aura quantic

Hyperautomation: technology trends

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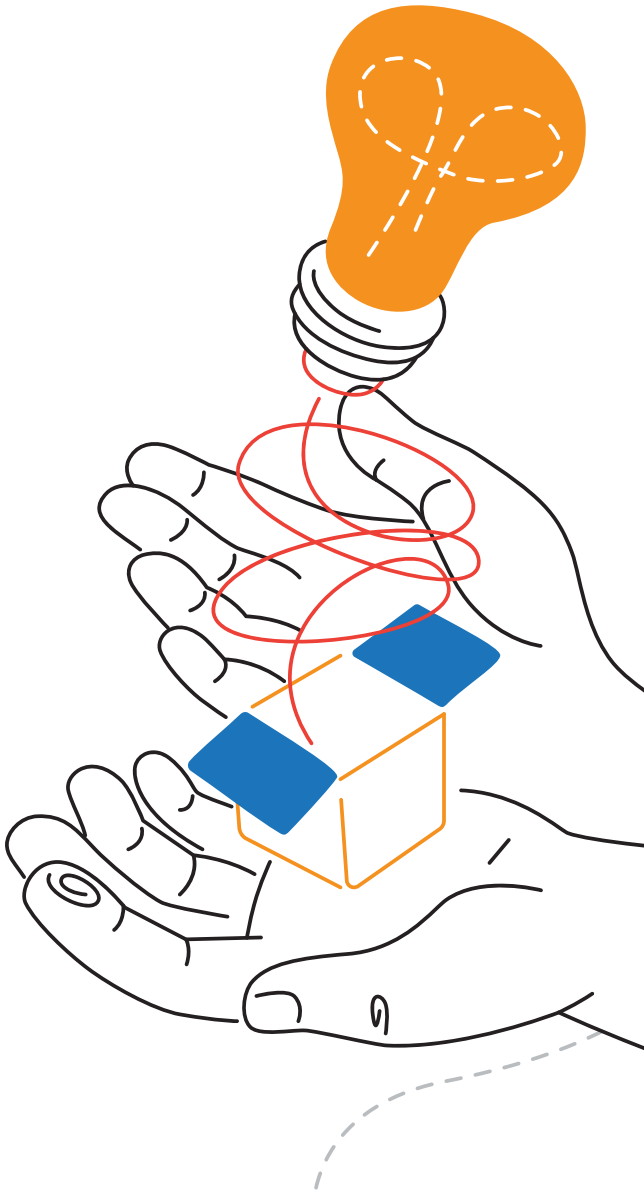
What is hyperautomation?

> “The successful use of software tools to automate business processes as well as eliminating information or functional silos in the system.”

Gartner | Move Beyond RPA to Deliver Hyperautomation, 2019



These tools include the application of advanced technologies, such as Artificial Intelligence (AI), Machine Learning (ML), RPA, BPM, and data mining.

Automating processes is key to keeping organizations competitive. At this point, it can be said that companies that have not started their transformation are falling behind. Those that have already started must continue to review and update their processes in order to continue improving their competitiveness.

What are the predictions?

65%

According to Gartner, “By 2022, 65% of organizations that deployed Robotic Process Automation will introduce Artificial Intelligence, including Machine Learning and Natural Language Processing algorithms.”

When undertaking a hyperautomation project, it is very important to understand the extent of the automation project and to establish a plan. Based on this plan, we will choose the appropriate tools, and the way to combine them to achieve objectives and become more efficient.

Integration between the tools is more critical than ever before. Organizations generate far more unstructured information than structured information: email, messaging, etc. This circumstance compels us to consider automating tasks that we originally believed to be reserved for knowledge workers.

Furthermore, today's environment is highly competitive and ever-changing, which requires organizations to have the necessary tools at hand and empower the workers.

We will therefore need software tools that are easy to use, scalable, and that also have the ability to extract data from the different sources in the software ecosystem.

STRUCTURED DATA

Spreadsheets | CSV files | Databases

SEMISTRUCTURED DATA

Invoices | Purchase orders

Mortgage requests | Contract

UNSTRUCTURED DATA

Email | Images | Voice

Instant messages | Video

Components of hyperautomation

The features of an advanced iBPMS software are key to bringing a plan to fruition. These tools make it easy to get processes up and running and include wizards to simplify integration with other elements in the system. In addition, they offer powerful reporting tools, and track the status of tasks. In short, they offer control of the organization.

One tool, however, is not enough to launch a hyper-automated system. We need a combination of software that take processes a step further, which can eliminate repetitive tasks, or even replace tasks that involve cognitive skills.

The technology involved includes RPA and Artificial Intelligence. Company operations will often require the combination of human skills with those of machines. Machines are very powerful at working with data, but they don't have the decision-making ability that humans have and achieving perfect harmony between the work of machines and people is vital to ensure competitiveness.

Also, Process Mining applications can be used to discover, monitor and improve the processes. There are no fixed solutions, and systems must evolve with the users.

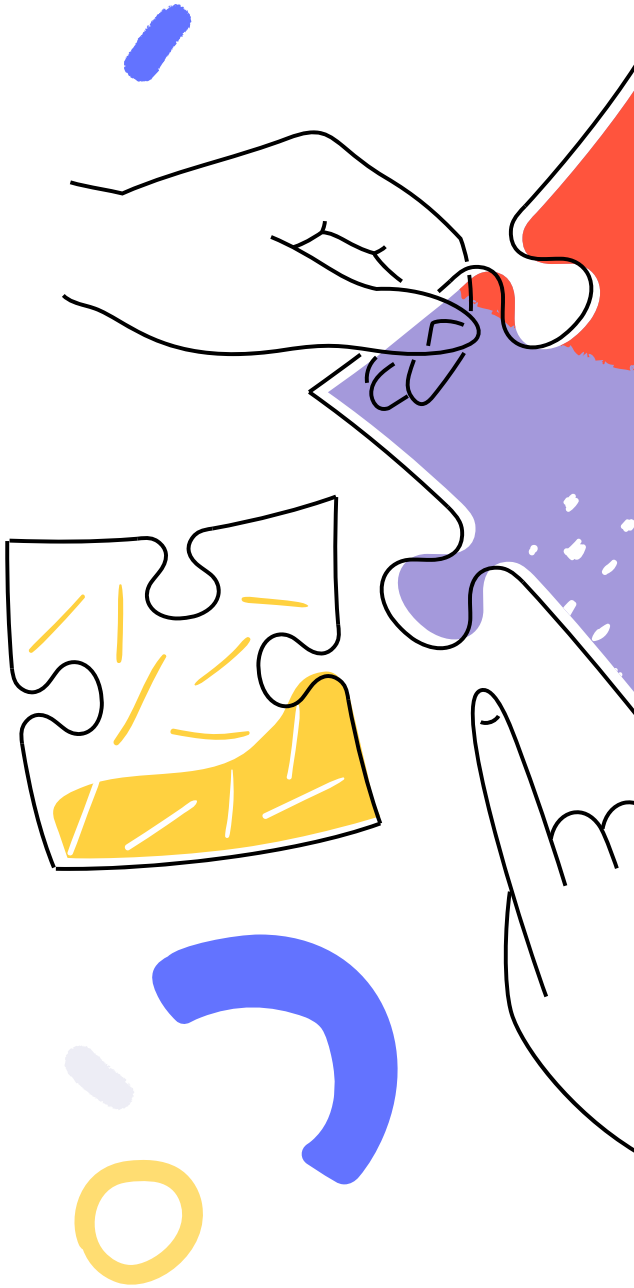
Robotic Process Automation (RPA)

RPA bots are capable of mimicking most human-computer interactions. These skills enable them to perform repetitive tasks faster and more efficiently than the average human.

Currently RPA is being used extensively to integrate with legacy systems that are generating silos of information in the system. RPA technology, upgraded with machine vision techniques, does not require direct access to the database, nor does it need to invoke functions, web services or APIs. It uses the legacy applications' own windows to move between them. And just like a person, it can click on different menu options, enter data or read it. But they are also very useful for "scraping", adding and structuring data.

In general, the processes that can be executed by an RPA should be rule-based and not depend on human judgment. They are initiated in response to a preconfigured event, involve a high volume of work, require coordination of several functions, or have common activities.

An RPA integrated with an iBPMs will provide data or will perform tasks inside the general flow of a more extensive process. For example, in a purchasing process we receive an invoice by email, and later RPA can scan the invoice data, using OCR technology, and place it in a specific folder. If there is a problem, however, it would send a message to a user and that would be the end of the process. This same process modelled with an iBPMS, would even generate a record of the actions that this user performs to solve the issues.



Intelligent Business Process Management Suite (iBPMS)

Intelligent business process management suites (iBPMS) have a more comprehensive concept of process automation than RPA. Unlike RPAs, they do not focus on a specific task but on the set of process tasks. In other words, a task managed by an RPA would be an automatic action that forms part of an iBPMS process.

IBPM software allows companies to model, implement and execute sets of related activities (processes) using business rules. These actions will be executed at both departmental and cross-departmental levels, and if required, they will include external agents: customers, suppliers, etc.

Integration with external systems is accomplished through native connectors that facilitate integrations with products such as Office, SAP, SharePoint, etc. They are very useful for controlling the organization, since they support the entire life cycle of business processes and decisions: discovery, analysis, design, implementation, execution, monitoring and continuous optimization. They incorporate business intelligence tools and provide a natural integration point for advanced analysis and automatic learning.

Moreover, they simplify the development environment, and allow business analysts (citizen developers) to collaborate with the IT team in the software creation process. Creating an application is no longer the exclusive work of the IT department, and teamwork encourages the sharing of business knowledge.

An iBPMS is a better representation of the link between technology and people in comparison to any other software. It facilitates integration with other tools and facilitates the incorporation of new technologies such as RPA and AI within the organization.

TWO

Digital Twin of an Organization

> “A digital twin is a dynamic software model of any organization that relies on operational and/or other data to understand how an organization operationalizes its business model, connects with its current state, responds to changes, deploys resources and delivers expected customer value.”

Gartner | Marc Kerremans and Joanne Kopcho

A digital twin creates a virtual replica of the product, service or process it simulates, which serves as a test bench for combining different technologies and testing new business opportunities or planning future strategies. Ultimately, it will help to customize production to suit on customer requirements.

GARTNER PREDICTS THAT BY

2021

half of large industrial companies will use digital twins, resulting in those organizations gaining a 10% improvement in effectiveness.

THREE

AI techniques in hyperautomation

Machine Learning (ML) and Natural Language Processing (NLP) are rapidly expanding the possibilities of hyperautomation while process mining is contributing significantly in improving business automatisms and discovering other tasks that can be automated.

Machine Learning

Machine Learning is an Artificial Intelligence discipline that creates systems that learn automatically. Automatic learning and data analysis basically make sense of a lot of data. They search through large data sets to detect patterns and based on these patterns they identify key characteristics in order to make a prediction.

For example, if the analysis of historical data reveals that customers with certain behaviors have left the company, customer churn is foreseeable when current customers have the same behavioral patterns.

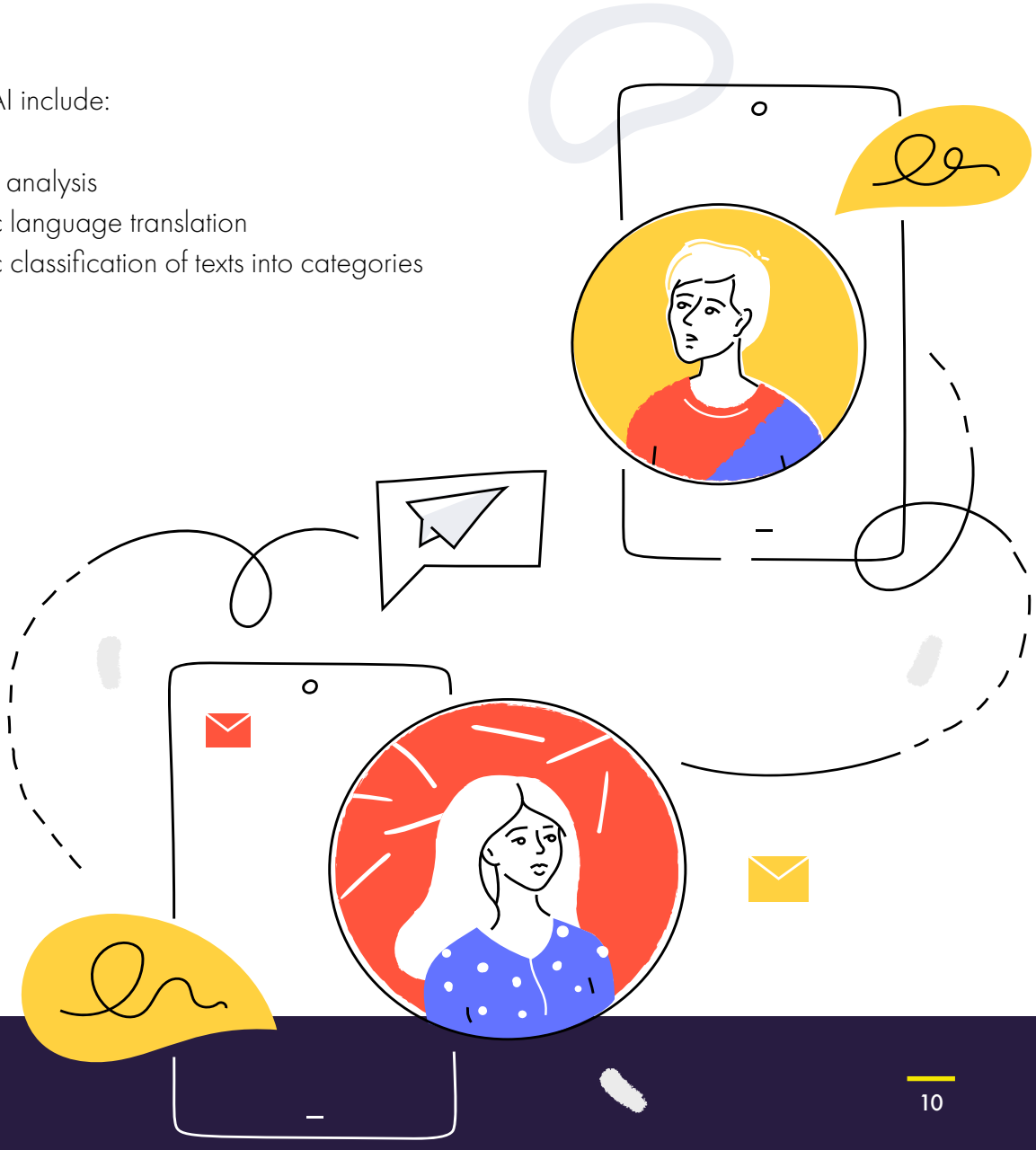
Natural Language Processing (NLP)

Natural language processing (NLP) is adding to the software's ability to understand and interpret human language as it is written or spoken This technology includes chatbots and virtual personal assistants (VPA), which perform tasks previously assigned to people.

For example, they can help a newspaper to better understand the behavior of its readers by analyzing the pages they view and the time they spend reading them. They can also help a law firm answer questions like "In which circumstances did an offense result in a prison sentence?"

Other uses of AI include:

- Sentiment analysis
- Automatic language translation
- Automatic classification of texts into categories



Process mining

Process mining is a process management technique that allows you to analyze business processes from an event log. Specifically, it applies data mining algorithms to the data in the log to identify patterns and trends.

It is also known as "Automatic Business Process Discovery", although there are some authors who separate it as they understand that these techniques would specifically target the discovery phase, while mining would work with both discoveries and process conformity in production.

Event records are already available in systems such as BPM, CRM or ERP and provide us with data such as: task name, executor, start and end date of the activity, etc.

Process mining is the perfect complement for process automation projects as it allows the discovery and identification of repetitive tasks that could be automated.

The following types of process mining can be performed:

DISCOVERY

A technique that takes a log of events and produces a model without relying on any previous information.

COMPLIANCE ANALYSIS

Documentation is compared with the event log to determine if the rules, regulations and execution policies comply with the definitions established in the process.

IMPROVEMENT

Based on an existing process model, information in the event log can be used to optimize the process and discover new tasks that can be automated.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