



---

## AI/ML Augmented Hyper-automation

Abdulbaqui Ansari<sup>1</sup>, Uday Futak<sup>2</sup>

<sup>1</sup>(MCA, VIVA Institute of Technology / University of Mumbai, India)

<sup>2</sup>(MCA, VIVA Institute of Technology / University of Mumbai, India)

---

**Abstract :** *The concept demonstrates the understanding that robotic process automation (RPA) technology, the newest and most popular method of automated computer-based processes, is challenging to measure at a business level and is limited to the types of automation I can access. Hyper-automation provides a framework for the dissemination of strategies for various automated technologies separately or in conjunction, extended by AI and machine learning. The practice of hyper-automation includes identifying which task to perform automatically, selecting the right automatic tools, speeding through the re-use of automated processes, and extending their capabilities using a variety of AI tastes and machine learning. Hyper-automation steps are often integrated through a beauty that helps drive automation efforts. The purpose of hyper-automation is not only to save costs, increase productivity, and achieve optimal efficiency, but also to monetise data collected and generated by digital processes.*

**Keywords** – *Artificial Intelligence, Augmented, Digital Agility, Hyper-automation, Machine Learning.*

---

### I. INTRODUCTION

Hyper-automation is about additional intelligence and the use of an effective system-based approach to the development of automated systems. This approach emphasizes the importance of striving for a balance between changing manual effort and automation and developing complex phases. Business process specialists can better see the automation opportunities held by many employees. Users can customize most of their processes in their operations and benefit most quickly from the resources they have, using the power of hyper-automation solutions. Allows you to focus on more powerful tasks, such as planning and strategy. Hyper-automation enables a company to generate easy integration value with multiple technologies and various data platforms.

Today, people refine a variety of automated processes to increase quality. The main benefits of hyper-automation include low automation costs, improved IT-business optimization, security and management. It improves the use of AI and machine learning in business operations.

Most automation providers have analyzed that hyper-automation is growing. It completes the work that people once did. In addition, the monitoring technology used in hyper-automation may cause information workers to worry about using this data [1].

Hyper-automation is growing with the emergence of automation technology. Companies are moving their practices to more focused and smart workplaces. This change has led to a new era of businesses relying on changing technology and tools to keep their limits competitive. With all forms of automation working closely together, businesses can transcend the unique benefits of technology to real digital versatility and scale flexibility. Companies may be more careful with key analysis based on automated processes, saving time and money weekly, monthly, and yearly. Many organizations can use this new technology when automation becomes a leader in many fields.

The paradigm for the widespread distribution of automated technology in a systematic way, either alone or in tandem and enhanced with the use of AI and machine learning. It is important to remember that hyper-automation is not intended to completely replace humans. Instead, automation frees employees from duplicate and low-cost jobs, allowing them to focus on the more important aspects of the business.

Organizations can create better customer experience while lowering operating costs and increasing profits through automated integration and human participation [2].

## II. WORK FLOW PROGRESSIVE STEPS FOR HYPER-AUTOMATION

For the first time Gartner, an IT research team and consultant, coined the term hyper-automation in 2019. Gartner's Top 10 Strategic Technology Trends 2020 ranks hyper-automation at the top. Basic automation is used to perform basic and repetitive tasks. However, Hyper-automation enables employees to train themselves to take full advantage of their responsibilities by using new marketing information and company information. The ultimate goal of hyper-automation is to build a corporate automation system. It is a framework and collection of sophisticated automation measurement technology in a company.

Hyper-automation, to put it simply, is a combination of artificial intelligence and artificial intelligence that, when combined, enhances human skills, allowing them to perform tasks faster, more effectively, and with fewer errors [2][3].

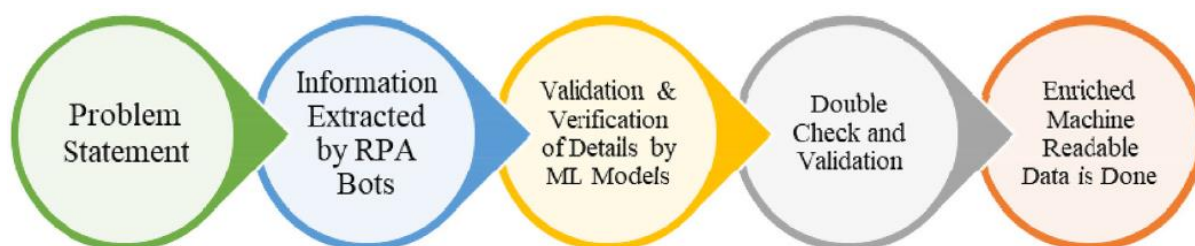


Fig. 1. Work flow progressive steps for hyper-automation

### 2.1 Need of hyper-automation

The need for hyper-automation is to automatically do more information work and include everyone in the organization. It covers a number of components of changing processes, integration tools and technologies to improve employee automation. Hyper-automation is a combination of many machines learning tools and flexible tools to perform tasks. That will be automatic and increase the number of people who can use this sophisticated technology. Hyper-automation refers not only to the development or stages of automation but also to the many uses. It is equally important in hyper-automation to choose a technology that will communicate well with employees.

Today, most groups are made up of people with a variety of talents and knowledge, and it is important to find a tool that everyone can use and share easily. The choice of solution reduces the variety, which may give companies a lot of lead in automated equipment. By using a combination of automation technology, hyper-automation can overcome some of the barriers of one-way changing devices. This allows companies to bypass the limits of each process and perform almost any complex and uncontrollable operation [4].

### 2.2 Role of sensors to enhance hyper-automation

Hyper-automation incorporates robot intelligence into a standard automation process, improving process efficiency, speed, and error-free operation. The technology can automatically perform any duplicate function with AI technology with RPA; creates automation by seeing business processes and creates bots to automate them. It requires the use of many technologies, which means that the organizations that invest in it must have the right tools, which must also work together. Hyper-automation uses AI and machine learning to create “digital twins,” which are realistic simulations of processes or tangible assets. Digital twins are monitored by sensors connected to a network and other devices, collecting mountains of data by their status and status [6][7].

### 2.3 Versatile technologies associated with hyper-automation

Data limitations of automated technology such as RPA are resolved by hyper-automation. Although RPA is limited to scheduled data, technical hyper-automation can treat both formal and informal data. Allows the industry to access important organizational information by accessing and analysing data. Randomized data to be used with RPA technology can be converted from hyper-automation into form. This connection demonstrates seamless interaction across all digital tools to provide optimal performance. The transformation process becomes a key factor in achieving greater impact for everyone, including business analysts, professionals, and remaining business users [8].

Hyper-automation technology allows robots and humans to operate efficiently. Business users may use tools that are easy to integrate and are flexible. Automation is achievable from practical processes and takes time to processes in a limited range [9].

## 2.4 Specific domains of solicitations through hyper-automation

Figure 2 shows the real-time aspect associated with hyper-automation conceptualization. These include litigation handling cases, travel and expense procedures, anti-money laundering (AML), fully digital processes and measures, order management, and customer service activities [10].

Automation has been used worldwide for many years; however, it has become important to adapt to hyper-automation with the daily technological advancement. With hyper-automation, the new era of automation and smart firms around the world is moving in this direction. Both client and employee benefit from hyper-automation, in direct proportion to the company. The bots collected data later used to analyze hyper-automation. Bot Insight incorporates self-examination and in-depth self-assessment. Each bot receives information about its path of activity, and then sends the entire piece of information to hyper-automation analysis [11].

Hyper-automation is used in job-seeking businesses, employees, processes and more to benefit the collection. Robots can go to work and people can do various tasks [12].

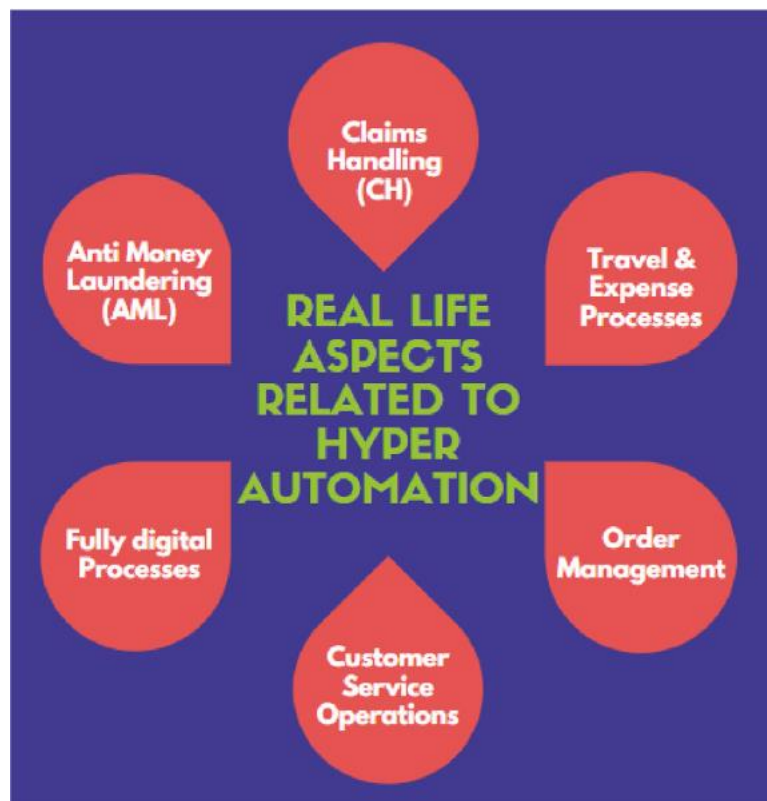


Fig 2. Real time Aspects Related to Hyper-automation

## 2.5 Capabilities of hyper-automation for industries

Hyper-automation provides a framework for independent and simultaneous distribution of various automated technologies. It includes job identification, speed up reuse of automated processes, and their capabilities. The purpose of hyper-automation is to reduce costs, increase productivity, achieve automated efficiency, and use digital process data created and collected. Organizations can capture this information to make their business choices better and more up-to-date. Hyper-automation provides a platform for companies to grow, integrate and expand business automation. Expands and addresses the success and limitations of RPA tools. Hyper-automation is divided into other automated components that focus exclusively on the development of flexible tools or automated ideas [13].

In hyper-automation, modern technology is used to bypass the barriers of the old system in order to perform business operations automatically. This enables companies to bypass certain operational boundaries and to find the right solutions for almost all complex and complex business operations. Hyper-automation provides sophisticated analytical tools and features to help businesses transcend single-stage data collection and analysis platforms. As opposed to adding artificial intelligence, it allows the business essential skills of industrial hyper-automation in a short definition [14].

### III. METHODOLOGY

Since hyper-automation aims to improve a person's abilities, it should include a variety of tools, as not a single tool can achieve the desired result. The technologies that make up the main components of hyper-automation are [15]:

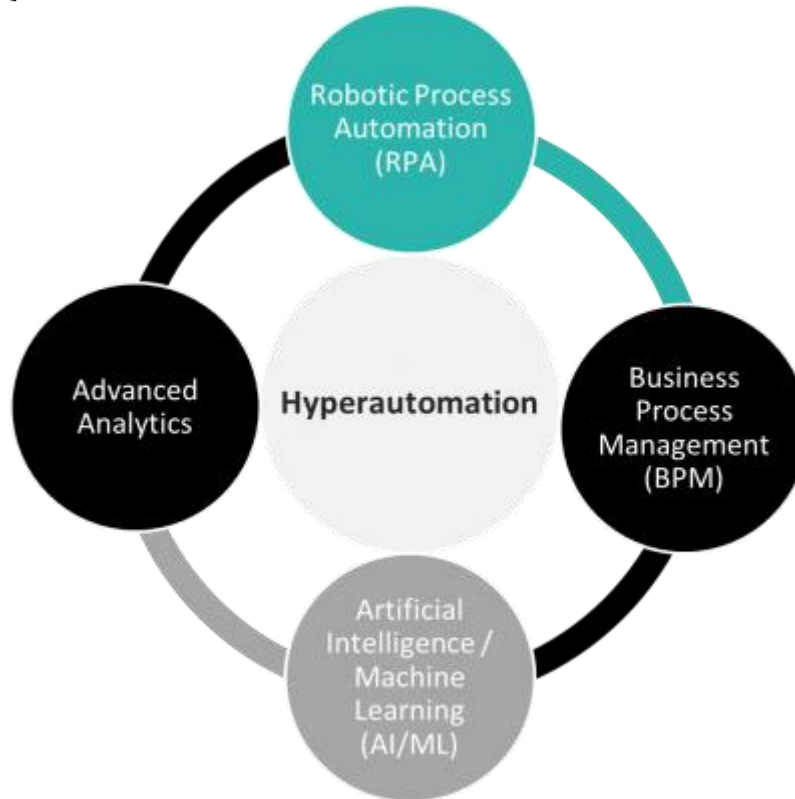


Fig. 3. Hyper-automation

#### 3.1 Robotic Process Automation:

RPA refers to technology that helps to automatically perform repetitive handicrafts. It usually applies to repetitive and statutory processes with well-defined touch points and input and output. However, the RPA has its limitations. It only works on structured data and does not involve any comprehension or ability to read and understand the context [15][16].

#### 3.2 Business Process Management:

BPM refers to a set of tasks performed to detect, model, analyse, measure, improve, optimize, and automate business processes. It forms the basis of the automation strategy by providing the specific flow of workflow involved in the process. It also helps to avoid future division of the process [15][16].

#### 3.3 Artificial Intelligence/Machine learning:

AI refers to the imitation of human intelligence or computer intelligence, while ML (sub-set of AI) refers to the ability of AI to improve its understanding over time. Advanced computer algorithms are able to mimic the workings of the human brain, thus enabling machine learning. ML of two types - supervised and unsupervised. Although supervised ML has well-defined inputs and outputs before predicting, unruly ML uses structured data sets to improve data perception [15][16].

#### 3.4 Advanced Analytics:

Advanced statistics refer to the automatic or independent evaluation of data or content using sophisticated techniques and tools, often beyond those of standard business intelligence (BI), to obtain in-depth information, predict, or make recommendations. It helps to overcome the limitations of the RPA as it is able to manage both formal and informal data. It enables you to analyse random data (such as photographs) in order to detect material that is not traditionally inaccessible [15][16].

**IV. TABLE 1: BENEFITS OF HYPER-AUTOMATION**

Sr No	Benefits	Description
1	Digital agility	As hyper-automation integrates multiple technologies, it gives organizations the ability to choose from a complete set of tools to meet their automated goals without the constraints that come with using a single technology [17].
2	Enhanced productivity	Hyper-automation significantly eliminates slow-moving and prone human errors, speeds up the process and reduces the time spent on error detection and correction [17].
3	Seamless Integration	Hyper-automation integrates technology into all systems and removes the silos between the legacy and modern systems. It also improves the visibility of various processes and integrates data to generate possible data [17].
4	Improved ROI	One of the most important business ventures brought by hyper-automation is the increase in revenue by reducing costs. Eliminates hand-held, heavy-duty touch points, and replaces them with lightweight, automated, highly customizable and customized processes. Gartner predicted that by 2024, organizations would reduce operating costs by 30% through a combination of hyper-automation technology and redesigned operating procedures [17].

**V. CONCLUSION**

Emerging technology such as AI is paired with automation to address complex issues and make it easier to operate. Hyper-automation may involve people, technically and people working together and working together. It uses technology to analyze big data and use information in its company as an influential policy maker; by improving business processes by reducing duplicate tasks and manual automation, hyper-automation transforms businesses. It allows companies to perform tasks consistently, accurately, and efficiently. As a result, prices are reduced, and customer sensitivity is often improved. Any new approach to business processes or infrastructure is subject to problems using hyper-automation.

Hyper-automation creates a host of automated instruments and is able to quickly solve complex problems. Many firms have invested in new technologies to deal with problems. With hyper-automation, a company can automatically perform productivity-enhancing tasks and provide the client with an additional value. Hyper-automation is a complex automation that seems fast, efficient, and makes small mistakes to complete tasks and processes. It therefore provides targeted outcomes and basic value requirements, such as revenue, cost savings, and risk management.

Hyper-automation is more than just making the machine help to perform a series of action steps. It can enable software to see and learn business processes and help improve them. Therefore, Hyper-automation will be an integral part of any business, where increasing efficiency is a privilege driven by RPA strategic plans.

**ACKNOWLEDGEMENTS**

We are pleased to present the research paper "AI / ML Augmented Hyper-automation" as part of the 'Master of Computer Application' curriculum. We express our deepest gratitude to our research paper guide Prof. Neha lodhe with patient guidance, enthusiastic encouragement, and the useful criticism of this research work.

## REFERENCES

- [1] F. B., F. F., L. Mastrogiacomo, M. Zaki, Research on product service systems, *J. Manuf. Technol. Manag.* (2021). June 1.
- [2] Y. Zhou, F.R. Yu, J. Chen, Y. Kuo, Cyber physical social systems a state-of-the-art survey, challenges and opportunities, *IEEE Community. Surv. Tutorials* 22 (1) (2019) 389–425. Dec 12.
- [3] M. Jacoby, T. U., Digital twin and IoT - current standards landscape, *Appl. Sci.* 10 (18) (2020) 6519. Jan.
- [4] A. Kronz, T. Thiel, 19 Digitization applied to automate freight paper processing, in: *RPA, De Gruyter Oldenbourg*, 2021, pp. 393–402. May 10.
- [5] S.H. Ivanov, *ROBONOMICS: J. Automated Econ.* 1 (11) (2021). Mar 14.
- [6] A. Varshney, N. Garg, K.S. Nagla, et al., Challenges in sensors tech for industry 4.0 for futuristic metrological apps, *MAPAN* 36 (2021) 215–226
- [7] S.C. Park, The 4<sup>th</sup> Ind. Revolution and implications for innovative cluster policies, *AI Soc.* 33 (3) (2018) 433–445. Aug.
- [8] K. Panetta, Hyper-automation, Blockchain, AI Security, DSCC, Autonomous Things Drive Disruption and Create Opportunities in This Year's Strategic Technology Trends, *Smarter with Gartner*, 2021
- [9] S. Chih-Yi, L. Bou-Wen, Attack and defense in patent-based competition: a new paradigm of strategic decision-making in the era of the 4<sup>th</sup> Ind. revolution, *Technol. Forecast. Soc. Change* 167 (2021)
- [10] B. Jankowska, E. Maria, Cygler, The case of the aviation valley in Poland, *Eur. Res. Manag. Bus. Econ.* 27 (2) (2021) 100150. May 1.
- [11] C.M. Profiroiu, C. Vlad, K. Sugiyama, K. K., F. Tajiri, State-of-the-Art technology practices in corporate comm. and global talent operations building and activating a cognitive May 1, *Rev. Manag. Comp. Int.* 21 (2) (2020) 136A, 45.
- [12] Y. Chen, Research on CNN image recognition algorithm based on computer big data, Feb 1, *J. Phys.: Conf. Ser.* 1744 (2) (2021), 022096.
- [13] S. G. D. H., R. M., An eradication of malicious node attack using a priority aware frequency domain polling in cyber-physical systems, *Eur. J. Mol. Clin. Med.* 1134–1147. Feb 4.
- [14] K. Kester, T. Archer, S. Bryant, Diffraction, transrational perspectives, and peace education 16 (3) (2019) 274–295. Sep 2.  
<https://www.valuelabs.com/blog/rpa-and-cognitive-ops/automation-beyond-rpa-and-ai/>
- [15] <https://www.valuelabs.com/blog/rpa-and-cognitive-ops/automation-beyond-rpa-and-ai/>
- [16] Pascal Bornet, Ian, Jochen Wirtz, *Intelligent Automation* (National University of Singapore, October 2020)
- [17] <https://www.processmaker.com/blog/what-is-hyper-automation>