC Publishing report, the global market for active pharmaceutical ingredients (APIs) was expected to grow from $135.4 billion in 2020 to $173.3 billion by 2025, with most of them being produced in Europe, followed by India and China. Looking for and onboarding new suppliers is especially important to US-based pharmaceutical companies, as according to a cited report, nearly “88% of active pharmaceutical ingredients for drugs that are sold in the US are not made in the US”. It will be crucial to diversify, as estimations by Grand View Research show that US market for active pharmaceutical ingredients (APIs) will be constantly growing:



As a process, supplier onboarding includes collecting the information and data required to set up an organization as an approved supplier/vendor, with many of them being processed manually. Supplier onboarding for pharmaceutical companies also requires validation to ensure the potential supplier is compliant with industry regulations and corporate standards.

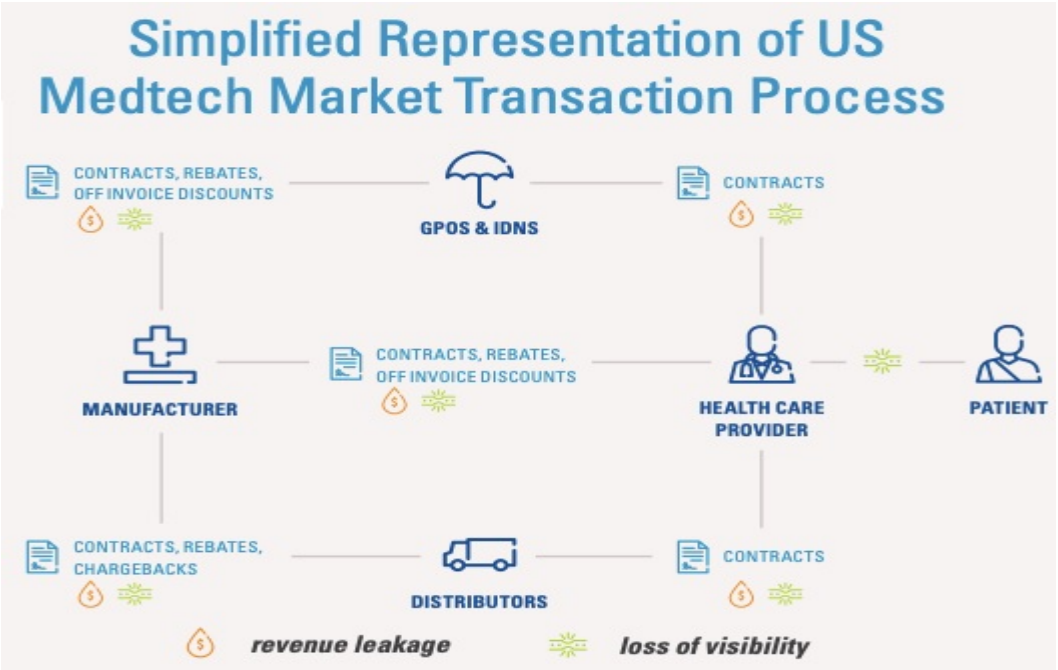
Robotic process automation has the potential to speed up the supplier onboarding process on many stages, including:

- supplier research - based on determined conditions, RPA can search and list potential candidates,
- approval and invite - if a candidate is accepted by the user, the software can create and send invites,
- supplier registration - reviewing data provided by the supplier, completing a pass/fail assessment, updating status,
- finance/supplier activation - after activation (manual or automated) RPA can create a vendor master in ERP and send relevant data to other systems if needed.

Rebate and chargeback processing with RPA

According to ZS Researchers, based on Health Industry Insights report, it is estimated that pharmaceutical companies collectively **lose more than $15 billion in bottom-line revenue** due to duplicate rebates, misuse of copay benefits, and chargebacks abuse.

To show how complex and error-prone market transaction process is, we can use and example from US market, described by at modeln.com:



A key factor for investigating suspicious sales, rebates, and chargebacks is access to clean and well-organized data, and robotic process automation is the perfect solution to assure required transparency and accuracy. With the use of RPA, data from various sources are collected, stored and easily accessible, assuring also cross-comparable formatting with proper implementation.

To use rebate validation and payment process as an example, there are certain steps that are obligatory:

- collecting PBM-rebate invoices,
- reviewing claim-detail data,
- validating claims,
- paying approved claims,
- specifying the reason for rejection for invalid claims,
- returning claims to the PBM.

Frequently in the case of many pharmaceutical companies, on each of those steps, some manual tasks can be identified and potentially automated, speeding up the process and mitigating risks related to mistakes in data collection and processing.

Other common applications of RPA software in pharmaceutical companies

Robotic Process Automation has the potential to be applied to multiple processes carried out by a company, from very simple tasks (generating an automatic response) to more complex activities. Such flexibility allows this software to be implemented in basically any department within the company, where repetitive tasks are performed.

Most frequently described use cases of RPA include:

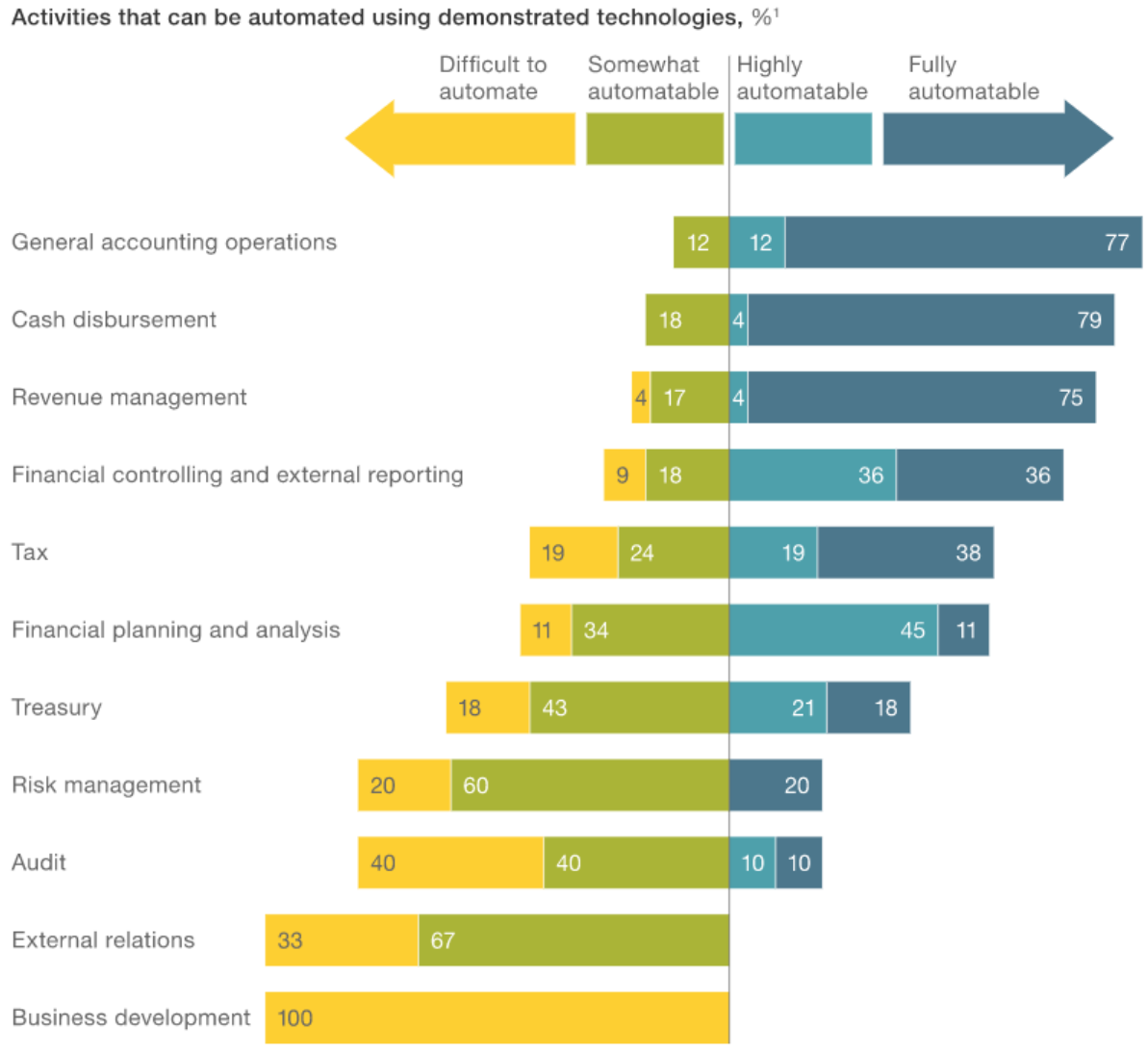
Administration, tax, and finance department:

- accounts payable,
- payment processing,
- bank reconciliation,
- tax reporting.

Human resources department:

- travel and expense management,
- employees master data management,
- time record validation.

Financial and accounting operations are especially good candidates for automation, as they are largely rule-based, very manual, and virtually always carried out within IT systems. This is confirmed by the 2019 McKinsey report, pointing out various business areas and their potential for business process automation:



[1]Proportion of tasks. Figures may not sum to 100%, because of rounding.

Importance of RPA implementation strategy for a pharmaceutical company

RPA implementation should be able to provide gains across all company metrics. To assure that it is crucial to have an implementation strategy and a good understanding of the process.The validation stage allows companies to choose tasks that are not too complex, as those sometimes are better handled by humans. It is also important to ensure that bots are designed in an ideal way to use for that specific process.The best way to develop and implement a strong, futureproof RPA bot is to utilize the services of experienced developers and business-focused individuals from a firm like GGS IT Consulting.

To use the benefits of RPA within company existing systems, GGS IT Consulting consultants follow a few key steps:

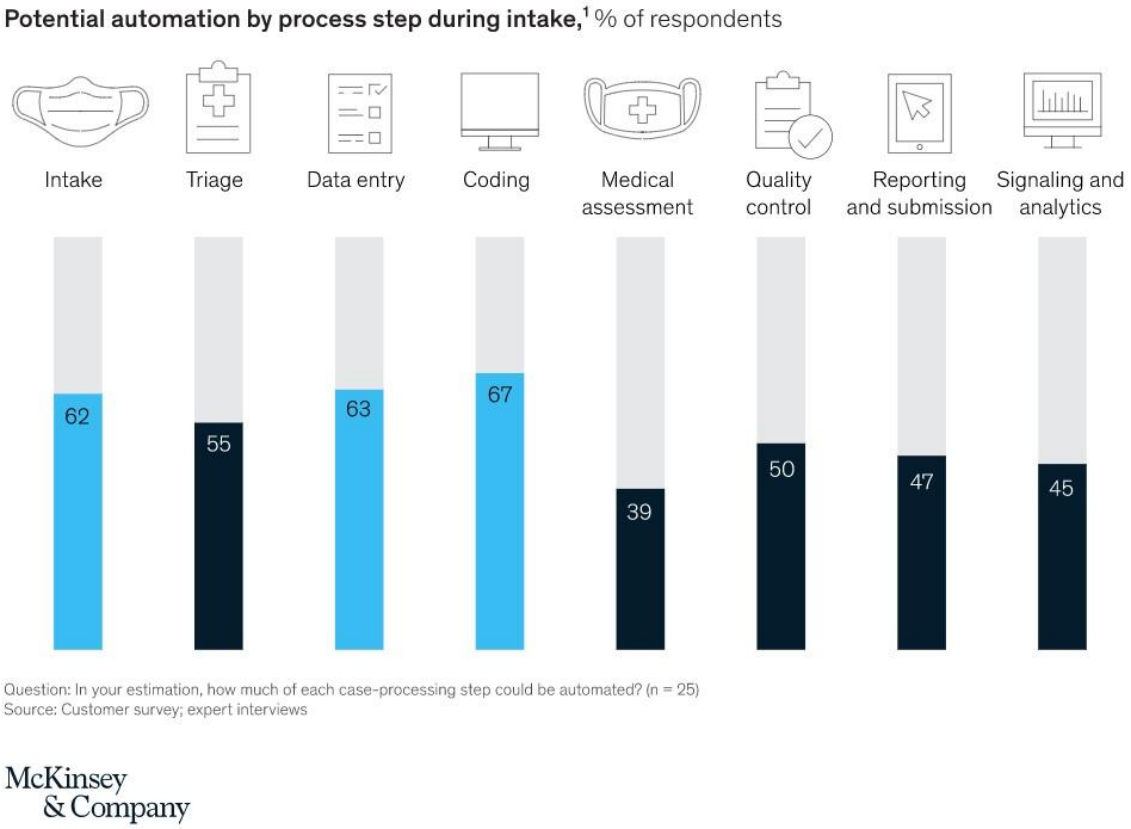
1. Identifying an ideal process for RPA.
2. Analyzing the process, business legitimacy, and expected returns with the client business team.
3. Preparing estimation and overall scope of the work, as well as analyzing process exceptions and preparing an as-is process map.
4. Proceeding into the development phase in close cooperation with the company's IT department - creating a task backlog, developing a detailed and thorough implementation plan, beginning bot development, and starting to prepare the Solution Design Document (SDD).
5. After clients accept the RPA implementation at this point, our team revisits the pilot and fixes bugs or other issues accordingly.
6. We'll then begin User Acceptance Testing (UAT), which will involve the business as a whole, the IT department, and our RPA developer. This phase requires conducting a variety of acceptance tests through the client's environment.
7. After implementation of any necessary changes, developed, the final bot is moved into the production environment and training end-users begins.

Beyond implementation, we'll work to support the company team through the transition and offer solutions and tech support in case there are any issues in the future.

If you are unsure if robotic process automation is right for your business, get in touch with one of our consultants. Book a free, 30 minutes consultation and we will break down how well RPA solutions fit into your company specifics.You can also learn more about how long each implementation step takes and which process can be automated in our step-by-step guide to robotic process automation cost of integration.

What is the future of automation in the pharmaceutical industry?

Automation is already transforming the pharmaceutical industry in areas such as product development and real-time monitoring. Many companies are increasingly turning to Robotic Process Automation as a solution allowing them to boost productivity, quality, operational efficiency, and customer satisfaction. According to McKinsey's analysis, the industry is “at the point where it can wholeheartedly embrace automation. Automation has grown beyond specific applications delivering incremental efficiency gains; it is a way for a company to change its competitive positioning.” According to this analysis, a good example can be the regulatory and pharmacovigilance area, in which a “one-solution-fits-all approach has evolved to a more refined perspective of the specific steps in regulatory submission and end-to-end labeling that can be automated”. According to expert interviews and customer surveys by McKinsey, between 40 to 70% of manual case-processing steps are expected to be automated:



The focus on digitization and automation of processes in pharmaceutical companies will be a future competitive advantage. To achieve maximum efficiency and effectiveness of digital transformation companies will have to focus on implementation plans and strategies.

How can we help pharmaceutical companies in Robotic Process Automation?

With our experience from working on complex projects, as RPA consultants we are able to guide a company through the entire process of RPA implementation, from creating a strategy, discovering processes, designing optimal configuration, testing, up to full-scale use, and effectiveness monitoring.

Auxiliobits Consulting experts can support pharmaceutical enterprises in starting digital transformation:

- defining strategy,
- analyzing, understanding, and documenting business processes,
- setting up operating models,

- identifying technical infrastructure requirements to deploy automation solutions,
- educating employees and helping to create an “RPA-friendly” environment, where each team member looks for more automation opportunities to support company transformation,
- creating and documenting test scenarios and procedures to ensure optimal configuration,
- training team members in the building, operating, and maintaining automation solutions,
- helping to solve issues that arise in day-to-day operations with RPA software,
- further support of the implementation of any type of automation technologies by the company,
- helping to plan and set up Centers of Excellence or Process Mining Hubs, to boost up automation efforts.