

# Topic 2

## Robotic Process Automation (RPA)

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AI HUMAN INTERFACE



# Learning Outcomes

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- ❑ Understand the concept of Robotic Process Automation
- ❑ Understand different RPA tools
- ❑ Apply RPA to solve some repetitive task

# What is Robotic Process Automation (RPA)

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- Robotic process automation (RPA) is the use of software with artificial intelligence and machine learning techniques to handle **high-volume, repetitive tasks** that previously require human to perform. These tasks can include queries, calculations, and maintenance of records and transactions.
- RPA technology, sometimes called software robot, mimics a human worker, log into application, enter data, calculate and complete task, and log out.
- RPA software is not part of a company's IT infrastructure. It enables company to implement its technology quickly and efficiently – without changing the existing infrastructure and system.

# Evolution of RPA

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- Although the term “RPA” can be traced back to the early 2000s, it has been developed for a number of years previously.
- RPA evolved from three key technologies: **screen scraping, workflow automation and artificial intelligence.**
- Screen scraping is the process of collecting screen display data from a legacy application so that the data can be displayed by a more **modern user interface.**

# Evolution of RPA (cont.)

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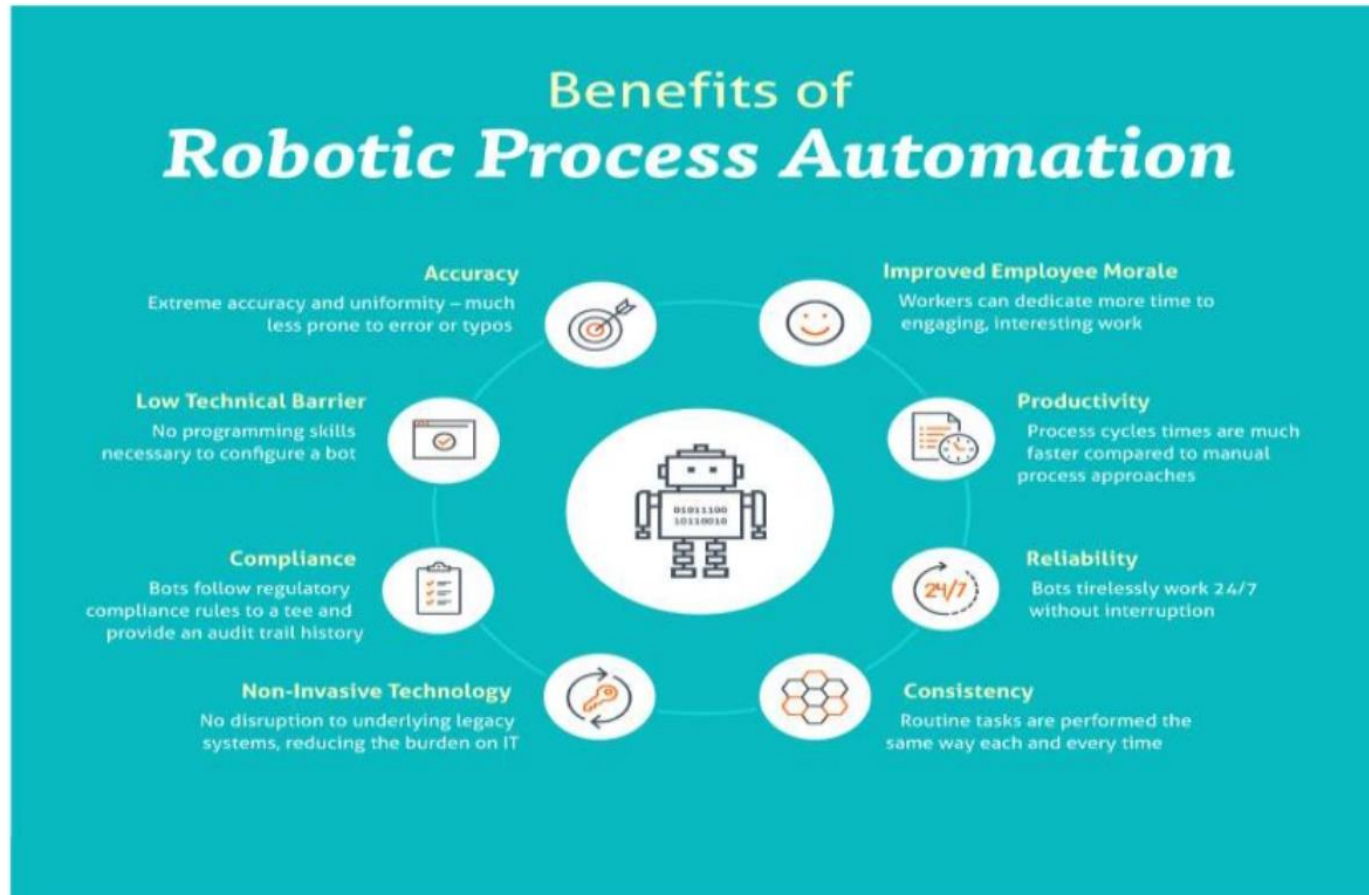
- The advantages of workflow automation software, which eliminates the need for manual data entry and increase order fulfillment rate, include increased speed, accuracy and efficiency.
- Lastly, artificial intelligence involves the ability of computer system to perform tasks that normally requires human intervention and intelligence.

# Benefits of RPA

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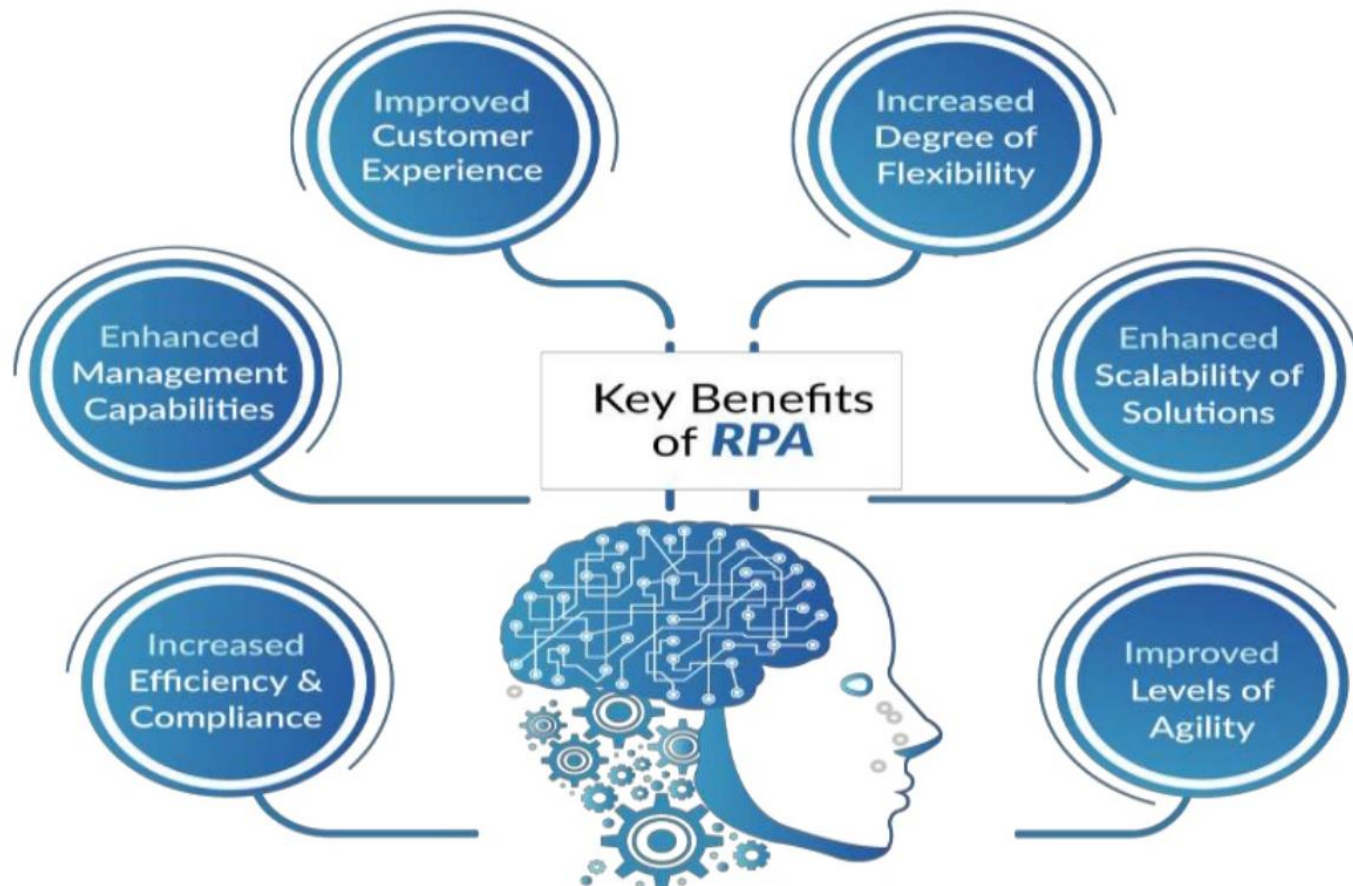
- Robotic process automation technology can help organizations on their digital transformation journeys by:
  1. Enabling better customer service
  2. Ensuring business operations and processes comply with regulations and standards.
  3. Allowing processes to be completed more rapidly.
  4. Providing improved efficiency by digitizing and auditing process data.
  5. Creating cost saving for manual and repetitive tasks.
  6. Enabling employees to be more productive.

# Benefits of RPA (Employee's perspective)



# Benefits of RPA (Organization's perspective)

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# Applications of RPA

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Some of the top applications of RPA include:

- **Customer Service:** RPA can help company offer better customer service by automating contact center tasks, including verifying e-signatures, uploading scanned documents and verifying information for automatic approvals or rejections.
- **Accounting:** Organizations can use RPA for general accounting, operational accounting, transactional reporting and budgeting.
- **Financial Services:** Companies in the financial services industries can use RPA for foreign exchange payments, automating accounts opening and closing, managing audit requests and processing insurance claims.

# Applications of RPA (cont.)

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- **Healthcare:** Medical organizations can use RPA to handle patient records, claims, customer support, account management, billing, reporting and analytics.
- **Human resources:** RPA can automate HR tasks, including onboarding and offboarding, updating employee information, and timesheet submission processes.
- **Supply chain management:** RPA can be used for procurement, automating order processing and payments, monitoring inventory levels and tracking shipment.

# Business Processes in which RPA can be used

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Take over repetitive tasks that employees carry out **50-60** times a day



Periodic reporting, data entry and **data analysis**



**Mass email** generation, archiving, extracting



**Conversion** of data formats and graphics



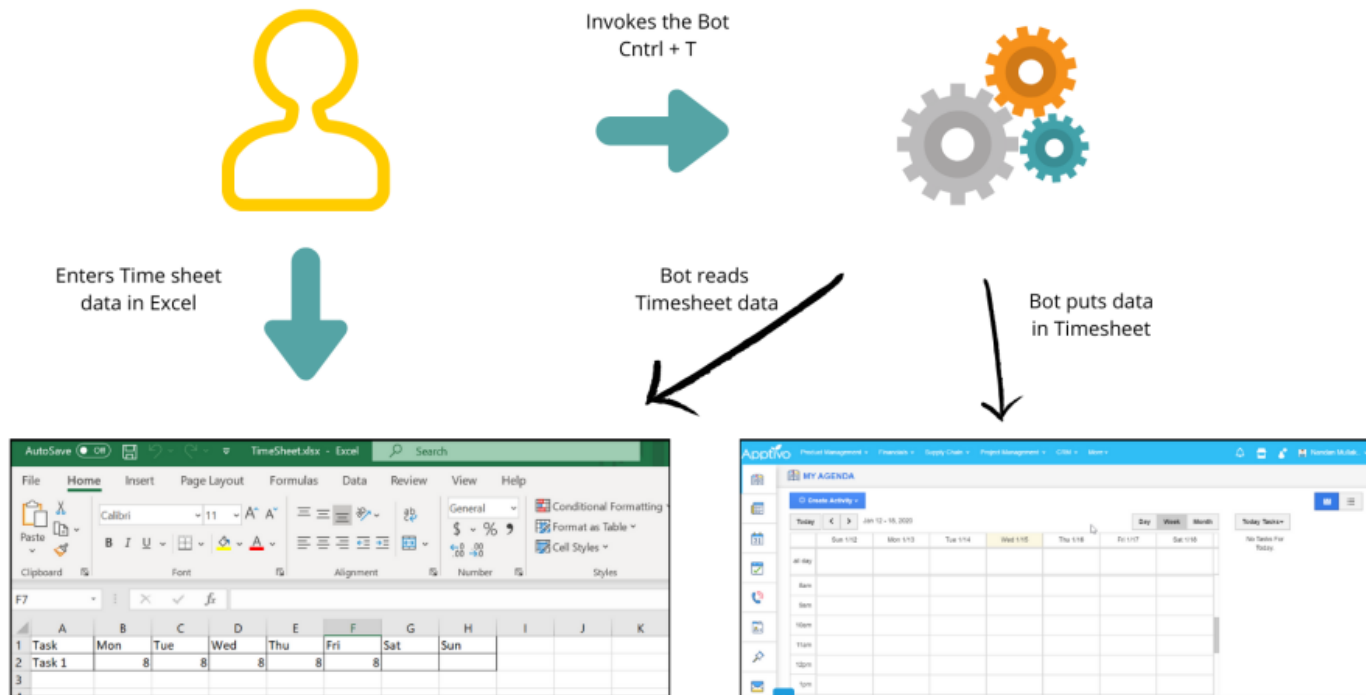
**ERP** transactions



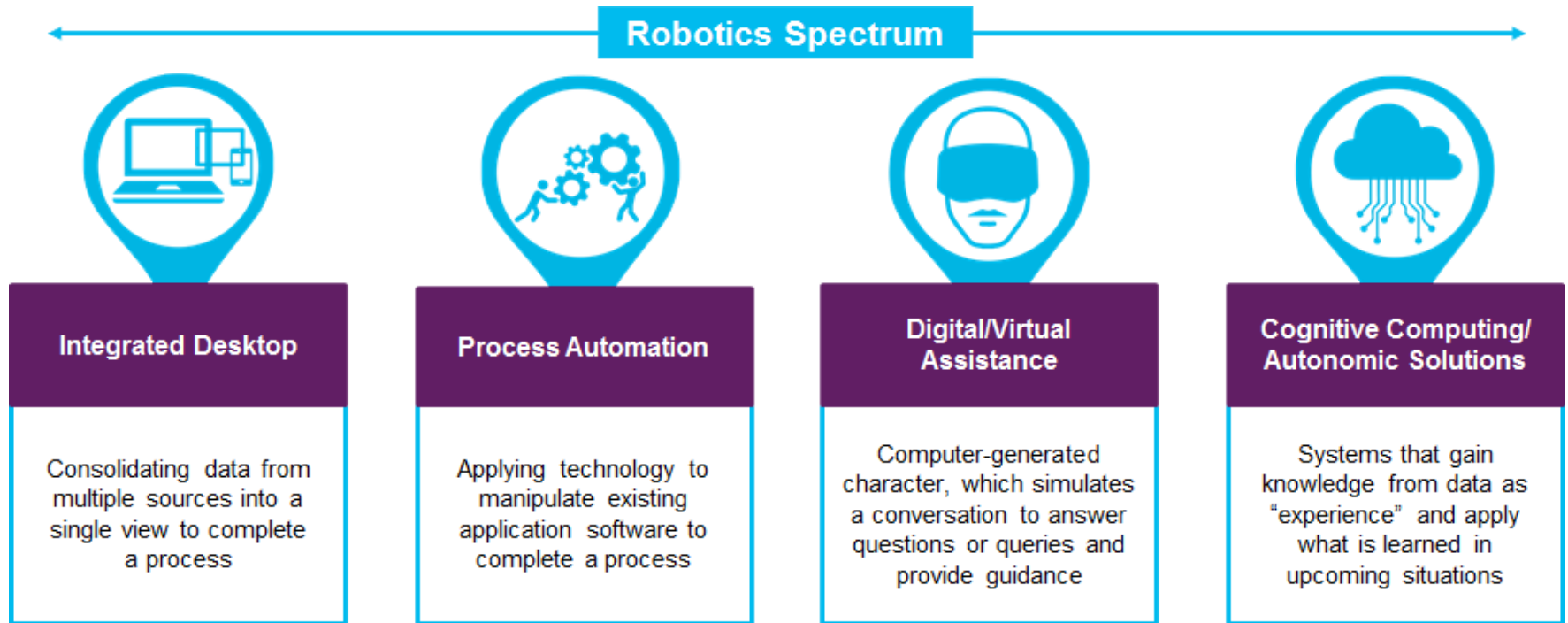
Process lists and **file storage**

Source: <https://www.uipath.com/blog/the-robotic-process-automation-infographic>

# Example of RPA application



# Robotic Spectrum



Source: Accenture

# Differences Between RPA and Regular Automation

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- What distinguishes RPA from traditional IT automation is the ability of RPA software to be **aware** and **adapt** to changing circumstances, exceptions and new situations.
- Once RPA software has been trained to capture and interpret the actions of specific processes in existing software applications, it can then manipulate data, trigger responses, initiate new actions and communicate with other system **autonomously**.

# Differences Between RPA and Regular Automation

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- RPA software is particularly useful for organizations that have many **different and complicated systems** that need to interact together fluidly.
- For instance, if an electronic form from a HR system is missing a zip code, traditional automation software would flag the form as having an exception and an employee would handle the exception by looking up the correct zip code and entering it on the form. Once the form is complete, the employee might send it on the payroll so the information can be entered into the organization's payroll system.
- With RPA technology, however, software that has the ability to **adapt**, **self-learn** and **self-correct** will handle the exception and interact with the payroll system without human assistance.

# Top RPA Vendors

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- **Automation Anywhere Inc.** provides an enterprise digital workforce platform geared towards procure-to-pay, quote-to-cash, HR, claims processing and other back-office processes.
- **Blue Prism** focuses on providing organizations in regulated industries with more agile virtual workforce, offering desktop-aligned robots that are defined and managed centrally.
- **EdgeVerve Limited**, an Infosys company, helps enterprises modernize customer service, improve business processes and enhance operational productivity.



# Top RPA Vendors

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- **HelpSystems** enables companies to streamline IT and business operations by automating tasks and workflows without the need to write codes.
- **UiPath** offers an open platform to help organizations efficiently automate business processes.
- **Workfusion** combines robotics, AI-enabled cognitive automation and workforce orchestration to automate enterprise business processes.

# What to look for in RPA software

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When enterprise leaders look for RPA technologies, they should consider a number of factors, including:

- **Scalability:** Organizations should not select RPA software that requires them to deploy software robots to desktops or virtualized environment. They should look for RPA platforms that can be centrally managed and scaled massively.
- **Speed:** Enterprises should be able to design and test new robotic processes in a few hours or less, as well as optimize the bots to work quickly.
- **Reliability:** as companies launch robots to automate hundreds or thousands of tasks, they should look for tools with built-in monitoring and analytics that enable them to monitor the system health.

# What to look for in RPA software (cont.)

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- **Simplicity:** Organizations should look for products that are simple enough that any employee in the business can build and use them to handle various types of work, including collecting data and turning content into information that enables leaders to make the best business decisions.
- **Intelligence:** The best RPA software can support simple task-based activities, read and write to any data sources, and take advantage of more advanced learning to further automations.
- **Enterprise-class:** Companies should look for tools that are built from the ground up for enterprise-grade scalability, reliability and manageability.

# Where the RPA market is heading

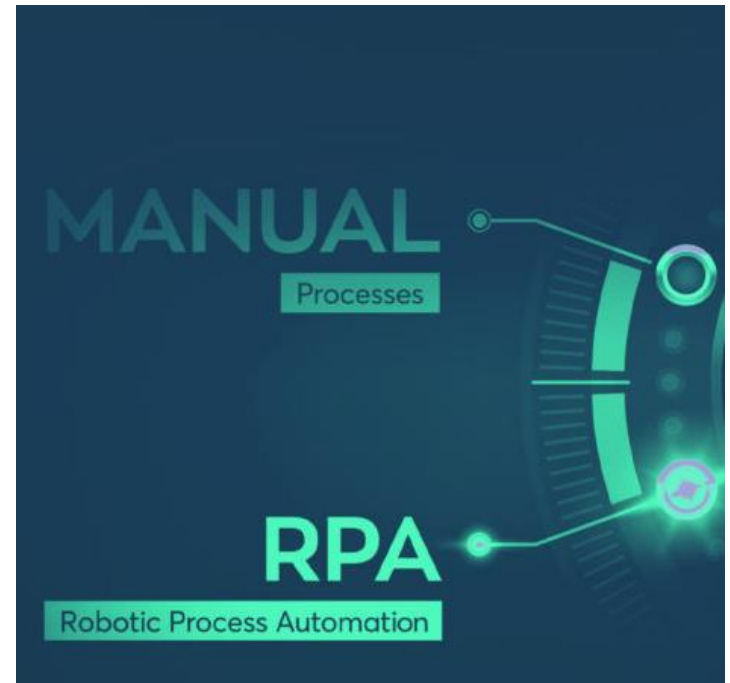
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- A Global Market Insight report expects the RPA market to reach **\$5 billion by 2024**.
- Gartner estimates that by the end of 2022, **85%** of large and very large organizations will have deployed some form of RPA software.
- The increased adoption of RPA technologies by organizations to enhance their capabilities and performance and boost cost savings will reportedly drive the growth of the robotic process automation market during that time.

# Top 5 RPA Trends

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- #1 Advancement in AI and ML
- #2 RPA integration with other tools
- #3 Elevation of Chatbots
- #4 RPA Implementations



# Advancement in AI and ML

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- RPA is a digital workforce of Machine Learning and Artificial Intelligence.
- RPA helps in providing solutions to natural language voice recognition, image recognition and fuzzy logic.
- AI and ML are two cognitive technologies that can increase the ROI of an enterprise.



# RPA Integrations with other tools

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- Create of Excellence is one of the most successful implementations of RPA initiatives.
- It is accountable for classifying, distributing and practicing innovations in RPA.



# Elevation of Chatbots

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- The demand of chatbots and voice enabled processes is increased due to the rise in customer's conversational interface usage.
- The growth of chatbots has enhanced the use of cognitive technologies.
- Chatbots in the customer service segment is expected to be the fastest growing market segment during forecast period 2019-2026 with a CAGR of 31.6%





# RPA Implementation

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- Cognitive Automation using AI/ML
- Bot Development
- Workflow Orchestration and Governance
- Rollout Validation and Planning
- Business Continuity and Scaling



# RPA tools in this course

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## Automating Processes using TagUI Tool (open-source RPA)



AI SINGAPORE

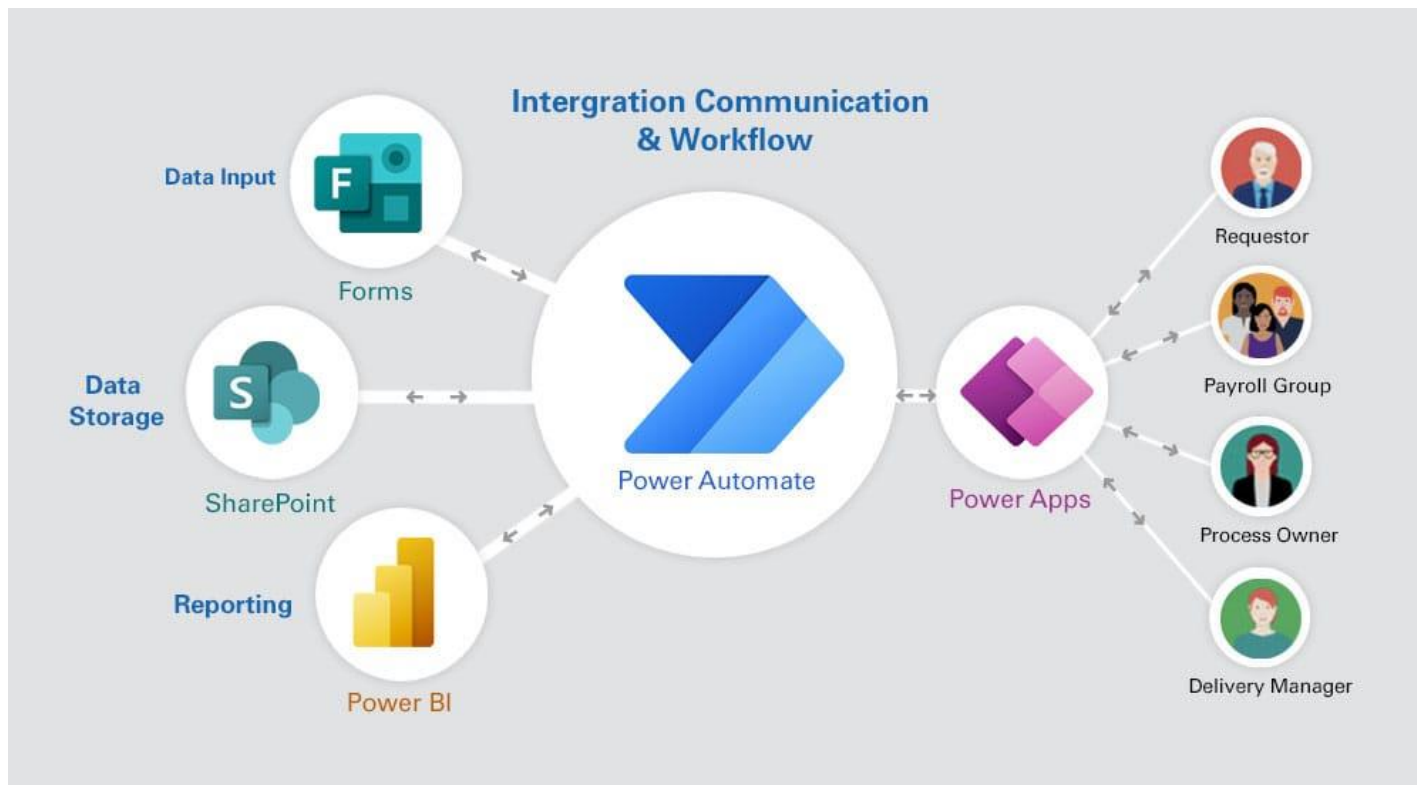
# TagUI

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- Free RPA tool developed by AI Singapore, a government-funded program to accelerate AI.
- Write flows in simple TagUI language and automate away repetitive time-consuming tasks on your computer. The TagUI project is **open-source and free forever**. It's easy to setup and use, and works on Windows, macOS and Linux. Besides English, flows can be written in 22 other languages, so you can do RPA using your native language.

# RPA tools in this course

## Microsoft Power Automate



# Power Automate

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- Microsoft Flow is a cloud-based system with which you can create automated workflows and, thus, simplify business processes and manage them more effectively.
- Microsoft Flow is a tool which anybody can use and integrate into their 365 Microsoft office package. Besides being a business process management platform which automates repetitive tasks and simplifies their execution on behalf of employees, it also provides additional advantages.
- You can easily integrate it with other applications, share and access business data, and prioritize tasks for employees.

# Summary

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- Robotic Process Automation (RPA) is the use of software robots to perform simple, repetitive tasks.
- To make RPA implementation success, make sure you are selecting the right tools and process.
- It is very important to set the right expectations.