What Is Cognitive Automation?

Cognitive automation is also known as smart or intelligent automation is the most popular field in automation.

Automation is as old as the industrial revolution, digitization has made it possible to automate many more activities.

Robotics, also known as robotic process automation, or RPA, refers to the hand work – entering data from one application to another.

Cognitive automation refers to the head work or extracting information from various unstructured sources.

The initial tools for automation include RPA bots, scripts, and macros focus on automating simple and repetitive processes.

The majority of core corporate processes are highly repetitive, but not so much that they can take the human out of the process with simple programming.

As processes are automated with more programming and better RPA tools, the processes that need higher-level cognitive functions are the next we'll see automated.

In 2017, the largest area of AI spending was in cognitive applications. This

included applications that automate processes to automatically learn, discover, and make predictions are recommendations.

Cognitive software platforms will see Investments of nearly 2.5 billion dollars this year. spending on cognitive related IT and business services will reach more than 3.5 billion dollars.

Cognitive automation learns at least in part by association. It takes unstructured data and builds relationships to create tags, annotations, and other metadata.

It seeks to find similarities between items that pertain to specific business processes such as purchase order numbers, invoices, shipping addresses, liabilities, and assets.

It uses questions, such as:

- Have I seen this before?
- Who are what is involved?
- Is this connected to something I've seen before?
- How strong is that connection?
- What was done in a similar situation?

Compared to other types of artificial intelligence, cognitive automation has a number of advantages.

Cognitive automation solutions are pre-trained to automate specific business processes and require less data before they can make an impact.

They don't need help from it or data scientist to build elaborate models and are intended to be used by business users and be up and running in just a few weeks.

As new data is added to the cognitive system, it can make more and more connections allowing it to keep learning unsupervised and making adjustments to the new information it is being fed.

> *Cognitive automation, unlike other types of artificial intelligence, is designed to imitate the way humans think.*

How Cognitive Automation is Different from RPA

Both RPA and cognitive automation allow businesses to be smarter and more efficient.

They represent two ends of the intelligent automation continuum. There are three key differences between technologies.

Varied Application Scope

With RPA, structured data is used to perform monotonous human tasks more accurately and precisely. Any task that is real base and does not require cognitive thinking or analytical skills can be handled with RPA.

Generally speaking, RPA can be applied to 60% of a business's activities. In banking and finance, RPA can be used for a wide range of processes such as Branch activities, underwriting and loan processing, and more.

With it, Banks can compete more effectively by increasing productivity, accelerating back-office processing and reducing costs.

The remaining 40% of tasks involve massive amounts of data and require human cognitive capabilities such as continuous learning, making decisions based on context, understanding complex relationships and engaging in conversation.

Cognitive automation comes in to address these issues using specific techniques that mimic the way humans think to perform the non-routine tasks. It analyzes complex and unstructured data to enhance performance and human decision-making.

Different Underlying Technologies, Methodologies, and Processing Capabilities

RPA relies on basic technology that is easy to implement and understand including workflow Automation and macro scripts. It is rule-based and does not require much coding using an if-then approach to processing.

Cognitive automation, however, uses a knowledge-based approach.

Using complex and advanced technologies such as text analytics, data mining, semantic technology, machine learning, and natural language processing, it makes more intuitive judgments and perceptions on how humans converse and defines rules to determine the optimal solution for all situations.

Distinctive Benefits

With RPA, businesses can support innovation without having to spend a lot of money on testing new ideas.

It provides additional free time for employees to do more complex and cognitive tasks and can be implemented quickly as opposed to traditional automation systems.

It increases staff productivity and reduces costs by taking over the performance of tedious tasks.

For instance, the call center industry routinely deals with a large volume of repetitive monotonous tasks that don’t require decision-making capabilities. With RPA, they automate data capture, integrate data and workflows to identify a customer and provide all supporting information to the agent on a single screen.

Agents no longer have to access multiple systems to get all of the information they need resulting in shorter calls and improve customer experience.

Cognitive automation offers cognitive input to humans working on specific tasks adding to their analytical capabilities.

Because it forms new connections as new data is added to the system, it continually learns and adjusts to the new information.

For instance, in the healthcare industry, cognitive automation helps providers better understand and predict the impact of their patients health.

Cognitive automation can perform high-value tasks such as collecting and interpreting diagnostic results, suggesting database treatment options to physicians, dispensing drugs and more. This improves both patient and business outcomes.

What Cognitive Automation Can Do

Natural Language Processing (NLP)

This is a branch of AI that addresses the interactions between humans and computers with natural language.

NLP seeks to read and understand human language, but also to make sense of it in a way that is valuable.

Basic language understanding makes it considerably easier to automate processes involving contracts and customer service.

Optical Character Recognition (OCR)

OCR is the mechanical or electronic conversion of images of typed or handwritten or printed text into machine-encoded text whether from a scanned document, or a photo of a document.

It is widely used as a form of data entry from printed paper data records including invoices, bank statements, business cards, and other forms of documentation.

It is a common method of digitizing printed texts so they can be electronically edited, searched, displayed online, and used in machine processes such as text-to-speech, cognitive computing and more.

Even though there has been a dramatic increase in digitization, we still use a lot of paper, particularly in heavily regulated industries such as banking or healthcare.

Processing the paper is required to automate any process end to end.

Machine Learning

Machine learning is an application of artificial intelligence that gives systems the ability to automatically learn and improve from experience without being programmed to do so. Machine learning focuses on developing computer programs that access data and use it to learn for themselves.

Processes require decisions and if those decisions cannot be formulated as a set of rules, machine learning solutions are used to replace human judgment to automate processes.

Cognitive Automation Applications

In business, there are a number of application areas where cognitive automation is helpful. These include:

Discovering Mismatches Between Contracts and Invoices

It is possible to use bots with natural language processing capabilities to spot any mismatches between contracts and invoices.

When these are found, you are alerted to the issue to make the necessary corrections.

Banking

You can use cognitive automation to fulfill KYC (know your customer) requirements. It’s possible to leverage public records, scans documents, and handwritten customer input to perform your required KYC checks. you can also use it to process trade finance transactions.

Processing international trade transactions require paperwork processing and regulatory checks including sanction checks and proper buyer and seller apportioning.

Insurance

In the insurance industry, cognitive automation has multiple application areas. It can be used to service policies with data mining and NLP techniques to extract policy data and impacts of policy changes to make automated decisions regarding policy changes.

It can also be used in claims processing to make automated decisions about claims based on policy and claim data while notifying payment systems.

When it comes to choosing between RPA and cognitive automation, the correct answer isn't necessarily choosing one or the other.

Generally, organizations start with the basic end using RPA to manage volume and work their way up to cognitive and automation to handle both volume and complexity.

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