

POV

Deep Point of View

# Hyperautomation

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## Executive summary

In today's fast-paced business landscape, organizations are under constant pressure to innovate, adapt, and compete to stay ahead of the curve. As a result, automation has become essential to business operations, enabling companies to achieve unprecedented efficiency, agility, and innovation. However, the rapid advancement of technology has given rise to a new approach to automation - **hyperautomation**.

Hyperautomation as a concept has gained popularity in recent years. **Gartner** coined the term in 2019 and listed it as the top strategic technology trend that will drive significant digital disruption and massive opportunities for organizations over the next decade.

Companies refer to hyperautomation as an emerging concept. It is designed to further automate business processes and operations to the point where the system can automatically identify processes that require automation. The system can then deploy bots to perform these repetitive tasks. It uses cutting-edge technologies including artificial intelligence, machine learning, and robotic process automation to automate various business processes.

In this point-of-view document, we will delve into the world of hyperautomation, exploring its various components, benefits, and potential to transform businesses across industries. We will also examine the challenges organizations will face when they adopt this approach and offer recommendations on overcoming them. Whether you are an executive, a delivery head, or an engineer, this document will provide you with the valuable insights needed to succeed in this age of extreme automation.

# Introduction

Organizations are prominently using automation, particularly for repetitive and predictable tasks. And it has rapidly evolved to include more advanced concepts, such as Artificial Intelligence (AI), Machine Learning (ML), and Robotic Process Automation (RPA) to improve process efficiency and reduce costs. The ultimate goal is to automate human decision-making and problem-solving. Despite the potential benefits, the proliferation of multiple automation initiatives has created various complexities. Organizations are introducing frameworks and methodologies to solve the following limitations:

- Identification of the right business processes to automate
- Simultaneous automation of multiple complex processes that require cognitive decisioning
- Execution of processes with unstructured but related data as input, such as images, free text, and binary
- Utilization of transient and interpreted data to propel towards the concept of an intelligent enterprise through autonomous data processing principles

These limitations drove the emergence of hyperautomation. The concept of hyperautomation combines multiple AI-centric advancements, including generative AI, computer vision, Natural Language Processing (NLP), and data intelligence-driven decision management, to deliver outcomes beyond the simple repetitive task automation. A hyperautomation platform will recognize patterns, identify anomalies, and autonomously adapt to new events and changes. These operations allow the tool to provide recommendations and insights of higher value and even cognitively automate tasks of greater complexity.

**Gartner's report** titled "Forecast Analysis: Hyperautomation Enablement Software, Worldwide" states that integrating hyperautomation technologies with the optimized business process will allow organizations to reduce their operational expenses by 30% and human efforts by 20% by 2024. This projection aligns with the growing interest in operational excellence and the evolution of hyperautomation offerings.

Another **Gartner report**, "Predicts 2022: Hyperautomation Demands Adaptive Governance", opines that 56% of organizations are currently involved in between four to ten simultaneous hyperautomation projects. This positive headway presents numerous opportunities for enhancing efficiency, streamlining processes, enabling hybrid work models, and exploring new business opportunities.

# LTIMindtree Crystal insights

As technology leaders, we have witnessed a surge in demand for hyperautomation. We believe it will become mainstream within two to five years. The following insights highlight its potential for disrupting businesses:

- Evolution in AI, ML, and RPA is improving the capabilities of hyperautomation and expanding its applications in the healthcare, supply chain, banking and finance sectors.
- Hyperautomation can handle structured and unstructured data, enabling businesses to access previously unavailable data for analysis. The holistic data analysis allows them to make informed decisions and track their ROI more effectively.
- Hyperautomation enables organizations to easily integrate technologies between their legacy on-prem systems and remote data systems. Gartner stresses that the plug-and-play capability for quick and easy platform integration is essential for achieving hyperautomation.

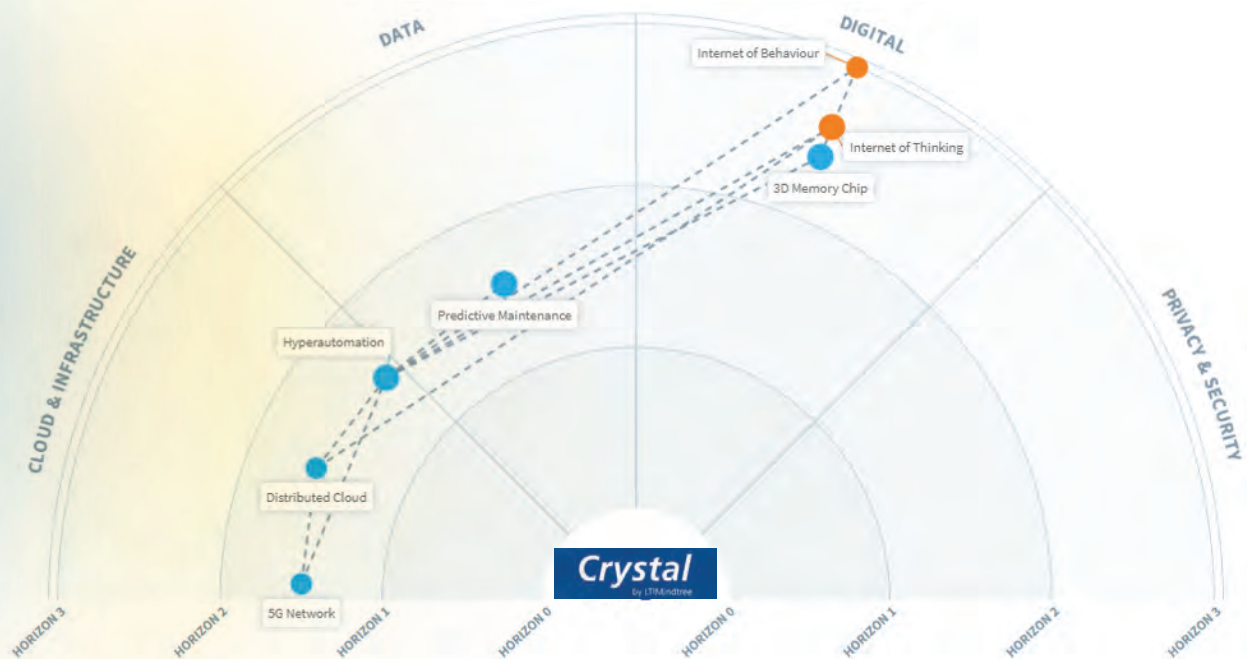


Fig. 1: LTIMindtree Crystal

# Technology Rating



Fig.2: LTIMindtree Technology Rating

# Technology insights

*Journey from rule-based automation toward hyperautomation*

Hyperautomation offers organizations a disciplined approach to maximize outcomes from RPA and minimize human inputs. It might seem different from rule-based automation. But they can be aligned in a linear manner (see Figure 3).

Rule-based automation is the starting point of the automation journey. At this point, organizations optimize repetitive tasks and processes through bots and scripts. Adding a layer of supervised AI makes automation get smarter. Hyperautomation takes it to the next level by introducing unsupervised intelligence. As a result, businesses achieve reliable, error-free and sustainable processes with minimum to zero human intervention.

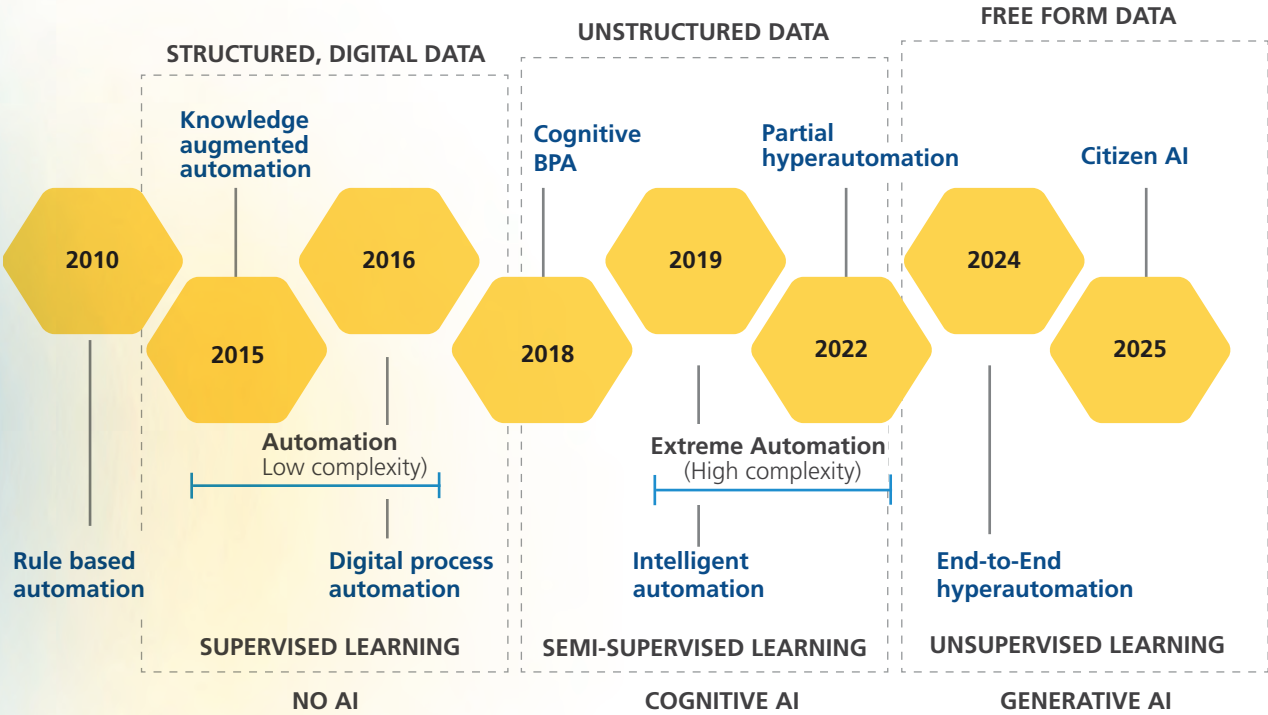


Fig.3: Evolution of Automation

The following table demonstrates a brief comparison between levels of automation across different parameters:

	<b>RULE BASED AUTOMATION</b>	<b>INTELLIGENT AUTOMATION</b>	<b>HYPERAUTOMATION</b>
<b>Tools and technologies required</b>	RPA automation tools ( <b>Blue Prism, UiPath, PEGA</b> )	Performed by multiple machine learning modules and automation tools	Performed by multiple machine learning and AI packaged software and automation tools with smarter outcomes
<b>Maturity level</b>	<b>Very Mature</b> Sophisticated, fast, and easy to implement	<b>Scaling</b> Sophisticated AI-based process automation with cognitive ability	<b>Transforming</b> Sophisticated AI-based process automation with cognitive ability and can loop humans into the process
<b>Scope/Coverage</b>	Rule-based, routine, repetitive tasks	Higher-function tasks that require some level of reasoning, decision, judgement	Complex and critical tasks can be augmented and automated at scale
<b>Implementation difficulty</b>	<b>Low</b> Most RPA tools are non-invasive and conducive to a wide array of business applications	<b>Moderate</b> IA tools require unconstrained access to data, as well as a suitable target environment for deployment	<b>High</b> Requires a certain degree of digital infrastructure maturity, as well as a meticulous cross-system orchestration to deliver the most gain

Fig.4: Comparison Between Types of Automation



*Moving from intelligent automation to hyperautomation*

As organizations continue to embrace digital methods of operation, they have started using multiple technology stacks to automate repetitive and rule-based processes. They are now working toward scaling these solutions and making them more intelligent by integrating AI capabilities.

Hyperautomation is a combination of cognitive Business Process Automation (BPA), Intelligent Automation (IA), and Digital Process Automation (DPA). Each of the approaches brings the process closer to becoming hyperautomated, in which:

- DPA automates processes and optimizes workflows
- Cognitive AI-driven BPA expands and improves complicated business operations that employ unstructured data
- IA thinks, learns, and adapts independently after getting trained

## Digital + Cognitive + Intelligent = HyperAutomation

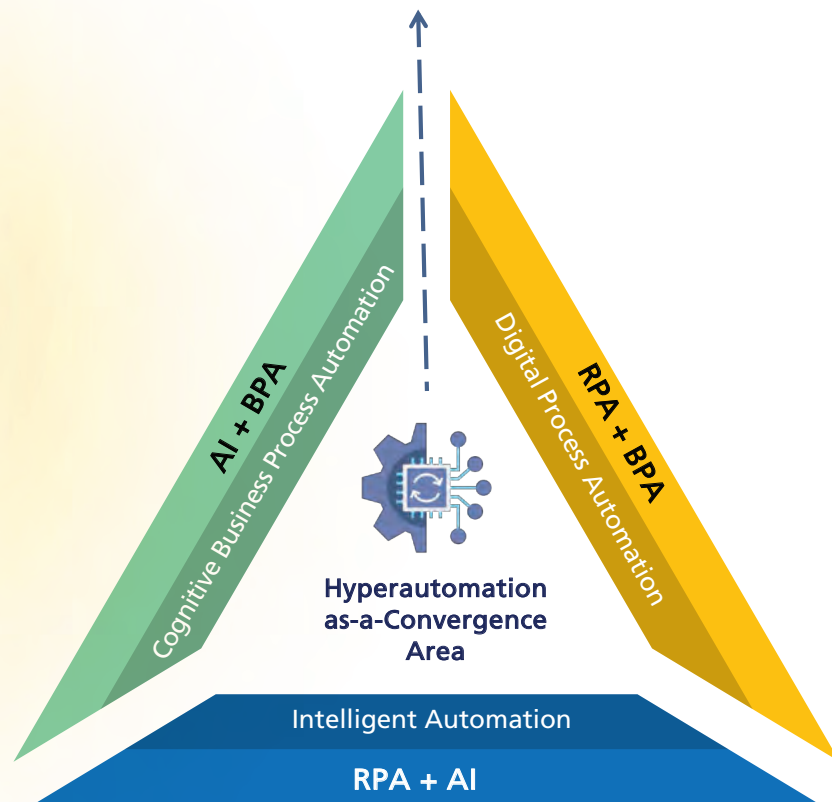


Fig.5: Hyperautomation-as-a-Convergence Area

Hyperautomation technology stack typically includes a combination of tools and platforms. The following figure shows the various enablers and their functionalities:

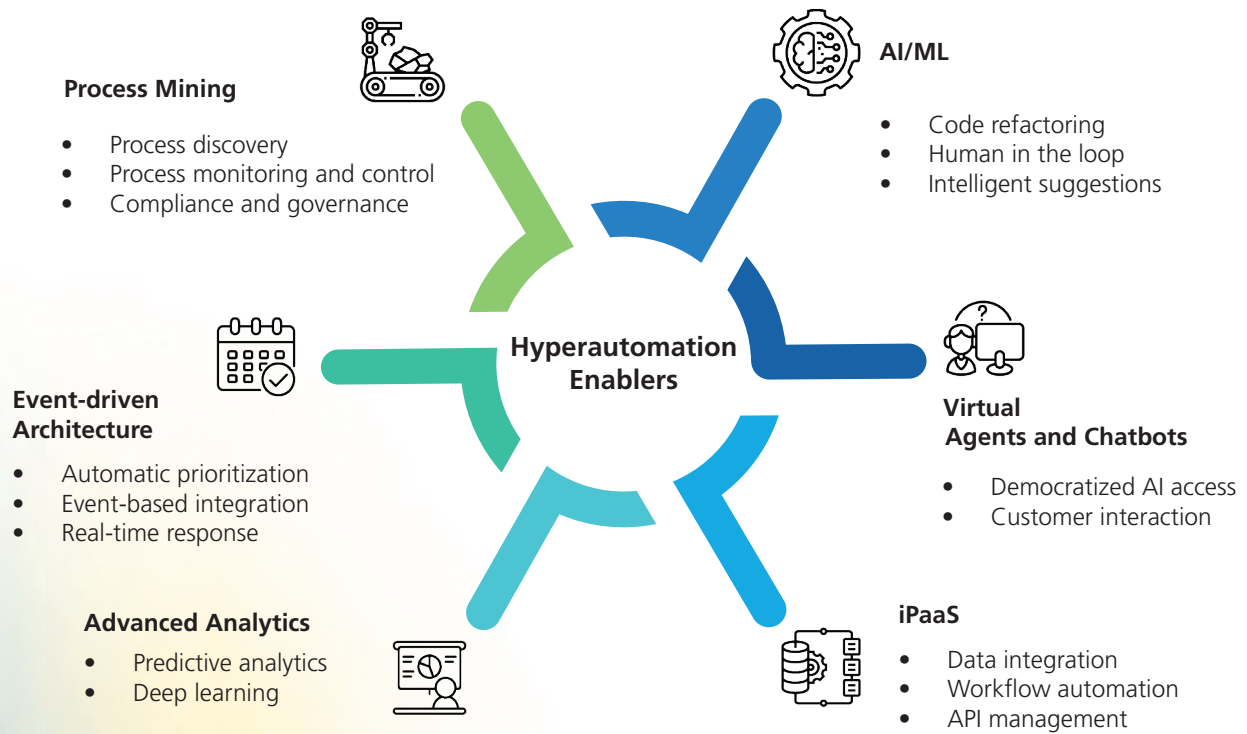


Fig.6: Hyperautomation Technology Stack

<b>Robotic Process Automation (RPA)</b>	<ul style="list-style-type: none"> <li>Automates monotonous tasks such as document processing and data entry</li> </ul>
<b>Business Process Automation (BPA)</b>	<ul style="list-style-type: none"> <li>Acts as a process orchestrator and task list manager</li> <li>Triggers an RPA bot/script to automate a task within a process, monitors metrics, and generates analytics dashboards to find process improvement opportunities</li> </ul>
<b>Artificial Intelligence (AI) and Machine Learning (ML)</b>	<ul style="list-style-type: none"> <li>Enables the automation of more complex tasks such as decision-making and image recognition</li> <li>Augments existing engineering processes with intelligent suggestions and code-refactoring opportunities</li> </ul>
<b>Low-Code/No-Code Platform (LCP/NCP)</b>	<ul style="list-style-type: none"> <li>Automates small-scope and frequently changing business processes that require a high degree of flexibility</li> <li>Exploits the broad set of connectors to automate tasks related to applications that have existing APIs</li> </ul>
<b>Chatbot and virtual agent</b>	<ul style="list-style-type: none"> <li>Automates customer interactions and support</li> <li>Enhances user experience by leveraging the cognitive capabilities of Conversational AI</li> <li>Automates a higher proportion of business operations, particularly those that rely heavily on scanned documents, such as customer-completed forms</li> </ul>
<b>Advanced analytics and dashboards</b>	<ul style="list-style-type: none"> <li>Provides insights and real-time visibility into the performance of automated processes</li> <li>Produces data from RPA to help organizations discover operational and business insights for quick decision-making</li> </ul>
<b>Integrated Platform-as-a-Service (iPaaS)</b>	<ul style="list-style-type: none"> <li>Connects different systems and applications to enable the seamless flow of data</li> <li>Automates workflows</li> </ul>
<b>Event-Driven Architecture (EDA)</b>	<ul style="list-style-type: none"> <li>Recognizes critical business moments or events and acts on them in real-time or near real-time</li> <li>Deploys automation tools to automate them</li> </ul>
<b>Process mining</b>	<ul style="list-style-type: none"> <li>Determines granular process inefficiencies</li> <li>Finds, monitors, and sets up tasks for automation with bots or scripts</li> <li>Extrapolates information from occurrences on a workstation or recorded from screens, creates process documentation, and automates simulation model generation</li> <li>Restores or expands a model and provides process recommendations based on previous data</li> </ul>

Table.1: Technology Stack Functionalities

# Industry use cases



## Banking and Finance

**Anti-money laundering:** Hyperautomation in anti-money laundering (AML) involves identifying suspicious financial transactions, tracking potential money laundering, and generating alerts for investigation using various AI/ML models. It analyzes financial data to identify suspicious transactions, assesses the risk associated with a customer or transaction, automates compliance and regulatory reporting, and automates the Know Your Customer (KYC) process by analyzing customer data and identifying risks.

**Payment operations:** Hyperautomation can automate payment processing and cash management, ensure compliance with regulations, and automate payment reconciliation. It can detect and flag potential fraud, errors, and issues in payment processing, optimize cash management operations, ensure compliance with regulations, such as Payment Card Industry (PCI) Data Standard Security (DSS) and General Data Protection Regulation (GDPR), and analyze payment data to identify discrepancies and errors in the reconciliation process.

**Loan processing:** Retail lenders use hyperautomation for loan application process, assessing risk, ensuring compliance with regulations, automating loan underwriting, loan disbursement and repayment. It can collect and verify customer

information, analyze creditworthiness, identify and flag potential fraud and errors, assess risk using NLP, and ensure compliance with regulations such as FCRA and ECOA. At an advanced level, hyperautomation can automate loan underwriting, disbursement and repayment by analyzing loan data for risks.

**Tax reporting:** Hyperautomation can help with Automating tasks such as collecting and analyzing financial data, ensuring compliance with regulations, forecasting tax liabilities, and automating tax preparation and the tax audit process are other uses of hyperautomation. It can use AI/ML algorithms to identify taxable transactions accurately, automate compliance checks and generate alerts, predict tax liabilities, speed up tax preparation and reduce errors, and analyze tax data to identify potential issues in the audit process.



## Insurance

**Claim processing and management:** Streamlining and optimizing the claims process, improving efficiency, accuracy and compliance, reducing errors and fraud risk, and speeding up claims assessment and payment are also benefits of hyperautomation. It can automate data collection and analysis, fraud detection, claim assessment and payment processes and ensure compliance with regulations such as HIPAA and ACA.

**Insurance fraud detection:** Hyperautomation can help detect and prevent insurance fraud by automating data analysis, fraud investigation processes, predictive modeling, and ensuring compliance with regulations. It uses AI/ML algorithms to collect, organize and analyze data to identify potential fraud, investigate claims, create predictive models, and ensure compliance with regulations such as Fraud Enforcement Recovery Act (FERA) and Affordable Care Act (ACA).



## Healthcare

**Drug discovery:** Hyperautomation is deployed for increasing efficacy in drug discovery by automating various tasks and processes, including virtual screening, laboratory automation, predictive modeling, drug optimization, and automating the drug development process. As a result, it can improve drug discovery speed, accuracy, and cost-effectiveness. AI/ML algorithms can help predict the binding affinity and efficacy, identify potential drug candidates, optimize properties, and automate the drug development process.

### **Medicine and diagnostic analysis:**

Hyperautomation can improve medicine and diagnostics analytics by automating various processes, such as medical imaging analysis, predictive analytics, clinical decision support, electronic health record management, and clinical trial data analysis. The enhanced process accuracy can lead to improved detection and diagnosis of diseases, better patient care, reduced medical errors, and increased efficiency in healthcare.



## Technology

**Cybersecurity:** Hyperautomation enhances cybersecurity by automating various tasks and processes related to threat detection, vulnerability management, incident response, network segmentation, and risk assessment. This technology can use ML algorithms to analyze data from multiple sources in real-time and identify potential threats, enabling organizations to respond quickly and effectively to cyberattack incidents. Hyperautomation can help to improve the efficiency and accuracy of cybersecurity processes and reduce the risk of data breaches.

**Data migration:** Hyperautomation automates various stages of data migration, including extraction, transformation, loading, validation, testing, governance, and monitoring, to improve accuracy and efficiency and ensure data governance compliance. The stages involved in data migration using hyperautomation include the automation of data extraction, data transformation, data loading, data validation and testing, data governance, and monitoring and reporting.

**Data backup and recovery:** Automation of processes related to data backup and recovery, including scheduling backups, performing incremental backups, verifying data integrity, encrypting data, testing backups and recovery procedures, and monitoring and reporting the process is being done by hyperautomation. The automation improves the efficiency and security of the backup and recovery process.

**Data archiving and governance:** Data management process involving data retrieval, classification, governance, quality check, and auditing can be made more efficient by hyperautomation. It helps ensure that data is stored and managed in compliance with regulations and industry standards by automating processes, such as data classification, identifying data owners, enforcing retention policies, checking data quality, and tracking data access and usage.



## Manufacturing

**Production tracking:** Hyperautomation enhances production tracking by automating data entry and collection and performing predictive maintenance with AI/ML. It also helps to monitor production processes in real-time with IoT sensors, optimize production schedules with analytics, improve supply chain visibility through data integration, and automate quality checks to meet product specifications.



## Media and Entertainment

**Content generation:** Hyperautomation positively impacts the media and entertainment industry by automating tedious processes, including content creation, video and audio production, distribution, personalization, advertising, analytics, and customer service. Hyperautomation improves efficiency, reduces costs, and increases competitiveness. It can improve quality through NLP and computer vision and enable personalization through data analysis. It can also enhance analytics, automate distribution, and provide predictive maintenance. Hyperautomation also helps automate customer service and advertising while reducing manual intervention.

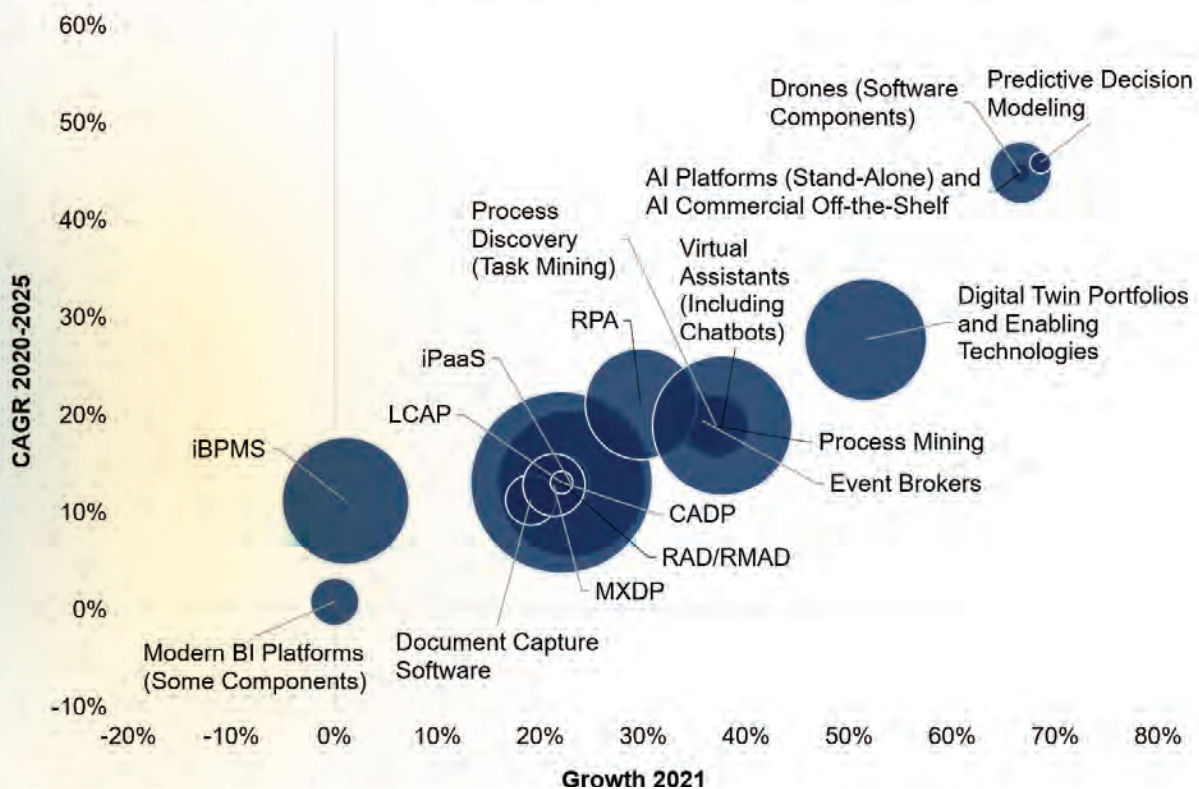
**Recommendation engine:** Hyperautomation improves the process of creating a recommendation engine by automating data collection and pre-processing, enhancing data quality and integration, automating model building, improving model performance, automating deployment, real-time monitoring, and automating decision-making. The use of hyperautomation can improve the recommendations' accuracy and reliability, reduce the time and resources required, and provide a more personalized and engaging user experience.

# Market insights

According to Gartner, the software shown in the figure below will be the most in-demand through 2025 as a critical enabler of hyperautomation. This software is typically process-agnostic, allowing industry-wide organizations to implement it for multiple IT needs. The process-agnostic software tools include about 20 technologies. Gartner expects the technologies will generate revenues of more than \$46 billion in 2025, with a CAGR of 18.8%. A vast combination of other softwares used to automate work, such as ERP, supply chain, and CRM, is forecasted to reach \$813 billion, with a CAGR of 12% from 2020 to 2025.

*Note that business-driven hyperautomation is not a market but an approach to automate work enabled by a set of technologies. This forecast is focused on software spending only and excludes all professional services.*

**Process-Agnostic Technologies That Enable Hyperautomation, Worldwide Revenue, 2020-2025**



Note: The size of each bubble represents 2020 revenue by segment in current U.S. dollars. CADP = citizen automation and development platform; iBPMS = intelligent business process management suite; iPaaS = integration platform as a service; CAP = low-code application platform; MXDP multiexperience development platform; RAD = rapid application development; MAD = rapid mobile application development  
 Source: Gartner (March 2021) ID: 735188

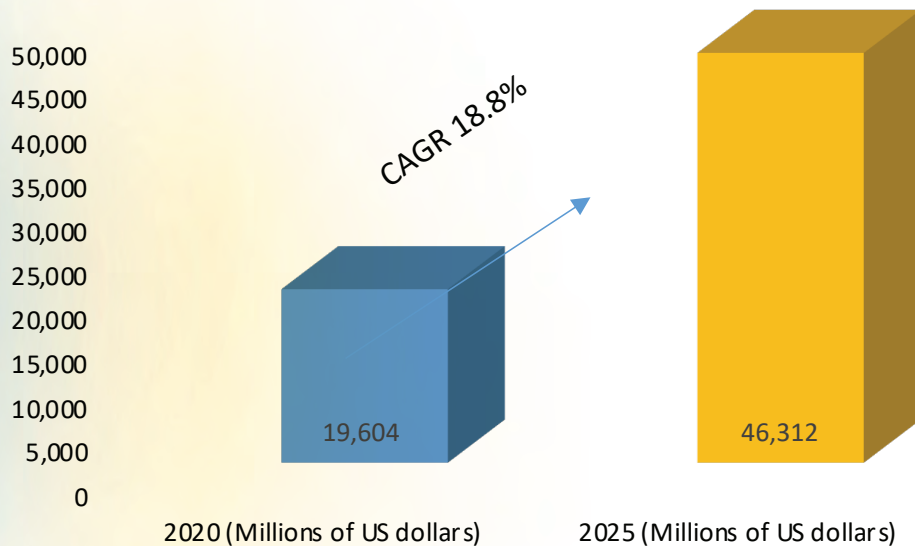
Fig.7: Hyperautomation Enabling Technologies Global Revenue

Until 2024, the push towards achieving hyperautomation will compel organizations to implement at least three of the 20 process-agnostic software types that facilitate hyperautomation. Organizations will transition from a loosely coupled set of automation technologies to a more-connected automation strategy. Many vendors will provide a single platform with an integrated offering in response to this transition.

In addition to market growth, several key trends and developments will shape the hyperautomation market. For example, organizations will be seeking solutions that combine RPA and AI/ML to enable complex process and workflow automation. The rise of cloud-based hyperautomation solutions is also a significant trend, allowing organizations to deploy and scale hyperautomation solutions more quickly and cost-effectively.

North America will be the highest contributor to hyperautomation, followed by Europe and Asia Pacific, attributed to the presence of key software vendors and System Integrators (SIs) driving the technology's growth and adoption. The vendors in these regions have struck strategic deals with industry partners and existing customers to offer innovative end-to-end hyperautomation solutions to their customers.

### Process Agnostic Software Enabling Hyperautomation

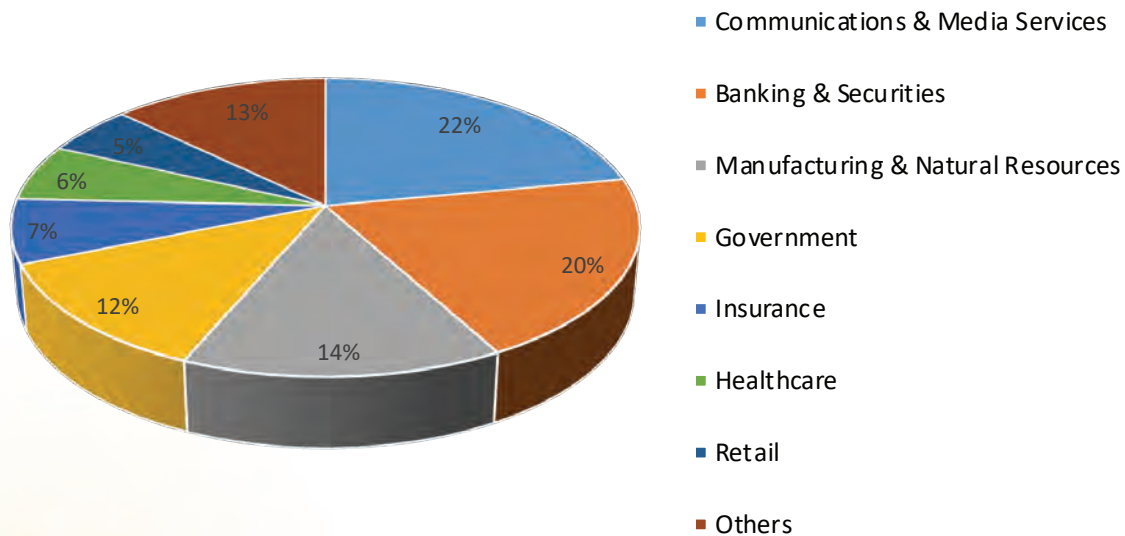


#### Key System Integrators





### Forecasted Process Agnostic Technologies Enabling Hyperautomation, Contribution by Industry Vertical (2025)



### Forecasted Process Agnostic Software Enabling Hyperautomation, Contribution by Region (2025)

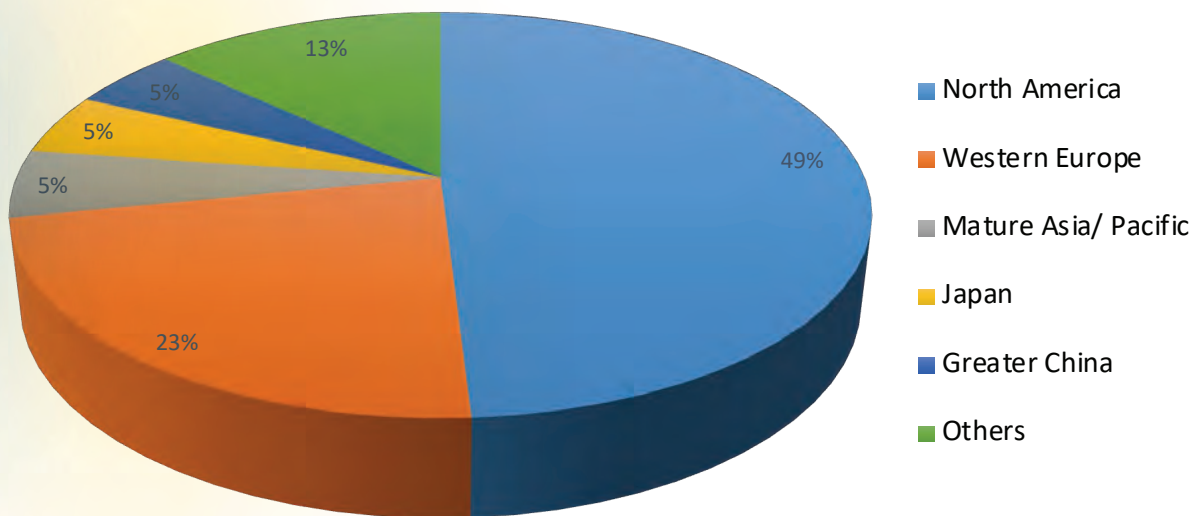


Fig.8: Hyperautomation Market Insights

Celonis, a leader in process mining tools, announced the acquisition of Process Analytics Factory (PAF), a leader in process analytics for the Microsoft Power Automate and Power BI platforms.

**UiPath** acquired Cloud Elements to deliver expanded API-based automation capabilities. With this acquisition, UiPath continues to lead innovation in the automation market, believed to be the first provider to offer enterprise-grade UI and API-based automation capabilities in a single platform.

**Accenture** to acquire capabilities from Trancom ITS, a **Japanese logistics technology services provider** to offer hyperautomation to manufacturing and logistics clients.

**UiPath** announced an enhanced partnership with Neostella, a UiPath Diamond partner which specializes in automation, business consulting, and implementation services, to **bring managed services to the midmarket business segment.**

StarLink, announced a collaboration with **Automation Anywhere**, to **expand their RPA and AI-driven intelligent automation solutions portfolio to more customers across the Middle East.** This strategic partnership aims to further accelerate business transformation for the organizations in the region by making automation accessible to everyone through their enhanced **Automation Success Platform**. This includes solutions such as Document Automation, AARI for Every App, CoE Manager, Citizen Development, Process Discovery, and the Automation Pathfinder Program.

JK Tech, an **India-based** global provider of next-generation digital transformation services, is introducing path-breaking Hyperautomation-powered solutions for revamping the healthcare industry. Along with Revenue Cycle Management (RCM), the company aims to cater to key industry concerns including **Lab Automation, Compliance solutions, and the automation of Electronic Health Records (EHR)** to ensure the optimization of clinical data exchange within and between payer and provider organizations; enabling improved compliance and efficiencies while fostering better patient outcomes.



Fig.9: Global Recent Developments

Organizations will witness significant growth in the hyperautomation market in the coming years. Organizations are likely to continue to invest in these technologies as they look for ways to improve efficiency, reduce costs, and drive innovation.

## Key market and technology drivers

### Key Drivers

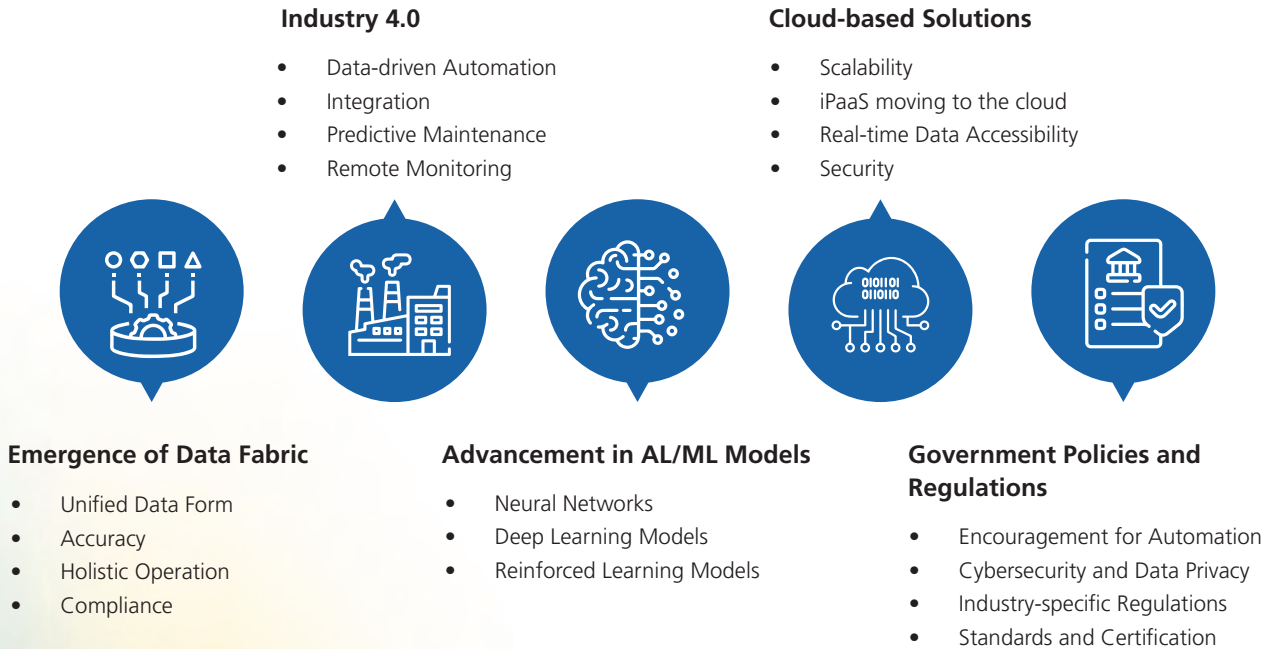


Fig.10: Key Drivers

### 1. Advanced AI/ML models

Advancements in learning models such as Variational Auto-Encoders (VAEs) and Generative Adversarial Networks (GANs) and technologies like NLP, sentiment analysis, and image recognition in industries such as finance and insurance will allow pattern detection and automation of complex tasks. Reinforced learning models will enhance predictive maintenance operations. However, deploying these advanced learning models in a production environment will require specialized expertise and infrastructure to train large amounts of data and manage model complexity. Such implementations can be cost-prohibitive. As a result, weighing the benefits and costs before implementing them in the business will be crucial.

## 2. Industry 4.0

Industry 4.0 technologies such as IoT and big data analytics will enable data-driven automation, leading to semi-supervised learning and more efficient and effective automation. These technologies will automate complex tasks and drive the demand for hyperautomation solutions that integrate with different systems and platforms. Predictive maintenance using these technologies will reduce downtime and increase efficiency. Smart factories with integrated automation and digitalization will propel the demand for hyperautomation solutions. Remote monitoring using IoT devices will also drive the demand for hyperautomation solutions that can integrate with IoT for remote monitoring and control.

## 3. Cloud-based solutions

Cloud-based hyperautomation solutions offer scalability, accessibility, cost-effectiveness, security, and real-time data analysis. Companies are integrating low-code solutions and cloud-based APIs with iPaaS capabilities to allow process automation using existing applications. Cloud-based solutions offer the advantage of remote accessibility while significantly reducing costs compared to on-premises solutions. Built-in security features in the cloud increase demand for hyperautomation and enable real-time data analysis to improve automation processes.

## 4. Data fabric

Data fabric is a technology architecture that enables organizations to access, use and manage data from multiple sources and in different formats, providing a unified and consistent view of data across the enterprise. It plays a critical role in hyperautomation by providing the necessary infrastructure to support the automation of processes and workflows, improving data quality, accessibility and availability, reducing data silos, and creating a consistent security and compliance framework.

## 5. Government policies and regulations

Governments may drive the demand for hyperautomation through various policies, regulations, and incentives, such as tax breaks and funding for R&D. They may also enforce mandates to protect against cyber threats and data privacy issues, establish industry-specific regulations, set standards and certifications, and require regulatory compliance for GDPR and HIPAA. Organizations will need to adopt hyperautomation solutions that meet these requirements.

## Barriers to implementation

- **Limited availability of skilled professionals:** Implementing hyperautomation requires diverse technical skills. Finding and retaining talent with the required skills can be difficult. As hyperautomation is a cluster of multiple tools and platforms, professionals with expertise in back-end programming, data science, NLP, database management, integration frameworks, enterprise architecture, and encryption protocols will be in high demand.
- **Integration challenges:** Hyperautomation solutions often need to integrate with different systems and platforms, which can pose a significant challenge. Organizations may encounter difficulties integrating these solutions with their existing infrastructure. In some cases, existing business processes and infrastructure might require replacement to ensure full-scale implementation of hyperautomation. Managing these changes and ensuring that employees can adapt can be a challenge.
- **Data management, privacy, and security:** Hyperautomation requires access to large amounts of data across multiple systems and platforms. Effectively managing this data can pose a challenge. Hyperautomation solutions often employ sensitive data, which can raise concerns about data privacy and security. Organizations may hesitate to adopt these solutions if they have no confidence in the protection right of their data. Also, multi-departmental in-depth monitoring and analysis of business processes will raise new security and privacy concerns.
- **Lack of assessment metrics:** Hyperautomation solutions' implementation and maintenance can be expensive, so organizations must carefully perform cost and benefit analysis of the technologies. The lack of unified performance and cost assessment metrics for intelligent automation could present difficulties in measuring its effectiveness. Existing assessment metrics are still in their infancy for analyzing automation's cost and potential utility. Organizations may hesitate to invest in these solutions if they do not find the potential benefits and ROI convincing enough.

# Areas of opportunity for IT solution providers

Gartner predicts that by 2023, hyperautomation coupled with updated operational procedures can increase task automation by 25% and reduce expenses by 30%. The advent of hyperautomation will affect every industry, and thus, every business must create a plan to tackle this new reality. IT solution providers must also adapt to the changes brought by hyperautomation, including impacts on client relationships and the industry's stability.

The following are some opportunities for IT solution providers in the hyperautomation market:

## **End-to-end hyperautomation platform**

Companies today recognize the pressing need to seamlessly integrate their solutions to derive maximum outcomes from their digital capabilities. However, they are equally mindful of the associated costs of integration. When a business procures a new tool, it is cognizant of the cost of integrating it with the rest of its digital infrastructure. According to Gartner, IT teams spend 34% of their budgets on integration projects.

As customers become discerning toward the value for their money, businesses have to focus on the most efficient solutions. Organizations are automating as many processes as possible to achieve this efficiency. As a result, the demand for IT solution providers proficient in hyperautomation-related solutions and services will increase significantly in the upcoming years.

The growing demand for businesses to build their enterprise applications presents a chance for IT solution providers to develop their in-house E2E hyperautomation solution to support customers in achieving extreme autonomy.

Organizations can leverage their customer knowledge and create a tailored low-code enterprise-wide hyperautomation app that is easy to integrate and requires limited technical resources. While customers know its value, they see integration as increasing the total cost of ownership—putting pressure on IT solution providers to keep costs down and improve efficiency.

## **Custom low-cost automation suite**

A high total cost of ownership can lead companies to explore low-cost options, such as handling integration projects internally. Previously, business teams had to rely on IT staff to custom-code integrations when a new requirement altered processes or workflows across systems. With the current drive toward digitization, this

wait time can be lengthy. However, using low-code applications has reduced this obstacle, allowing non-IT employees to build their integrations and eliminating delays.

Amid recent changes, the main priority for IT solution providers must be to concentrate on their customers and understand their individual needs. By collaborating with iPaaS companies, IT solution providers can expand their expertise in integration and offer diverse solutions to their customers. The IT solution providers that will appeal to clients are those who provide customized solutions that address their unique needs and problems. Generic solutions are no longer an option, but solutions that are easy to access and use, especially in the current era of hybrid working, will be highly appreciated.

Thus, it is safe to say that customers will be looking to take advantage of solutions that they can access directly. This shift increases the demand for self-serve tools, such as iPaaS and APIs, and decreases reliance on manual integration protocols for support.

### **Implementation and integration services**

Hyperautomation improves an organization's data gathering, analysis, and deployment processes using a toolset, including RPA, data warehousing components (such as data lakes and integration hubs), and analytical solutions. However, organizations can only utilize all these tools once they have integrated the underlying systems and applications. As a result, an IT solution provider plays a critical role in integrating the entire IT environment to make its customer's systems work effectively.

Providers must offer automation and integration services to stay relevant and enhance their role as technology adoption accelerates. As its customers use event-driven architecture to handle integration internally, preference for "best-of-breed" solutions will open new avenues for the IT solution providers. Customers will choose the provider who can provide a monolithic hyperautomation platform and seamlessly plan and implement advanced technologies.

# Implementation roadmap to facilitate hyperautomation in the organization

Organizations face challenges in effectively tracking their automation programs due to different isolated teams and functions taking ownership of automating separate business processes. This distributed setup creates difficulties because of a lack of uniform technology stack utilization (e.g., different RPA tools for each function or initiative, friction between functions and their corresponding application environment). Without effective governance, organizations fail to assess and analyze automation programs and target improvement areas, resulting in low business user satisfaction. For instance, if an organization automated business processes for different regions of the same function and executed one business process differently—say, using an alternative technology stack or environment—the lack of visibility of the process across all regions would lead to the inefficient process's shutdown. A proper governance model can help avoid this inefficiency. Thus, to develop such a solution and avoid operational disruptions, we advocate phasing hyperautomation implementation in the following three stages:

## **Stage 1: Start with baseline automation**

IA and DPA solutions are readily available in the market. There are vendors such as UiPath, and Automation Anywhere who provide IA integrated with plug-and-play chatbots. The company can initially implement them in a limited number of business processes to avoid operational disruptions. Consider this a trial period for evaluating the solution's performance and value. Encourage small business users to try the solution and provide feedback.

## **Stage 2: Introduce no-code/low-code platforms and advanced analytics over the existing system**

Implement the gathered user insights and make necessary changes to decrease cultural resistance to the new solution. Scale standard bots over a wider variety of business operations and promote company-wide adoption and upgrade with AI/ML skills.



### Stage 3: End-to-end integrations

After reviewing the outcomes of the second automation phase, consider introducing the iPaaS and process mining to the existing business systems. This level will necessitate more significant data management reforms. Consider improving some of the earlier built models with generative AI and NLP to improve their performance even more. To increase performance and security, implement system-wide event-driven software architecture to all existing automation. In its study, 'Predicts 2022: Hyperautomation Demands Adaptive Governance' Gartner stresses that quick and easy platform integration – 'plug-n-play' capability – is essential for achieving E2E hyperautomation. Following is the Hyperautomation Ecosystem:

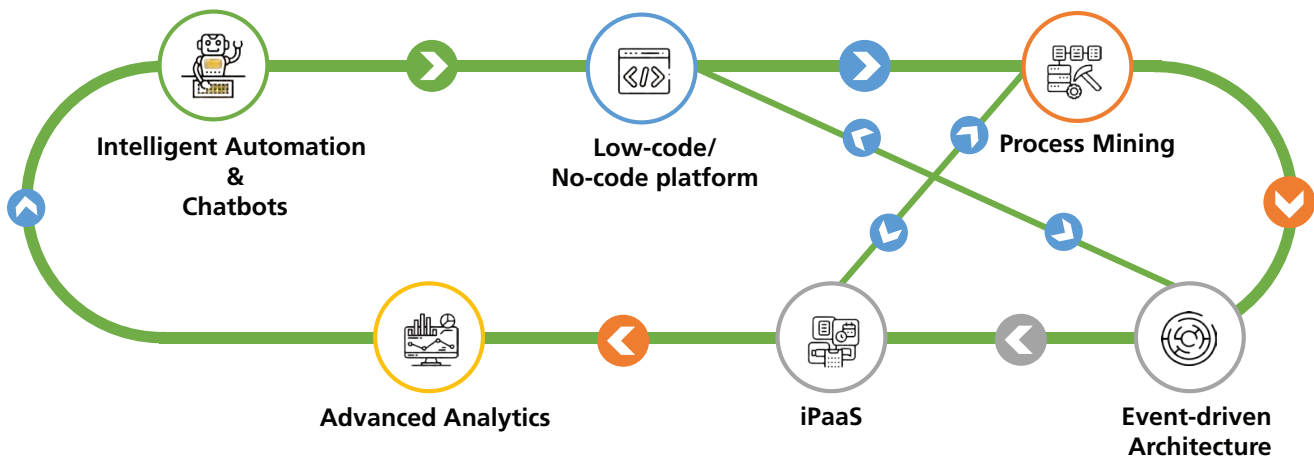


Fig.11: Proposed Hyperautomation Ecosystem

# Conclusion

In conclusion, hyperautomation is a rapidly evolving field that promises significant benefits to organizations that adopt it. Hyperautomation combines various technologies, such as AI, ML and robotics, to automate complex and disparate business processes. The obstacle businesses face when employing hyperautomation to automate their operations is how to scale it and make it sustainable over time. The reality is most organizations struggle to implement their automation initiative at an enterprise level and end up limiting automation to a select few processes within the organization. As a result, businesses need a comprehensive strategy that can provide consistent and sustainable benefits. By doing so, organizations can achieve greater efficiency, improved productivity, reduced costs, and better customer experiences.

To succeed in hyperautomation, organizations need to plan and execute their automation initiatives carefully. The ideal way is to identify the most suitable processes for automation, select the right technology stack, and establish a governance model and technology acceptance model to manage and govern the automation efforts.



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# References

- <https://research.aimultiple.com/hyperautomation/>
- <https://kissflow.com/workflow/bpm/digital-process-automation/>
- <https://www.techslang.com/definition/what-is-cognitive-automation/>
- <https://www.informatica.com/resources/articles/what-is-hyperautomation.html#:~:text=iPaaS%20drives%20innovation%20by%20integrating,in%20their%20process%20automation%20initiatives.>
- <https://www.neebal.com/blog/middleware-and-eda-event-driven-architecture>
- <https://medium.com/aiautomation/100-automation-use-cases-to-intelligently-transform-your-industry-fd9aed3488b>
- <https://research.aimultiple.com/intelligent-automation-examples/>
- <https://www.sam-solutions.com/blog/intelligent-automation/>
- <https://verloop.io/blog/intelligent-automation/>
- <https://www.techtarget.com/searchcio/definition/hyperautomation>
- <https://www.infopulse.com/blog/rpa-vs-intelligent-automation-vs-hyperautomation>
- <https://www.ibm.com/cloud/blog/differentiating-between-intelligent-automation-and-hyperautomation>
- <https://saasbpm.com/hyperautomation-2022/>
- <https://blog.softwareag.com/hyperautomation-trends/>
- <https://www.infoworld.com/article/3646556/all-roads-lead-to-hyperautomation-in-2022.html>
- <https://www.prolifics-testing.com/media/hxah1idz/white-paper-hyperautomation.pdf>
- <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/technology-media-telecommunications/in-hyperautomation-the-next-frontier-noexp.pdf>
- <https://www2.deloitte.com/us/en/insights/focus/tech-trends/2022/disruptive-automation.html>
- <https://www.mckinsey.com/~media/McKinsey/Business%20Functions/McKinsey%20Digital/Our%20Insights/Driving%20impact%20at%20scale%20from%20automation%20and%20AI/Driving-impact-at-scale-from-automation-and-AI.ashx>
- <https://www.mckinsey.com/~media/mckinsey/business%20functions/operations/our%20insights/digital%20service%20excellence/digital-service-excellence--scaling-the-next-generation-operating-model.pdf>
- <https://www.docdigitizer.com/wp-content/uploads/2021/06/Hyper-automation.pdf>

- [https://www.kgisl.com/gss/wp-content/uploads/2020/09/KGISL-Gartner\\_Move-beyond-RPA-to-deliver-Hyperautomation.pdf](https://www.kgisl.com/gss/wp-content/uploads/2020/09/KGISL-Gartner_Move-beyond-RPA-to-deliver-Hyperautomation.pdf)
- <https://info1.exlservice.com/hubfs/Media-Library/insights/white-paper/EXL-WP-Hyperautomation.pdf>
- [https://worldline.com/content/dam/worldline-new/assets/documents/whitepapers/hyperautomation\\_in\\_payments.pdf](https://worldline.com/content/dam/worldline-new/assets/documents/whitepapers/hyperautomation_in_payments.pdf)
- [https://www.nagarro.com/hubfs/Nagarro.com\\_Whitepapers/Hyperautomation\\_Putting%20people%20at%20the%20center%20again\\_Nagarro%20eBook.pdf](https://www.nagarro.com/hubfs/Nagarro.com_Whitepapers/Hyperautomation_Putting%20people%20at%20the%20center%20again_Nagarro%20eBook.pdf)
- <https://www.lntinfotech.com/wp-content/uploads/2021/06/Intelligent-Automation-The-Road-Forward.pdf>
- <https://www.cortex-ia.com/wp-content/uploads/What-is-Intelligent-Automation.pdf>
- <https://www2.deloitte.com/content/dam/Deloitte/tw/Documents/strategy/tw-Automation-with-intelligence.pdf>
- <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/Consulting/in-cnsulting-DeloittePoVThe-new-normal-withIntelligentAutomation-noexp.pdf>
- [https://www.iberdrola.com/innovation/hyperautomation#:~:text=Hyperautomation%20consists%20of%20increasing%20the,Robotic%20Process%20Automation%20\(RPA\).](https://www.iberdrola.com/innovation/hyperautomation#:~:text=Hyperautomation%20consists%20of%20increasing%20the,Robotic%20Process%20Automation%20(RPA).)
- <https://www.pwc.in/assets/pdfs/consulting/technology/emerging-technologies/intelligent-automation/intelligent-automation-the-future-of-digitalisation-in-organisations.pdf>
- [Hyperautomation: The Benefits and Challenges | IBM](#)
- <https://www.finextra.com/blogposting/22847/there-are-multiple-benefits-to-adopting-hyperautomation-in-the-banking-sector>
- <https://www.fortunebusinessinsights.com/hyper-automation-market-106642>
- [A White Paper\\_Metrics Milestones for Incubators.pdf \(aspeninstitute.org\)](#)
- [Requirements Traceability Matrix: Automatic Generation and Visualization | IEEE Conference Publication | IEEE Xplore](#)
- <https://accelerationeconomy.com/low-code-no-code/the-role-of-ai-within-low-code-development/>
- [SaaS-Partnerships-Hyperautomation-PRODUCTION-FINAL.pdf \(jitterbit.com\)](#)
- GARTNER, "Predicts 2022: Hyperautomation Demands Adaptive Governance", G00757781, January 2022
- GARTNER, "Forecast Analysis: Hyperautomation Enablement Software, Worldwide 2020-2025", G00735188, March 2021

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