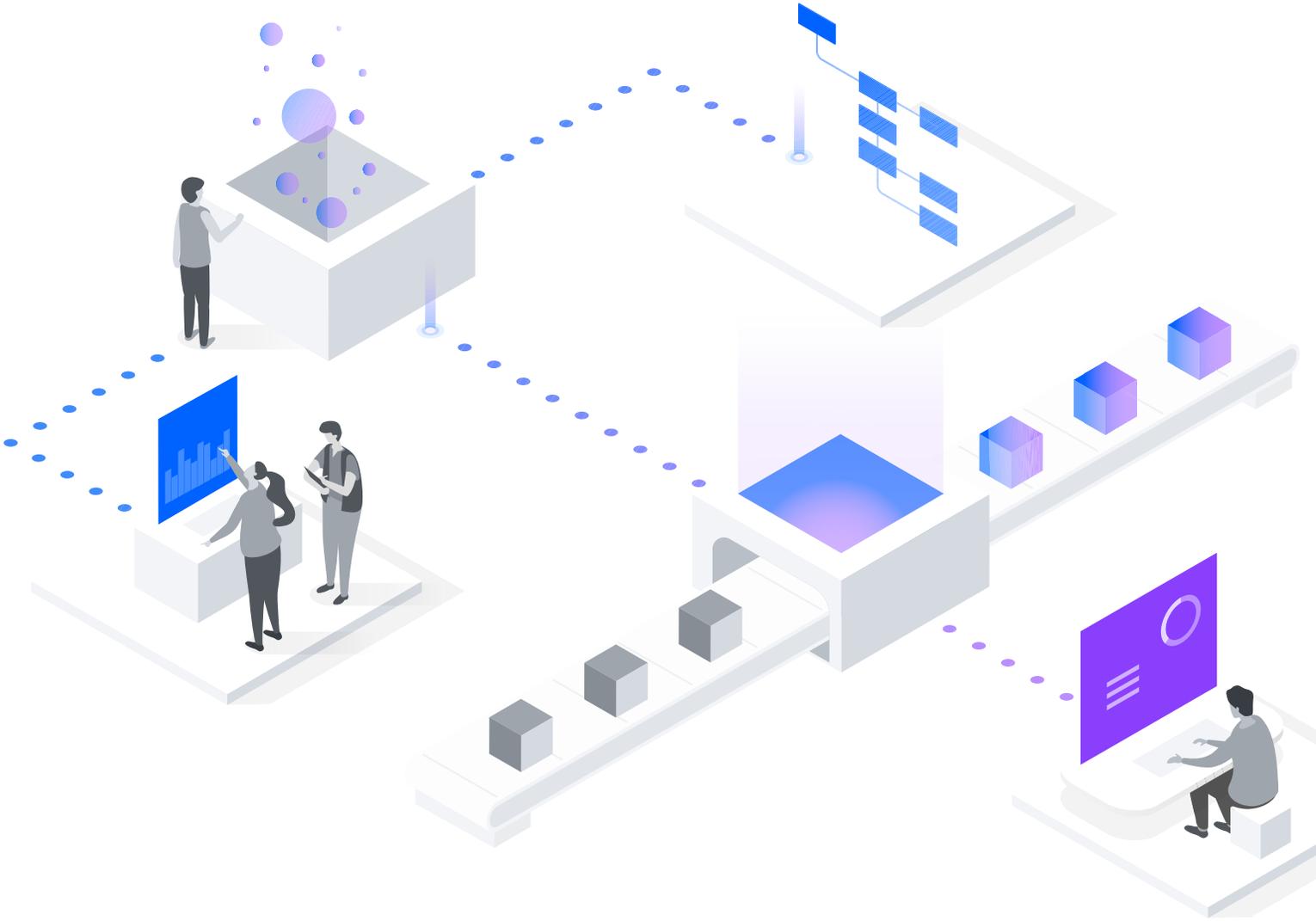


The Era of Extreme Automation



Why every
aspect of
automation is
changing –
including some
that have
previously been
ignored.

The critical need to accelerate enterprise transformation

This time it's different

Change is hard. And change at scale — business transformation at an enterprise level — comes with cost and risk, which is why many automation initiatives remained siloed and why digital readiness lagged for many firms. But a global pandemic has shifted the risk proposition to where failing to change is no longer

an option. Organizations must accelerate and scale business process automation in order to have the resiliency and agility to survive. Among the drivers of this change, there are three key elements to consider: volatile demand, industry disruption, and workforce productivity.

'We've started a lot of work with people who want to automate things that maybe they hadn't before because they want that flexibility. It's almost extreme automation.'
Ginni Rometty,

Businesses have had to handle massive demand spikes in everything from virtual service requests – travel cancellations, benefits inquiries – to physical products like household cleaning items.

New constraints disrupted existing operating models, requiring barbers to set up outside, lenders to create new types of products, and retailers to create curbside pickup systems.

A rapid wave of virtualization swept through previously co-located teams to maintain productivity, requiring employees to collaborate and complete work remotely.

In a world where people need to keep their distance, the need for contactless delivery, virtual interactions and decision making has become urgent and wide scale. Business models are pivoting rapidly to reflect new patterns – or the absence of patterns – in demand and buying behavior. Agility and adaptability are key. All of this while driving down operating costs, and maintaining iron-clad cyber security.

While many businesses have now digitalized much of their work, few have taken the next step, and reengineered operations across multiple parts of the enterprise in a manner allows them to be intelligent, resilient, and flexible. Operating models need to change, not just once but on an ongoing basis. The need for flexible on-demand production models and a virtual or hybrid human workforce will not disappear when a vaccine arrives or consumer demand normalizes.

Many of these drivers are encapsulated in the Cognitive Enterprise, a model for transformation that leverages the power of exponential technologies - including AI and automation - to change business models, reinvent processes, and reimagine the way we work.

Accelerating automation adoption

An extensive recent study from IBM's Institute for Business Value found clients planning to invest significantly in automation and AI in the next few years, not only to improve productivity and optimize costs, but also to protect and grow revenue, to improve customer and employee experience, and to create flexible operating models.

In addition, as HFS put it in a new study, "It took a pandemic to create the burning platform for automation". The number of enterprises entrusting automation to undertake complex, cross-enterprise work will grow by 7x within 3 years. The trend was already established – but the recent seismic shifts are accelerating that trend.

The number of enterprises entrusting automation to undertake complex, cross-enterprise work will grow by 7x within 3 years.

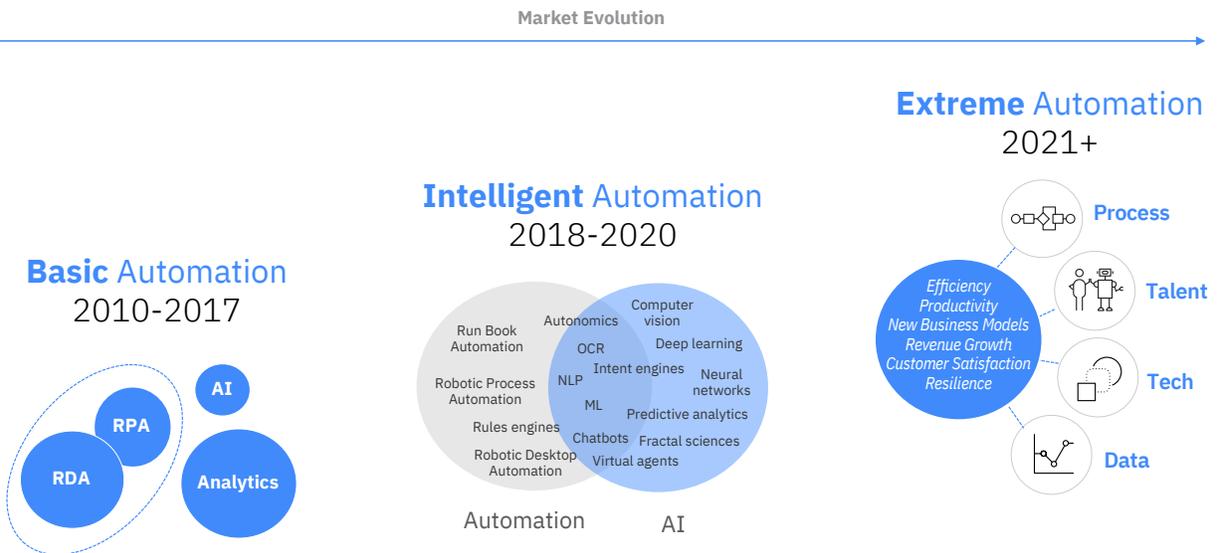
As automation technologies have evolved, with better integration and use of AI and complementary workflow technologies, the nature of the automation being adopted is more advanced than if this set of circumstances had emerged, say, five or ten years ago.

Automation: a continuous quest

Automation is in our DNA. Since the dawn of civilization, humans have developed tools to augment human capabilities. But it wasn't until the industrial revolution - with creations like water-powered spinning mills - that automation started making a significant impact on people's lives.

Workplace automation has evolved rapidly, in step with the explosion of digitization in the past twenty years. of the internet. Just as information work has changed, so have the automated solutions designed to support information workers. The infusion of artificial intelligence (AI) provided Robotic Process Automation (RPA) with the smarts to do more than simply execute a scripted task, by providing for decision making, machine learning, data capture, analytics, and much more.

Depending on the nature of the tasks being automated – whether highly specialized, or activities undertaken by a large proportion of the population – these evolving technologies have had a different impact. The automation of food production impacted almost everybody in a pre-industrial world. The automation of clerical tasks impacted only a narrow portion of the office-based population.



Which bring us to today, and the growing use of what is now termed 'intelligent automation', that is, automation and AI. It's a fast-paced landscape and the potential impact for this combination of complementary technologies is significant. Integrate intelligent automation with workflow technology, rules engines, analytics and the possibilities are significantly greater. This dawning recognition is the beginning of a new journey that entails way more than just technology: the journey to extreme automation.

A new era for intelligent automation

Because of the need to recover from the global pandemic, and the potential extensive reach of automation technologies, organizations are also beginning to think more broadly. Intelligent automation can be transformative, enabling radical changes in operating models – and the ability to keep on changing – and impacting a diverse range of roles and interactions across the enterprise. Not only applying automation to a specific role or a function, but across the entire enterprise. When intelligent automation is pervasive across functions, it becomes most impactful, and changes the customer experience directly.

“All organizations should identify new value-added jobs and equip their people with the required skills through training, certifications, and new talent/career models.”

Enlightened leaders recognize this potential. Executives report that growth is the most important objective driving technology investments. The ability to create new business models, improve operating cost ratios, and increase responsiveness are crucial to capturing growth – and automation can have a direct impact on these objectives. Automation leaders recognize that to get the most of this opportunity they need to think beyond the technology itself, to navigate the changes that automation’s expanding scope will deliver. This includes changing operating models to embrace a hybrid workforce, hiring and retaining talent that will thrive in a new workforce, and building a culture and toolset that guides and supports their people through the transformation.

The cultural landscape has shifted dramatically in 2020, owing to the widespread and rapid adoption of technologies for remote work. Digitization resisters have had to accept the inevitable and the ground has been prepared for ongoing expansion of digitization and automation programs. Change management efforts will now be pushing on an open door, allowing a shift in focus to enablement and engagement, rather than explanations and exhortation.

100%

of the workflow has been automated and we are seeing 0% error rates

Case study:

Consumer goods giant thinks big, but stays focussed

IBM partnered with this global organization to use analytics to inform use case identification and prioritization. This analysis is refreshed periodically so the program stays aligned to evolving business needs.

Automation has been used to reengineer dozens of other workflows across IT, finance, and supply chain. An extensive reskilling program has accompanied the technical implementation.

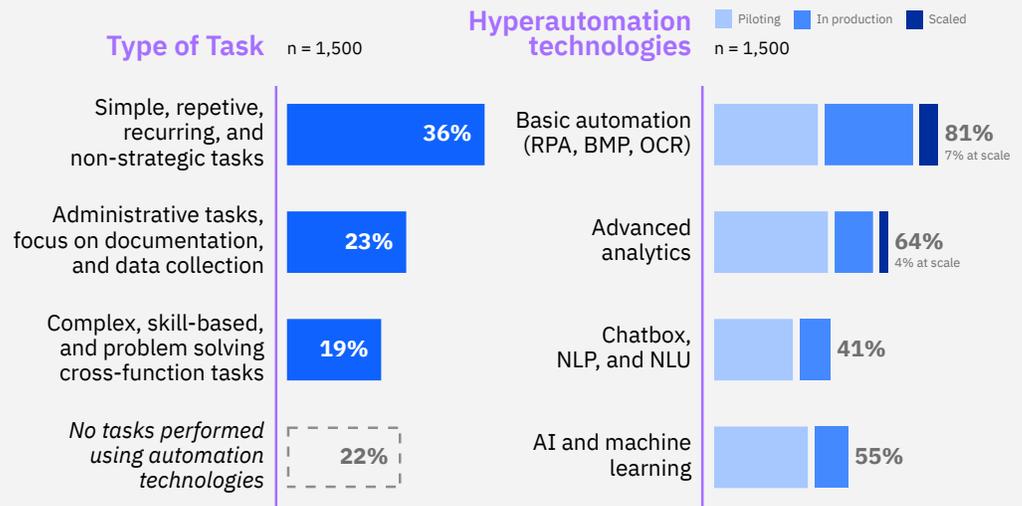
Deployed automation is being monitored within our Automation Operations Command Center – so the business of managing the automation itself is automated. In some areas, 100% of the workflow has been automated – and we are seeing 0% error rates in those new workflows.

This is a wide ranging automation program which fits the description of 'extreme' in the way it has encompassed business and IT – with dozens of digital workers being deployed – and the use of analytics to drive ongoing automation and optimization.

New opportunities require a new vision

Automation is not new - but as the technology has evolved the possibilities have expanded exponentially. Enterprises have the opportunity to set an entirely new vision. Those who fail to realize this opportunity, rescope their programs and set new objectives, will miss out.

While ~80% of the organizations are engaged in some form of automation, only a handful are effectively doing it at scale.



- 1 IBM IBV Intelligent Automation Study. Q9: Indicate the highest level of task your organization will allow intelligent machines to perform — today, in 2021, and in 2023. Select one for each time period.
- 2 IBM IBV Intelligent Automation Study. Q11: To what extent your organization has implemented the following technologies.

Automate everything

Recent research from the Institute of Business Value confirmed that growth is the top business objective driving tech investments. Automation has not always been included in the scope of those investments, relegated instead to a cost-out initiative. Today’s enlightened leaders understand that in a digital world, automation can do the heavy lifting that makes new routes to market. Freeing intelligent automation from the limits of back office productivity programs will result in transformed customer interactions and new modes of service delivery – and allow the business to pivot not just once but again and again, thanks to a digitized, nimble operating model.

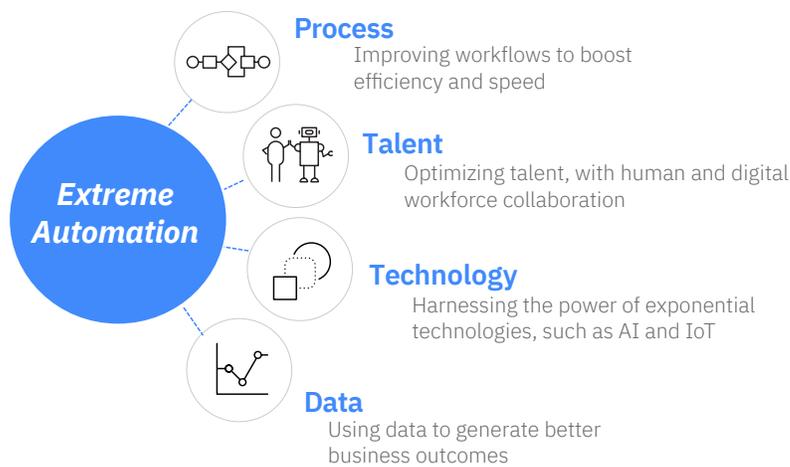
When intelligent automation is applied throughout the stack - beginning with infrastructure and applications and extending until it touches the customer experience - it has a transformative impact. Again, this approach can help clients bridge the gap between the operating model of today, and the cognitive enterprise they seek to become.



“Automation transforms each layer of the enterprise operating model.”

Extreme Automation: a definition

We define 'Extreme Automation' as the delivery of digitally transformed, technology-driven IT and business processes and operations, that are pervasive across an organization and are adaptive end-to-end, underpinned by exponential technologies and powered by a hybrid workforce. Extreme Automation acts as the heart of these workflows, pumping data around the transformed enterprise and supporting the vital activity of digital workers. These workflows not only drive additional efficiency and productivity gains but also improve customer experience, and allow for the creation of resilient, adaptive, and flexible business models.



Extreme Automation can be explained across four key dimensions. By contrast intelligent automation concepts tend to focus solely on technology.

Many automation programs are deploying a number of advanced technologies: in fact almost all of today's RPA implementations are augmenting that foundational technology. For example, chatbots leveraging NLP or an intelligent data capture capability can provide automated intake. Predictive analytics with some machine learning capabilities can act as a trigger for RPA. These are becoming commonplace in many implementations.

But if the scope of those implementations is restricted to a back office function, with cost-out objectives as the main driver, they cannot be considered Extreme Automation. If a number of tasks are being automated across a wide range of processes – with no fundamental change to the process landscape itself – we would not consider that Extreme Automation. And when automation – intelligent or otherwise – is being deployed with no commensurate shift in the way the workforce is being managed, again, we could not define that as Extreme Automation. The kind of programs we have just described will do a solid job of creating efficiencies and reducing operating costs – but they will not drive transformation and growth across the enterprise.

Case study:

Veteran's Benefits Administration takes a phased approach

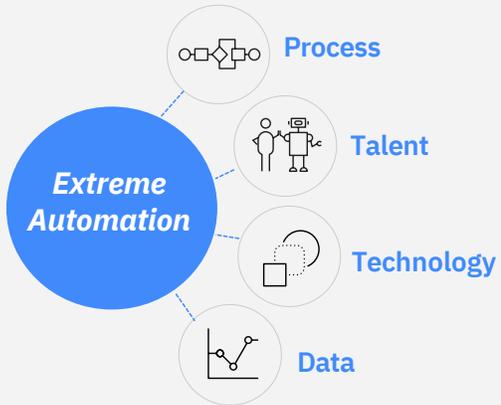
This important agency of the U.S. Department of Veterans Affairs has a broad vision for the use of AI with automation - and is going to get there one step at a time.

The first step was the deployment of a fairly simple digital worker to process the standard packets of incoming mail. Using OCR and Blue Prism, this digital worker is able to handle more than 30% of daily incoming mail packets. The next phase is to handle an additional category of more complex cases, taking the % handled by automation up to 60%. The effect on veterans has been immediate, with the claims intake leadtime reduced from 15 to 1 day. The capacity created allows current workforce to be retrained for higher value citizen-facing roles.

The journey doesn't stop there - over time, data driven insights and machine learning will increase ability to act upon trends, to react more quickly to national events, and to automate even more of this process.

Points of difference

Extreme Automation is different, because it enables the creation of new operating models by delivering transformation across four dimensions.



| Yesterday's Automation Program | Today's Extreme Automation Program |
|--|---|
| Automation of processes and tasks, without redesign. Automates within functional silos and with a primary focus on productivity gains. | End to end intelligent workflows. Focus on enterprise-wide workflows transforms the customer experience and drives growth, in tandem with efficiency. Allows for the creation of new, flexible business models. |
| Attended and unattended robots, supplementing a largely unchanged human workforce. Significant human intervention required to handle exceptions. | Powered by a hybrid workforce, orchestrating seamlessly robots and human workforce, in production and at scale. Automate first, before introducing humans. |
| Begins with RPA. Subsequently augments that with AI to expand the scope of work being automated. | Leverages exponential technologies seamlessly integrated and fueled by data – running both the business, and IT operations. |
| Vast digital exhaust being created – for consumption by another program, elsewhere in the organization. | Fuels intelligent workflows, provides digital workers with sight and decision-making capabilities, and delivers real-time insights to dynamically adjust workflows, continuously. |

Can culture keep up?

Our people, our working practices and our cultural norms have no choice but to keep up with this new pace of change. As outlined above, the pandemic accelerated the pace of digitization beyond recognition, shifting a huge proportion of work to virtual, cloud-based, digital environments in a matter of weeks. The path to extreme automation has been paved. The question is, how to embrace this wave of digitization so it drives a sustained, transformative shift in the way work gets done?

Extreme automation for the cognitive enterprise

Given the existential threats facing many enterprises, and the inherent risk in retaining the status quo, inaction is not an option. Extreme automation will power the digital workforce revolution. This new era will bring change like none other across all industries and business functions. Enterprises need to be ready to move at pace to capture the opportunity – or be left standing.

Recent research from IBM's Institute of Business Value identified three imperatives for scaling automation across the enterprise: securing alignment on business impacts, delivering within an increasingly complex technology landscape, and building trust in automation. To embrace extreme automation, leaders need to proactively tackle those imperatives.

Extreme automation is a key enablement for the Cognitive Enterprise. Specifically, in creating market-making business platforms, engineering new, intelligent workflows, and supporting a transformed enterprise experience and approach to the way we work.

Join the shift to extreme automation: actions for leaders

Invest in Market-making platforms

- Allow intelligent automation to support the creation of a new hybrid workforce and a dynamic and adaptive business model.
- Adopt a platform that is built for scale. A platform provides a critical foundation for the new digital age, including tooling and environments to promote design and build of new automation solutions in an agile, collaborative manner. It also serves as the process “plant” for building at scale. And it drives alignment, by providing for realtime visibility into the performance of automation, of automated workflows, and of the digital workforce.

Reinvent the way work gets done with Intelligent workflows

- Consider intelligent workflows. Reimagine your business and reengineer the way work gets done – at a micro, CX level but also with the potential to impact the entire operating model. The right automation platform will harness data and analytics to power continuing optimization.
- Integrate data for learning and insights: Infuse AI and analytics (machine learning, natural language processing, etc.) into workflows. Powered by facts and data, decisions based on maximizing corporate success

Enhance experience - engage across the enterprise

- Engage everyone. Collaborate across the enterprise; Secure organizational buy-in; manage the change, champion the cause
- This goes way beyond than technology: Extreme automation cannot be treated like any other IT implementation initiative. The digital age workforce of humans, machines, and intelligent virtual workers needs a new approach. We recommend a lifecycle performance management approach to developing intelligent workflows and their component parts, just as is taken to managing teams and individuals.



Tom Ivory
*Senior Partner and
Global Leader*
IBM Automation,
Global Business Services



Marco Albertoni
*Global COO and Head of
Strategy and Innovation*
IBM Automation,
Global Business Services



Katie Sotheran
*Associate Partner and
Communications Lead*
IBM Automation,
Global Business Services

**To learn more about extreme automation,
Visit ibm.com/automation**

Resources

- ¹ Institute of Business Value, Automation and the Future of Work, August 2020
- ² HFS Research, Coping with Covid-19, April 2020
- ³ Institute of Business Value, Automation and the Future of Work, August 2020