

Title: Intelligent automation

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Intelligent automation (IA), or intelligent process automation , is a software term that refers to a combination of artificial intelligence (AI) and robotic process automation (RPA). [1] Companies use intelligent automation to cut costs and streamline tasks by using artificial-intelligence-powered robotic software to mitigate repetitive tasks. [1] As it accumulates data, the system learns in an effort to improve its efficiency. [2] Intelligent automation applications consist of but are not limited to, pattern analysis, data assembly, and classification. [2] The term is similar to hyperautomation , a concept identified by research group Gartner as being one of the top technology trends of 2020. [3]

Technology

Intelligent automation applies the assembly line concept of breaking tasks into repetitive steps to improve business processes. [4] Rather than having humans do each step, intelligent automation can replace steps with an intelligent software robot or bot, improving efficiency. [5]

Applications

The technology is used to process unstructured content. Common real-world applications include self-driving cars, self-checkouts at grocery stores, smart home assistants, and appliances. [6] Businesses can apply data and machine learning to build predictive analytics that react to consumer behavior changes, or to implement RPA to improve manufacturing floor operations. [6]

For example, the technology has also been used to automate the workflow behind distributing Covid-19 vaccines. Data provided by hospital systems' electronic health records can be processed to identify and educate patients, and schedule vaccinations. [7]

Intelligent Automation can provide real-time insights on profitability and efficiency. However in an April 2022 survey by Alchemmy , despite three quarters of businesses acknowledging the importance of Artificial Intelligence to their future development, just a quarter of business leaders (25%) considered Intelligent Automation a “game changer” in understanding current performance. 42% of CTOs see “shortage of talent” as the main obstacle to implementing Intelligent Automation in their business, while 36% of CEOs see ‘upskilling and professional development of existing workforce’ as the most significant adoption barrier. [8] [9]

IA is becoming increasingly accessible for firms of all sizes. With this in mind, it is expected to continue to grow rapidly in all industries. [10] This technology has the potential to change the workforce. As it advances, it will be able to perform increasingly complex and difficult tasks. [11] In addition, this may expose certain workforce issues as well as change how tasks are allocated. [12]

Benefits

Streamline Processes

Repetitive manual tasks can put a strain on the workforce, these tasks can be automated to allow the workforce to work on more important matters that require human cognition. [11] Intelligent automation can also be used to mitigate tasks with human error which in turn increases proficiency. [11] This allows the opportunity for firms to scale production without the traditional negative consequences such as reduced quality or increased risk. [12]

Customer Service Improvement

Customers service can be improved drastically, this allows for a competitive advantage for the firm. [12] IA utilizing chat features allows for instant curated responses to customers. [12] In addition, it can give updates to customers, make appointments, manage calls, and personalize campaigns. [10] [11]

Flexibility

Due to the wide range of applications, IA is useful across a variety of fields, technologies, projects and industries. [10] In addition, IA can be integrated with current automated systems in place. [10] This allows for optimized systems unique to each firm to best fit their individual needs. [10]

Capabilities

Cognitive automation : Employs AI techniques to assist humans in decision-making and task completion

Natural language processing : Allows computers to automate knowledge work

Business process management : Enhances the consistency and agility of corporate operations

Process mining : Applies data mining methods to discover, analyze, and improve business processes

Intelligent document processing : Utilizes OCR and other advanced technologies to extract data from documents and convert it into structured, usable data

Computer vision : Allows computers to extract information from digital images, videos, and other visual inputs

Integration automation : Establishes a unified platform with automated workflows that integrate data, applications, and devices.

See also

Robotic process automation

Artificial intelligence

Automation

References

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