

Reimagining business through automation

How new approaches to automation are breaking down traditional business barriers



AUTOMATION DRIVE



Automation is currently a massive talking point in business circles, and a lot is being written about its long-term impact on people, operations and customer experience. Rather than add more to the speculation on future trends, we thought it would be useful to reflect on why automation is happening today, how businesses are benefiting from it and where it is likely to go in the short term.

First, let's consider what went before automation. Prior to the development of robots, machines or algorithms, people did pretty much everything in an organization—from setting the strategy and vision, to the day-to-day business processes to the management of all the data.

Yet as we've progressed into the information age, there's no longer the human capacity to sustain this approach. Data volumes have exploded, and market competition has intensified, compelling businesses to find new ways to respond to opportunities in real time. This is what's driving automation. Technologies that can monitor systems, analyze datasets and carry out tasks on behalf of people—faster, more efficiently, 24/7, without error.

That's not to say automation is taking over though. People still need to provide robots with the instructional knowledge they need to perform their tasks. People still need to decide what will be automated, and how. People still provide the creativity, imagination and ambition to push the boundaries of what business and technology can achieve.

Human collaboration is key

- Modern airplanes carry more people, over greater distances, in increasingly busy skies.
- They require advanced flight management systems with all manner of sensors and navigational technology to keep airborne safely.
- But they also still require a flight crew to provide instructions and make critical decisions.

Automation across the enterprise

We typically see automation technologies implemented across three key areas of the business: **data, processes and human interaction.**

The first of these reflects how we are now collecting exponential volumes of information about our operations, our customers, our partners, our suppliers, etc. There is so much data coming in, it's now impossible for humans to process it efficiently and extract value from it. So we automate; we ask computers to analyze the data for us, looking for trends or patterns that will inform future decisions.

At a process level, robots will happily undertake repetitive business and IT tasks (invoicing, payment processing, server provisioning, etc.) with greater speed and accuracy than their human counterparts. These rules-based processes can be completed 24/7, with no risk of error, freeing up human resource for more creative and fulfilling roles.

In the realm of human interaction, we are seeing a boom in virtual assistants that automate many of the tasks a typical helpdesk or call center might provide. Software bots analyze our language (whether spoken or typed) to provide intuitive responses—cutting out the need for costly and timely human intervention to solve basic queries.

The next level – convergence

In each of the above examples (data, processes, human interaction), we are seeing innovative automation solutions deployed to perform specific tasks and functions. They are achieving great outcomes—albeit for different and independent parts of the business. The real value will come as they start to join up and converge, freeing people to think differently about how they run their operations.

The next level of automation could see the emergence of autonomous robots that cross over and deliver on all three areas—enabling businesses to really push the boundaries of what's possible. For example, we could see robots that combine natural language capabilities with big data analysis to respond more accurately and intuitively in real time. Robots that use their analytics capabilities to proactively improve the processes they've been asked to follow. Robots that can be redeployed

instantly to a different process, in a different department, without lengthy reprogramming or transfer of ownership.

Automation is definitely heading toward this cognitive era, where robots will start to make informed decisions at unimagined scale and pace. Their ability to absorb information, flex to different working models and respond intuitively to people's requirements should rapidly break down traditional barriers to growth, eliminating the problems of silo-based working and tacit knowledge. They will empower humans to tackle new challenges in new ways—across business, economics, society and the environment.

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Automation as we know it

- **Data:** a chess computer is given millions of examples of previous chess games (plus the rules of the game), so it can calculate the best next move.
- **Processes:** a robot is programmed to follow a long and complex command script to provision a new server, at speed, without distraction or error.
- **Human interaction:** a virtual assistant is asked to “book me a long weekend in Rome” based on my tastes, my calendar and budget constraints.



André Cichowlas

Head of Group Delivery

For an inside perspective on automation from one of the world's leading IT providers, we asked Capgemini's André Cichowlas (Head of Group Delivery) for his view on recent developments in automation and whether we are on the verge of entering the cognitive era.

On the cognitive cusp

Q. André, what's your take on the current trend for automation? And is it about to take off in a new way, like everyone's talking about?

A. There's certainly a lot of talking right now! But also a lot of big developments to justify it. Automation technology is accelerating at such a pace, it seems every day there's a new startup in the headlines—and we've all seen how deep the big tech players are investing in it. They don't put billions into something without reason. So I've no doubt that automation is going to play an ever-bigger role in our consumer and business lives. And to address the second part of your question, yes, I believe we're already seeing a new generation of automation technology that will bring cognitive computing to the fore.

Q. It's a term we hear a lot. What does "cognitive" mean for you?

A. If we look at the development of automation to date, it's been about moving from "tacit" knowledge to "explicit" knowledge; i.e., before automation, we had people as the purveyors of knowledge in an organization—and we relied on them to do everything. Whereas now, we program robots and machines to do things on our behalf. But they only do what they're told; they require "explicit" instructions. For me, "cognitive" is the next step, whereby robots can start to make decisions for themselves and start to build up their own knowledge, not just what they've inherited from humans.

Let me give you an example from everyday life—catching a flight. Think about all the different airport arrangements going on behind the scenes: the check-in desks, security gates, baggage handlers, runway slots, etc. If a flight is delayed, they all need to be changed and rebooked, which would be a nightmare for staff to do themselves. So it's typically done by a robot, which has been programmed to analyze the available data and update arrangements in real time. It will only pass decisions back to staff if something falls outside its command script. Cognitive will take it one step further. Robots will be able to solve problems themselves and automate the entire process.

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“ We see automation not as a platform or a technology, but as part of a bigger business solution – whether it’s a CRM or ERP system, or a business process outsourcing arrangement. It’s not automation for the sake of automation, but automation with a very specific business purpose.

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Q. How is Capgemini embracing the automation trend? Is it something your clients are clamoring for?

A. To be honest, it’s business as usual for us. We’ve been helping our clients benefit from automation for many years, working with external partners and developing our own automation services. It’s what we use to deliver efficiencies and drive cost savings for our clients.

I grant you it is a particularly hot topic at the moment though—maybe because a lot of vendors are out there actively promoting their individual automation platforms. For our clients, however, this approach of having a single automation platform to serve multiple purposes doesn’t tend to stack up. They want the best possible fit for their needs, not a one-size approach that they have to adapt to.

We see it more like this: Technology is constantly evolving, so let’s not restrict clients to a certain platform or vendor, let’s work with the best of everything that’s out there—from IBM Watson, to the latest AI startup—and let’s learn all we can from previous client engagements to benefit the next.

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Q. Can you expand on that for us? How are your clients benefiting from automation today?

A. Absolutely, we have some great examples of how businesses are transforming their operations through automation.

At an IT monitoring level, we help companies with massive legacy infrastructures get more visibility on where problems are occurring. For example, for one of the world’s largest mass media and entertainment conglomerates, we brought thousands of server processes and machine agents under centralized management. This reduced their app incidents by over 30% and helped protect their online revenues.

In healthcare, we combined this continuous monitoring approach with cognitive services to help predict flu outbreaks more accurately (using weather and social media data). This allowed the client to better anticipate demand for flu shots, so they could optimize the supply chain for the maintenance of their medical devices.

Within Capgemini ourselves, we’re using IBM Watson to build a six-month forecast of demand for our services, and then linking this with our external supply chain to ensure we have the right staffing levels in place.

So yes, lots of good stories about how clients are seeking new ways to innovate. The value we add is in helping them to navigate change—and rethinking and reimagining the way they do business.

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Q. You talked about using a mix of internal and external solutions/services, not a single platform. Why does Capgemini take that approach?

A. I'm glad you asked, because that's a really key principle to getting the most from automation. We make a promise to our clients that we'll help them turn automation into an engine for business growth—and this means being acutely focused on their specific needs, not selling them in a standardized offer.

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In terms of what this looks like, we describe it as an “integrated automation suite,” which has three distinct elements to help us drive value across the business. These are:

- Our automation framework, which defines the areas that automation touches across business and IT
- Our portfolio of tools, covering external partner offerings and internal services, and
- Our catalog of services, which aggregates the techniques and practices we have learned over the years to provide a knowledge source for all parts of the business to benefit from.

There's also Capgemini's Applied Innovation Exchange, which brings clients, partners and our technology experts together to road test ideas and move prototypes into real solutions. It's here where our connections with the startup community come to the fore, and we are able to introduce clients to the innovators they need, but typically find hard to discover.

Q. So there's lots of innovation going on. But where's it all going?

A. The pace of change is so fast these days, I'm not inclined to make far-off predictions! But if we look at how far automation has come in the last ten years, I'd say the emergence of autonomous robots with decision-making capabilities is a near certainty. We're already seeing the convergence of different forms of automation—monitoring of systems, actioning of basic tasks, big computational data analysis and natural language skills. So when these four areas come together, there will be big value gains for both business and IT. We'll see a new wave of innovation as automation allows people's creativity and imagination to realize all sorts of new possibilities.

Personally, I'm intrigued by the development of software bots and how we'll put them to work in the coming months and years. In Capgemini, for example, we've been using them to shortlist candidates for jobs—and the possibilities are fairly limitless as to what they can be deployed for.

These are certainly exciting times, but I'm not getting too carried away. Automation itself is not new and we're doing it a lot already. It's just now developing at a completely new pace, which is focusing minds on how we use it, and how we reimagine our approach to business.

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About Capgemini

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