

# Changing how we work: the impact of automation on today's enterprise



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## Foreword

Throughout history, new technologies have changed the shape of the labor market—both destroying and creating jobs in a process that the economists Joseph Schumpeter described as “creative destruction.”

As the maturity of autonomic, artificial intelligence, machine learning and cognitive techniques increases, we are now on the cusp of another wave of creative destruction.

New methods of automation are creating an era of constant innovation in which business processes are being redesigned, rewritten and—where possible—eliminated. The traditional outcomes sought by IT departments (increased productivity and cost-effectiveness) are being married with new drivers like business agility and creativity. Businesses need to do new things. People want to work differently. Automation is making it possible.

Capgemini introduced Automation Drive earlier this year, which combines machine power with business vision to deliver new ways of working, drive innovation and increase business value. Our Suite of Tools and Services enable organizations to embark on a new journey—rethinking, reimagining the way they do business.

## New ways of working

The concept of automation can sometimes be viewed in a negative light. In the press and analyst community particularly, we often see stories about “predicted job losses” as the “robots take over.” Capgemini’s view is more optimistic. Automation is not as simple as replacing man with machine; it is about businesses using advancements in technology to optimize their operations and orchestrate new and innovative ways of working.

This is the path that the software industry set us on many years ago with the introduction of basic scripts to automate repetitive tasks. Automation has now reached a maturity that allows us to do far more. We apply four levels of automation, each building on the previous with smarter capabilities that release more human capacity:

- **Reliability, Availability and Serviceability (RAS)**—design principles used to make systems more resilient through powerful script-based techniques.
- **Tool-Based Automation**—use of sophisticated tools to execute critical tasks and processes, reducing manual effort and optimizing staff utilization.

- **Autonomic Systems**—systems that can manage themselves, thereby attaining a higher degree of operational efficiency.
- **Cognitive Computing and Artificial Intelligence**—self-adapting and self-aware systems capable of performing a broad variety of intelligent tasks, emulating human intelligence and influencing key business outcomes.

Automation uses advances in technology to optimize business operations and orchestrate new and innovative ways of working.

### Client Case:

Company in the global medical devices manufacturing industry: A better flu forecast accuracy through predictive analytics

A company in the global medical devices manufacturing industry needed to refine their inventory planning to capture market demand. With the implementation of our Big Data—SAP HANA-based solution, part of our Automation Drive—after Suite they were able to better visualize demand and improve Demand Forecast Visibility. Through predictive analytics, flu forecast accuracy rose to 88%.

## Becoming a digital enterprise

A primary goal for businesses today is to become a “digital enterprise,” so they can enter new markets, adopt new channels and compete with agile new competitors. However, the legacy of old systems, manual processes and analog thinking can be a barrier to this. Furthermore, there can be a reluctance to embrace digital change due to a lack of awareness around what the full transformation will entail.

We believe that automation should be viewed positively in terms of what it will enable:

- Transformation of processes to compete with digital competitors
- Redirection of resources from repetitive tasks toward higher-value business activity
- More creative and fulfilling job roles for employees
- Agility, competitiveness and new ideas throughout the business

Automation is a key enabler of the digital enterprise—and your future success

## Taking an integrated, practical approach

Automation is here today and is making a difference for forward-looking businesses. Organizations that don’t embrace it are set to fall behind, so action is needed now. We believe an integrated approach to automation is required that:

- Drives operational improvements
- Manages the impact on human effort (positively)

In this document, we explore how such an approach could be achieved and what it means practically for both staff and senior business leaders. We also set out some examples of how automation is being used today, and how it is evolving the way businesses are thinking and operating.

Automation deserves your attention now

# “What can automation really do for my business?”

When you automate a routine or repetitive task using software or robotics etc., you gain immediate certainty over how that task will be completed. You eliminate human error, you know when it will be performed and how long it will take. You are guaranteed a level of performance.

All of this gives you greater control and understanding over your operations, which you can then optimize to improve efficiency and quality. When it is done well, automation can also highlight to the business a whole host of inefficient processes that can be redesigned or eliminated—things that often only exist because “we’ve always done it that way.”

## Client Case:

Shipping & Logistics client:  
Robotization of dispute processing driving efficiency, quality and control improvements

A global shipping and logistics company automated repetitive processes like sorting, data exploration and template population. As a result, our client saw benefits spanning both IT and Business, which included:

- quality improvement from 87.7% to 99.5%
- 30% increase in offshore team utilization
- dispute resolution time reduced from 5.9 to 1.4 days
- Customer Experience Ranking from #5 to #1 in Europe

Automating dispute processing drove efficiency, quality and “improving control.”

Automation also allows complex operations to be performed at massive scale. This means you can generate business insights at a level that was unimaginable before. Think about the masses of customer data being generated through social media, multi-channel interfaces, IoT etc. Only through an automated approach to aggregating, managing and segmenting that data can it be of any use. Only through intelligent analytics, clever algorithms and deep-dive exploration can the business use it meaningfully.

Automation enables businesses to **embark on a new journey—rethinking, reimagining the way to do business.**

## How we do it: a One Platform approach to automation

Capgemini’s Automation Drive strategy is enabled by our partner Automic One Platform solution, which provides key capabilities around service orchestration, release automation and workload automation.

This has driven particular benefits for our automation of SAP, including:

- 20–400x performance improvement in custom and standard reports
- 4-hour reduction in invoice production
- 95% reduction in system copy post-processing (35 days to 1 day)

We are now implementing this for several of our clients, which is helping them to improve decision-making, drive business agility, outsource non-core functions, improve efficiency, reduce costs and effectively address their governance, risk and compliance requirements.

# “Which parts of my business should I automate?”

It is easy to picture automation in the context of a production line, with a robotic arm welding parts to a car, for example—but this is just one element of what automation can do. For example, the software industry has been delivering automation for years through things like ERP and CRM—taking manual repetitive tasks out of the hands of humans.

In today's era of cloud, mobile and IoT, this idea of software-based automation has exploded. It is now being applied right across the organization, from the production line to the back office to all manner of customer-facing channels.

Automation does not deliver value to specific parts of the business, or have a more dominant role in specific industries or applications—it has its place across **all** areas of **all** business (albeit at varying scale and differing levels of maturity). Integrating powerful automation tools into every process and application drives innovation and leads to a competitiveness advantage.

Across all types of organization, Line of Business heads are building compelling cases for automation projects to drive their KPIs. They are taking these to the C-level for sponsorship and endorsement. Consequently, automation is finding its place as a key enabler of the move to a digital enterprise.

## Capgemini Case:

Capgemini Resources supply chain with IBM Watson: Better fulfillment and forecasting for our capacity

Levering our partner technology, offered through the Automation Drive Suite, Capgemini was able to implement cognitive services to improve our resource supply chain. Benefits achieved by our company included:

- improved operational fulfillment
- better forecasting: 6-month visibility on demand and supply

These translated to better management of our resource bench, more accurate staffing, the ability to anticipate gaps, simplified rotation and intake of resources.

Here are some examples of how automation can be deployed in a typical large organization:



**In the back office**—using RPA to automate huge numbers of mechanistic, repetitive, mundane manual tasks like invoice processing, and taking it further with artificial intelligence, we can learn how to complete processes more efficiently



**In the field**—using IoT sensors to detect and alert you to maintenance issues, before they disrupt day-to-day operations



**In the data center**—deploying code to spin up and configure new servers automatically, in response to peaks in user demand



**For business intelligence**—augmenting massive IoT datasets with other data streams to reveal new insights on business operations, customer behaviors etc.



**On the service desk**—where agents are freed from answering routine enquiries by virtual agents that can understand and respond appropriately



**Across customer-service channels**—whether it be through virtual chat agents, natural language processing that directs customers to the right department, or voice technologies that speak answers to questions and instructions

Automation can add value right across the business. It is therefore important that the platform you adopt is capable of serving the whole spectrum of potential automation projects—from the infrastructure layer right through to your customer-facing channels.

## How we do it: Smart RPA

Capgemini has partnered with Celatone (a specialist Artificial Intelligence company) to strengthen our Robotic Process Automation offer, another key solution within our Automation Drive suite. Our approach is to evaluate end-to-end processes that adhere to certain specific characteristics, and adjust them for straight-through processing to minimize exceptions and improve productivity.

# “Automation is just about reducing costs, isn't it?”

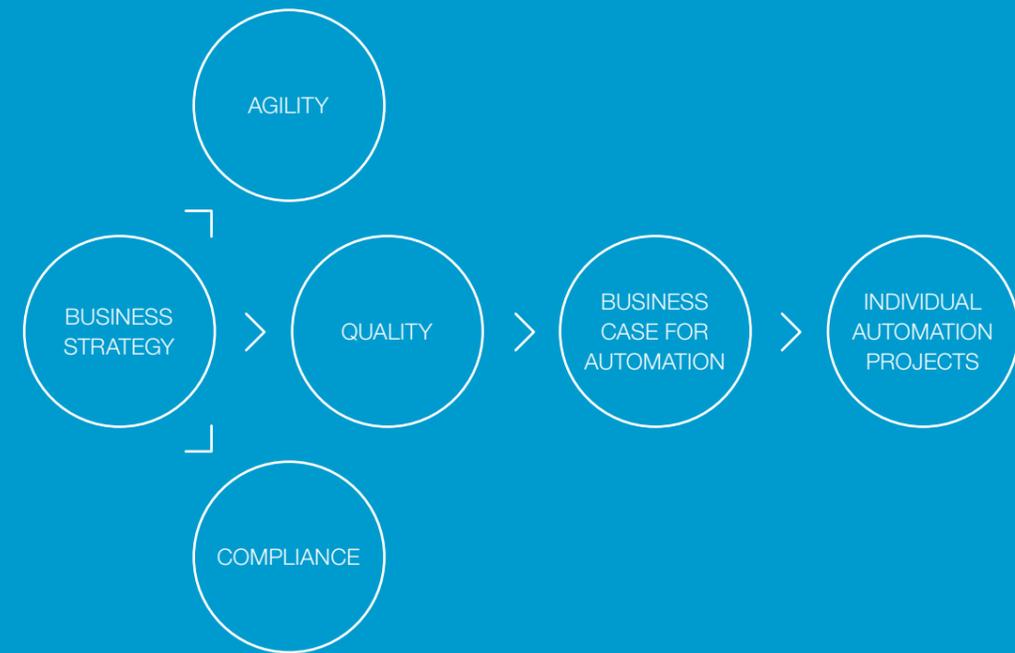
Cost reduction will be an outcome of your automation strategy (most change programs look to reduce costs in some way), but it should not be the principal driver.

The wider business goals of transforming to a digital enterprise, ensuring competitiveness and driving growth will be at the heart of your strategy, and the key outputs will be:

- **Increasing agility**—so you can respond to, or create, disruption in the market, and stay ahead of your competitors
- **Improving efficiency and quality**—so you can deliver better performance to internal and external clients, driving up your reputation
- **Strengthening resilience**—so you can pursue growth with the assurance that your foundations are robust

These are the core elements around which to build a business case for automation, because they link so closely back to the overarching business strategy. Getting it in place will require upfront investment, so articulating the return on that investment will be critical.

Cost savings may form a part of this ROI calculation—for example at a project level, where you can estimate the productivity gains of automating a specific set of back-office processes. The most valuable return, however, will come from reinvesting and redeploying the resources that you liberate through automation. We cover this in more detail over the next few pages.



## Client Case:

Test Automation client: Smart, self-service test automation solution for complex enterprises

Capgemini used a smart, self-service test automation solution offered through our Automation Drive Suite for a client with a complex enterprise. By utilizing intelligent scheduling and load balancing for continuous testing our client achieved:

- 98% testing effectiveness with defect forensics and automated governance
- 85% regression automation through scriptless automation
- 20–25% faster cycle time

## How we do it: intelligent self-service test automation platform

The Capgemini Automation Drive suite includes a self-service testing solution which helps us achieve regression automation through scriptless automation with minimal skill dependency. Combining proprietary accelerators and IP, commercial testing packages and open source stack, our Intelligent Test Automation Platform complies with open services to drive excellence across the software development lifecycle. The solution includes intelligent scheduling and load balancing for continuous testing, as well as providing automated optimization through coverage analysis and self-correction mechanisms.

# “What impact will automation have on my people and culture?”

This question often arises during discussions on business automation. It tends to prompt concerns about the impact on the workforce (“I will lose my job to a machine”), about changes to managerial structures (“My department will probably close down”) and the sustainability of established organizational cultures (“Our ethos is all about people—we do not want to lose that”).

These are all valid and understandable concerns. Yet they have all been played out before in previous eras of big technology change—from the introduction of computers, through to advances in software, to the email/internet revolution and, more recently, in the drive to cloud and mobile.

Automation will undoubtedly change the way businesses operate and how people work—but not necessarily in a negative way:

- People will be freed from repetitive tasks to be more creative and do more fulfilling roles
- People will have the opportunity to upskill and take their career to a higher level
- Workforces will not necessarily decrease in number, but the nature of the jobs within them will
- Automation will create new things for people to do
- People will need to oversee, manage and develop automation in line with business strategy

## Client Case:

Water Company—Supply water and water recycling services to more than six million customers through End User Automation using ‘Self-Manage’, ‘Self-Heal’ and ‘Eva—Virtual Assistant’

A water supply and recycling company with more than six million customers needed to automate their end-user services. Using tools from our Automation Drive Suite which “self-manage” and “self-heal” along with “Eva—Virtual Assistant” the company was able to positively impact the end user experience:

- 82% success rate of dialogs with Eva
- 25% reduction in P2 known errors and alerts due to self-healing
- 20% incident reduction due to self-managing capabilities

## Adam’s weekly routine:

- 40 hours on the Service Desk, responding to Level 1 incidents
- Tied to his keyboard and desk, solving a constant flow of tickets
- Limited opportunity to develop his skills or knowledge

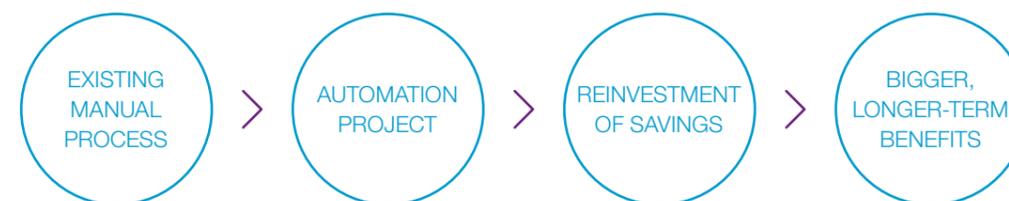
## Until...

- An automation solution is deployed for Level 1 tickets
- Adam is enrolled on an upskilling program
- He leaves the Service Desk to work as a Project Manager
- His salary, and job satisfaction, increases
- The business spends less on expensive PM contractors

## “So it can actually be a win-win scenario?”

Yes, when done right, automation will benefit both the business and the workforce. The best return on automation investment will be achieved by investing the initial cost and resource savings into innovation funds and upskilling programs. These programs will provide the foundations for the business to achieve its growth and transformation objectives, delivered by a workforce that is freed to take on more interesting, creative and innovation-centric job roles.

**A positive people culture will drive competitiveness. By freeing staff from repetitive tasks and poor processes, they will be more motivated and more innovative. Businesses will be rewarded for accommodating the needs of a new, liberated workforce with a program that responds to the evolution of technology.**



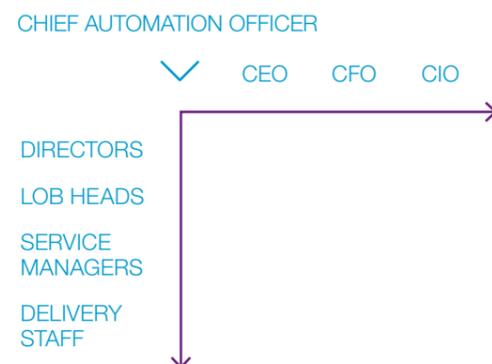
# “Who should take ownership of automation in my business?”

Because automation is driven by technology, you would be forgiven for thinking that it sits under the remit of the CIO. However, as we have seen, automation is not just ‘the next thing being rolled out by IT,’ it is becoming a strategic imperative that touches every part of the organization in order to drive growth and transformation objectives.

Therefore, ownership has to be shared across business units, with collective buy-in from directors, LOB heads, managers, and delivery staff. The CIO has a key role to play in delivering the automation platform on which individual projects can be implemented, but the outcomes and metrics associated with those projects should be owned at BU level.

If you are looking for one person in the organization with accountability for driving through an automation strategy, it would be your Chief Transformation Officer or someone with executive responsibility for delivering change programs. Some organizations may appoint a Chief Automation Officer to elevate the importance of automation. This would certainly issue a strong message of intent to the rest of the business.

## Driving buy-in for automation across the board and through the business



### Essentials for automation success

- Single point of accountability to ensure momentum
- Board sponsorship to deliver credibility
- Structured program to provide transparency
- Common principles to allow collective buy-in

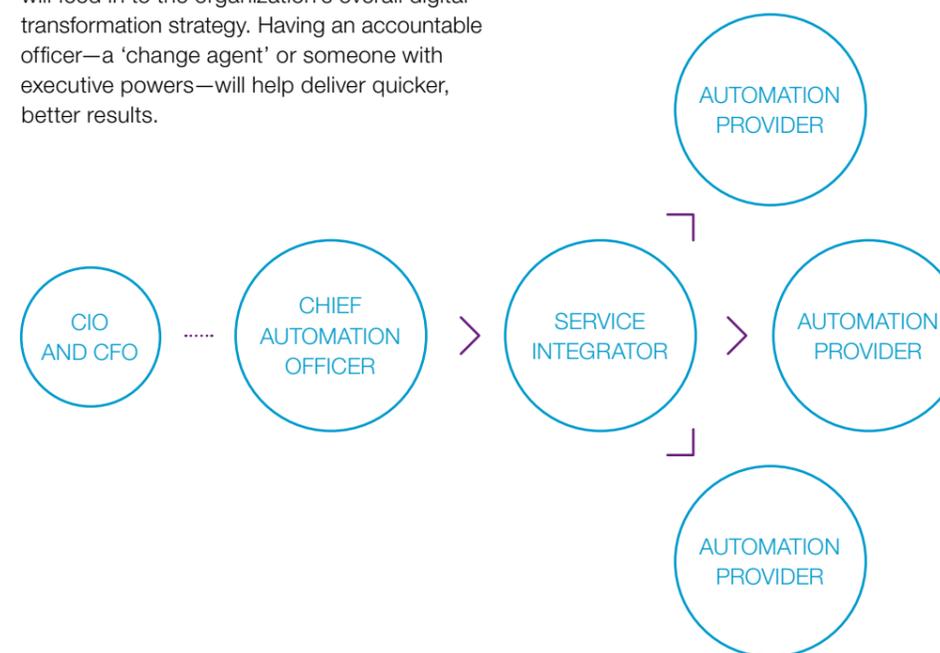
Given that ownership is spread across different business units, and different flavours of automation will exist across them, the accountable officer has to be someone who can unify. Core skills will be the ability to navigate departments and cultures and bring people together around collective principles.

An automation culture can't be achieved in silos; it needs a structured, common program that will feed in to the organization's overall digital transformation strategy. Having an accountable officer—a 'change agent' or someone with executive powers—will help deliver quicker, better results.

### “Where do they turn for support?”

Typically, you would expect the CFO and CIO to be key supporters of the automation strategy. The accountable officer should be working closely with them to free capital for investment and to implement a robust platform on which automation initiatives can be delivered.

Furthermore, there is a role for external support, such as a Service Integrator, to orchestrate change and bring different stakeholders together. An SI can also provide a vital connection to the supplier market (often dominated by start-ups, of which up to 90% typically fail\*) and serve as a trusted advisor on who to partner with.



\* Startup Genome Report Extra on Premature Scaling, a 67-page analysis that was coauthored by researchers from UC Berkeley & Stanford

# “What impact will automation have on our security and compliance?”

The idea of a piece of software, a virtual machine or an artificial agent having access to critical business data can provoke different feelings.

From a cautious position, there can be concerns over the security of that automated process. Could it be hacked? Will it become corrupted? What if it exposes the business to risk? Does it compromise our compliance with regulations? And if processes are being hosted in the cloud, what assurances can our cloud provider really deliver?

The flipside of this is that automation eliminates perhaps the biggest threat to security and compliance: human error. When done right, automation will reduce the risk of data leaks because processes are followed precisely by a machine, without deviation or distraction. Furthermore, automation will bring a transparency to your operations that serves compliance perfectly —you will get a complete digital audit trail to hand over to inspectors with full confidence.

The concerns around cloud tend to focus on potential data breaches and compromised credentials from within shared server/storage environments. However, the industry is increasingly being dominated by just a handful of cloud providers (Amazon, Microsoft, Google) who are investing massive resources into alleviating those concerns.

Looking further forward, as cognitive computing and machine learning become more pervasive, security threats will be detected far earlier. Deep system monitoring and predictive analytics will identify threats and prompt an intervention before any impact on operations.



## How we do it: securely managing complex IT systems



Capgemini use HP Operations Orchestrator (HPOO) to manage various IT systems as part of our Automation Drive suite. Along with automated provisioning and management, it provides us with self-healing, self-optimizing security of systems, which ensures robust governance over services. For our clients, HPOO has yielded a 50% improvement in the accuracy of IT changes versus manual execution—reducing the impact of human error.

# Best practice tips for implementing automation

Best practice has to reflect the conditions of the age. Where once it was accepted practice to spend time evaluating a range of products from different solution providers, to issue lengthy RFPs and consult as widely as possible before implementation, the rules have now changed.

The digital revolution has torn open traditional business markets. Start-ups are disrupting business models and becoming market leaders quicker than ever. Established companies (and even whole industries) face unprecedented threats to their existence.

You need to be able to react quickly to new opportunities, get new initiatives up and running to win market share, but not be adversely impacted if those initiatives don't work out. Agility is key.

The same is true when thinking about automation projects. Here are some core principles to follow:

- Start small and fast
- Choose a project most likely to succeed (success will breed success)
- Use open standards; don't get tied in to proprietary technology
- Make sure you can swap new technology in and out
- Make sure whatever you choose can be plugged in to your existing platforms...
- And that it can be ported across to different platforms if you choose to scale up

## How we do it: Applied Innovation Exchange

Underpinning Capgemini's Automation Drive strategy is the Applied Innovation Exchange (AIE), a global platform designed to enable our clients to discover relevant innovations and to contextualize and experiment with them within their specific industry focus. It enables our clients to proactively plan for the various technology and business shifts that are confronting them on a daily basis.

By bringing together a broad community of designers, technologists, sector experts, business and technology partners, academics, research organizations and start-ups, AIE provides the opportunity for our clients to investigate, contextualize and understand the most relevant innovations for their business, helping them to realize the value of business innovation at speed and scale, securely and sustainably using our proven AIE Framework.

For more information visit:

[www.capgemini.com/AutomationDrive](http://www.capgemini.com/AutomationDrive)



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