

Robotic Process Automation

Special Edition

Summer
2017



**THE AUTOMATION
REVOLUTION –**
A PLETHORA OF
OPPORTUNITIES FOR
ORGANIZATIONS AND
INDIVIDUALS

People matter, results count.



The rise of automation is bringing a plethora of opportunities to both organizations and individuals. Capgemini is at the forefront of this revolution – our Automation Drive is a unified, open and dynamic suite of automation tools and services that help our clients embark on a new journey of reimagining the way they do business. A number of experts from Capgemini's Business Services have shared their insights on various aspects of automation, and we hope that this collection of articles will help you navigate your business through the uncharted waters of this new age towards a productive automation environment.

Lee Beardmore
Chief Technology Officer
Business Services



THE FIVE SENSES OF ARTIFICIAL INTELLIGENCE

Christopher Stancombe

Head of Industrialization and Automation

I believe that there is a misconception that Artificial Intelligence is – or will be – a single piece of technology that should be bolted onto a business process to make it "smart" and/or “independent” from human intervention. My experience to date is that the answer is more complex and more interesting.

Rather than a single solution, the real “intelligence” is in how a set of technologies are combined to create a solution. It is similar to our perception of human intelligence – this isn’t built on a single element, it’s a combination of senses, experiences, and knowledge.

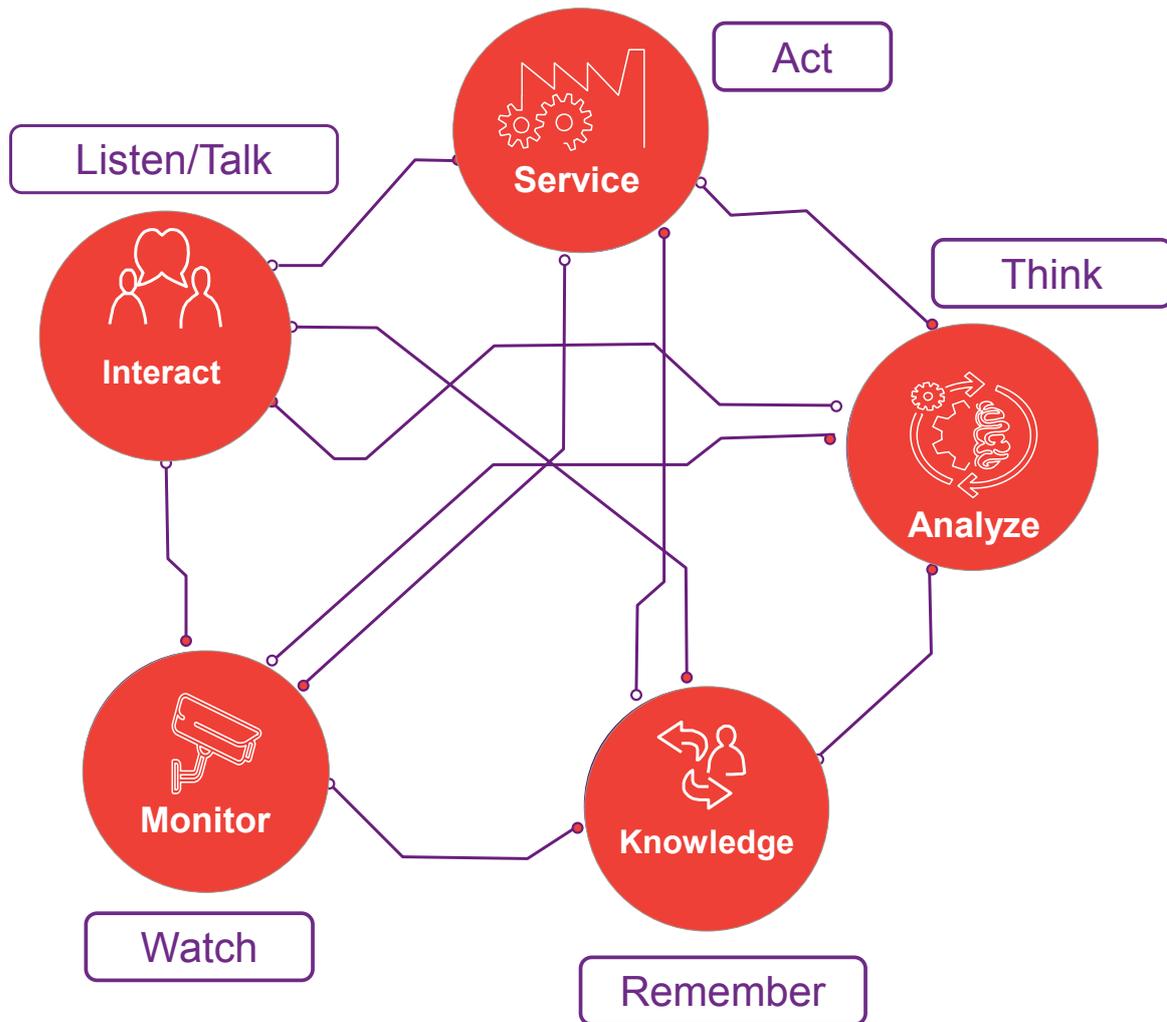
DEFINING THE FIVE SENSES OF ARTIFICIAL INTELLIGENCE

I looked at a variety of solutions that are deemed to display artificial intelligence and concluded that they had 5 attributes in common based on a fusion of smart processes and intelligent automation. In explaining my findings to my colleagues, I found myself likening the attributes to senses in a human being. Hence, the concept of the 5 senses of AI was born.

- **Interaction (talk/listen)** – this is the ability to listen, read, talk, write and respond to users of the AI solution. The aim here is for technology to ensure that the interaction feels intuitive and the customer is happy. Examples in this space include chatbots and voicebots.
- **Monitor (watch)** – here, technology is used to watch and record key business data. It is used to create knowledge. This would include CCTV and IoT sensors.
- **Knowledge (remember)** – this is about being able to store and find information effectively using components such as databases and search engines. This is probably the worst developed area within corporations, but examples include Wikipedia and my hard drive.
- **Analyze (think)** – this is the ability to detect patterns and recognize trends. It applies algorithms to knowledge to determine appropriate action or predict future consequences.
- **Service (act)** – this area uses technology to do things. We are used to the concept of Robots working on an assembly line and now they are moving into the office. Examples include resetting a password and placing a customer order.

I am finding this framework useful to ensure that the solutions we design and create for our clients are complete and meet the test of being “artificially intelligent”. It is also helping us to group technologies

and to evaluate them against each other. I plan to share the criteria, results, and some exciting developments within Automation Drive in later posts.



KEEP CALM AND THINK OF IT LIKE A PLATFORM

There's some uncertainty or even fear in the media about the concept of Artificial Intelligence. I think this ties back to the misconception that it is a single all-encompassing solution.

However, if we look at it more as the result of combining a range of senses that replicate attributes of human intelligence, I believe that it is where we will see real value without the fear. Multiple technologies with different attributes working together to help the organisation become more responsive, relevant and intuitive. That's what consumers, employees, and shareholders are really clamouring for.



MACHINE LEARNING - TACKLING DATA VOLUME AND UNPREDICTABILITY

Lee Beardmore
Chief Technology Officer
Business Services

One of the most enjoyable aspects of my role as Chief Technology Officer for Capgemini's Business Services is being able to work with technology companies that are pioneering breakthrough innovations – and this is one of the reasons we created our global partnership with Celaton in 2016. Their work around AI and machine learning is impressive to say the least, and the industry is taking notice – Celaton recently received the 2017 Queen's Award for Enterprise in Innovation for the development of their inSTREAM™ offering. I've had the pleasure of collaborating with Celaton's CEO, Andrew Anderson, applying inSTREAM™ to improve business process transformation for our clients. In this article, Andrew shares some of his insights on how machine learning can help manage unpredictable data volume and deliver significant benefits in finance and accounting.

According to a recent study, we create a staggering 2.5 quintillion bytes of data every day. Many organizations are reliant on data to run their business, including everything from order management and cash flow to HR and customer services. Yet the sheer amount of data that organizations receive on a daily basis from staff, suppliers and customers from a wide variety of channels can be overwhelming and if left unprocessed damaging to an organization's financial performance and reputation.

In addition, the amount of data received is subject to surges created by factors out of the organization's hands such as 'acts of God'. For example, for train

operating companies a disruption on the rail network may cause an influx of compensation claims and in the same respect a sudden flash flood may cause an influx of claims for insurance companies. These surges are unpredictable and as such difficult to plan for. Organisations are either forced to put additional strains on existing staff to process this incoming data, often resulting in delays to the customer or supplier or employing last minute temporary staff, at an inflated cost to the business. So, the question is how do organizations plan for and effectively manage these surges in data?



Unfortunately, there is no way to predict surges 100% of the time, so organizations need to have an effective system in place that can cope with any incoming data volumes – to be able to scale on demand. More and more organizations are turning to machine learning technologies like Celaton’s inSTREAM™ to achieve this.

Technology with machine learning capabilities can not only handle the plethora of incoming data regardless of volume or document type but also learn to understand the meaning and intent of the content. This allows it to recognize and extract key data, enrich it via other sources of information, and then process and deliver accurate information to other business systems or robots for further processing. Software that learns through the natural consequence of processing and monitoring the actions of humans in the loop can achieve greater productivity per person with continuous optimization. The greater the volume of data the faster it learns.

Taking it a step further, when machine learning technologies are applied as part of a business process transformation program, that’s when the real value is realized. For example, Capgemini’s Automation Drive Suite includes the Virtual Delivery Center which uses Celaton’s machine learning coupled with autonomous robots to deliver straight-through machine-to-machine processing without human intervention, unless there are exceptions to be handled. This delivers significant benefits in both productivity and accuracy in finance and accounting processes.

Applying machine learning technologies to optimize business processes means that organizations can continue to deliver great customer service, without delays, without additional staff, regardless of increase in volumes or unpredictable surges.



ARTIFICIAL INTELLIGENCE – CHANGING THE WAY WE DO BUSINESS FOREVER

Divya Kumar

Director of Analytics and Research
Business Services

Everywhere I turn, I seem to encounter discussions on machine learning and artificial intelligence (AI). The Nasscom conference on big data and analytics in June was heavily AI focused. The cover of a recent issue of The Economist reads "March of the Machines" with a special report on AI. Analytics websites are full of it. So why is the analytics community so upbeat about this technology?

ARTIFICIAL INTELLIGENCE – AN ILLUSION OR A REALITY?

While the earlier phase of robotics was primarily driven by the technology community, the analytics community along with the technology one is equally evolving the AI landscape. The reason for this is fundamental:

Robotics was about embedding rules into technology to automate processes, while AI is about embedding analytics into the process through technology. In a hypothetical scenario where every process has AI in it, there would be no need for analytics outside of the process because all data would be analyzed at source and the actions based on that analysis already taken!

Take, for example, the recommendation engine in Amazon. The machine looks at what you have searched for, learns your preferences, stores it, compares it to others with similar preferences, analyzes it and converts all this data into action by showing you what could be of most interest to you next time you log in. Every time a user enters Amazon, the system learns. No human intervention, no analysis and no action outside of the system.

When I mention AI here, I am using it only in the context of machine learning and narrow AI. We went from automation to robotics based on rule-based learning. You tell the robot what to do and it does it. Now in the new world, you give the machine training data based on what humans have

done earlier and it learns and decides what to do; or you give the machine an objective and set the parameters and through millions of iterations, it decides the best way to do it.

While the former is something that humans can comprehend, the latter is somewhat mind-boggling. The reason is that the machine often finds ways to do things that humans have never thought of or could not do earlier due to "computational constraints." To take that one step further, the machine finds ways to reach the end goal that humans are not even able to comprehend after the fact, i.e., since it has done millions of iterations, humans cannot trace back to "how" the machine achieved the objective. It is no wonder then that when Microsoft's CEO, Satya Nadella, came up with 10 commandments for how humans and machines should work together, one of them was that AI must be transparent and intelligible rather than just intelligent!

So why is all this relevant to a normal enterprise? Is it all buzz like it has been for 30 years or is there something different this time?

The short answer is that after decades of lingering in the corridors of technology, AI has finally made its way into real life. I am not talking about the Google and Tesla cars or the chess and AlphaGo wonders, I am talking about basic functions such as online shopping, marketing,

supply chain, and manufacturing. Every time we log into Google Search or Google Photos, use Facebook, or shop on Amazon, we are encountering machine learning. Companies such as Siemens and Danone are using it in production and supply chain. So this time is different.

While technology innovations in cognitive, visual, natural language processing (NLP), neural networks, deep learning, etc., happened independently in diverse fields, it has all come together neatly to give AI the biggest boost in decades. Companies like IBM and Google DeepMind, Microsoft and Amazon have made breakthroughs that were once unthinkable. An amazing phenomenon is sparking rapid incremental innovation; in the past, companies invented alone. Currently, not only are innovative companies investing heavily to change the game, but once they do, they are putting their algorithms on open source platforms to enable brains across the world to develop it further.

Technology is here to stay and companies will have to transform to accommodate it.

This democratization of algorithms and technology, along with crowdsourcing of brainpower and the downward spiral of computing costs has made this time different – it's a geometric progression rather than an arithmetic one.

All the above is reality, not an illusion and we have entered a brave new world that is going to change the way we do business forever.

HOW CAN ENTERPRISES PREPARE FOR THE INEVITABLE?

It is often said that "it doesn't matter whether you are a lion or a gazelle. When the sun comes up, you better start running."

As AI starts to become a ground reality, touching our lives and businesses, its use cases expand and the contagion spreads, it is important for businesses to not only watch it closely but to take certain steps to prepare themselves in the race for survival.

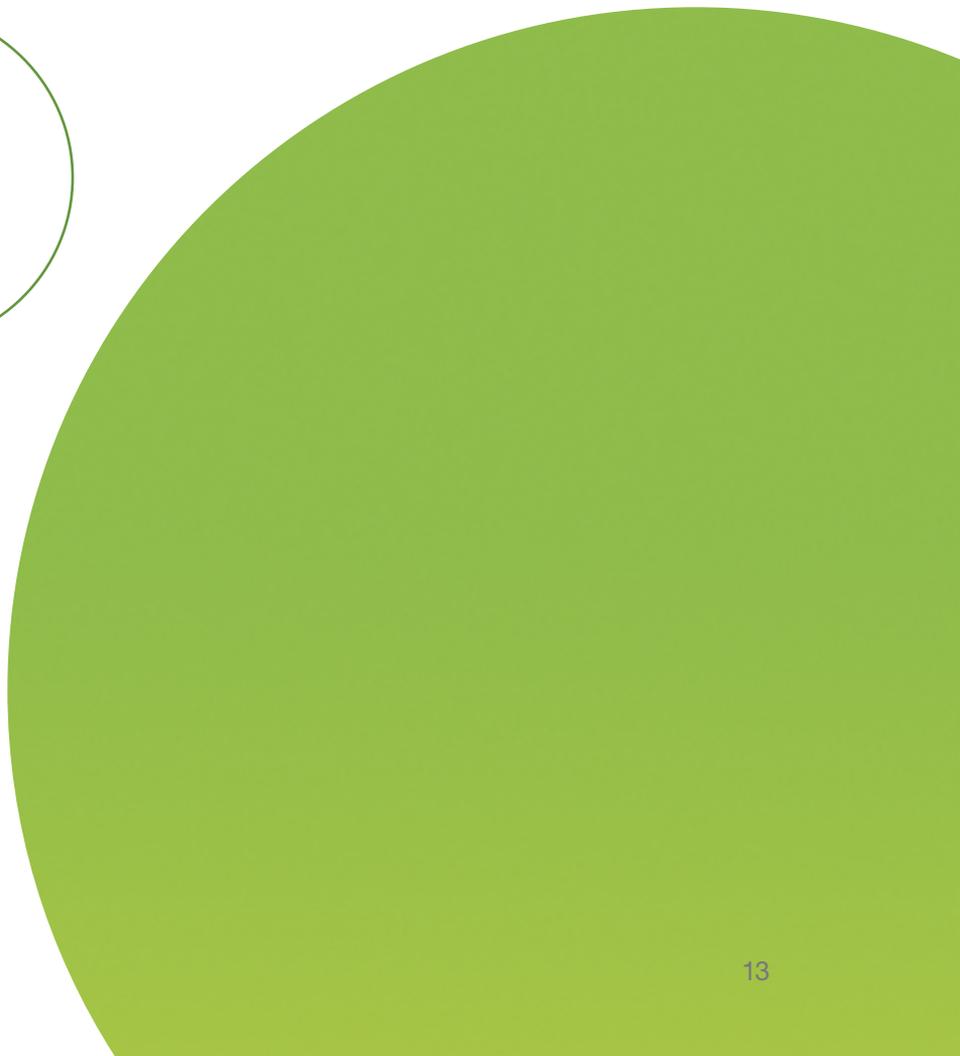
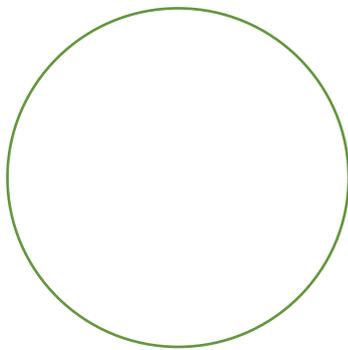
So what does this mean for the enterprise?

- **Watch** – this is not about "if," it is about "when." If companies do not watch for the wave and catch it in time, they will be left on the shore and will become extinct without even realizing it. While it is important to follow technology, it will also be important to follow its application in industry and the mobility of the use cases from one industry to another.
- **Lay the foundation** – the success of AI is heavily dependent on the data underpinning it. Feed it bad data and the machine will make wrong decisions. The organizations that succeed will be the ones with a very strong data fabric in terms of data availability, integrity, and integration. It's time to get the data right.
- **Prepare** – while technology is still evolving, now is the time to map the processes and see both where and how AI can be applied. This is also the time to train people and create awareness, especially for those involved in the process so they are not overwhelmed when implementation begins. Knowledge is going to be power more so than ever before.
- **Experiment** – enterprises can take small chunks of the process, experiment and assess the impact to see what works and what does not. Address problem areas, particularly those with the highest ROI first.
- **"Right-Invest"** – prices of AI are coming down and options are increasing. Over-investing at this stage may backfire, but under-investing can lead to a severe competitive disadvantage.
- **Take a holistic view** – all processes in the enterprise are interrelated and so is their data. Over time, AI implementation cannot be done in pockets since data is the food for AI and it needs to be wholesome for it to work properly. So it is important to plan for the future and look at implementations holistically.

As during any technology revolution, it is going to be a tough transition. Some gloomy reports like The Future of Employment estimate the probability of machines eliminating jobs as extremely high, e.g., 0.94 for accountants and auditors and 0.92 for retail sales people.

However, this is not about humans vs. machines. Technology is here to stay and companies will have to transform to accommodate it. As always in any evolution, it will be the survival of the fittest, and the fittest in this case would be those who embrace the change and are well prepared to adapt to it.

AI has finally made its way into real life. I am not talking about the Google and Tesla cars or the chess and AlphaGo wonders, I am talking about basic functions such as online shopping, marketing, supply chain and manufacturing.





INTRODUCING THE VIRTUAL DELIVERY CENTER

Adam Bujak

Global Head of Technology Transformation
Business Services

Center Spotlight – Virtual Delivery Center

LANGUAGES

All languages



LOCATION

The Cloud



FTEs

140+ robots
processing more than
5 million work items



WHAT IS THE VIRTUAL DELIVERY CENTER?

The Virtual Delivery Center (VDC) is part of Capgemini's Global Delivery Network (GDN) and focuses on driving greater automation of our service delivery in an industrialized framework.

The VDC consists of a virtual robotic workforce that undertakes repetitive manual activity, freeing up our people to handle exceptions and more complex tasks to deliver higher levels of efficiency, effectiveness, control and value to the business.

This is complemented by our BPOpen® App Hub of leading enterprise platforms and micro applications for greater machine to machine delivery and straight-through processing, which provide a step change in competitiveness and elimination of none value-adding work. The VDC offers:

- An Integrated Automation Solution covering Robotic Process Automation (RPA) and Artificial Intelligence (AI) technologies.
- A dedicated RPA Academy that provides a high level of training to the VDC team – from developers and support staff to PMOs and the robots themselves – to ensure a high level of quality of the services delivered.
- Our RPA Factory, which enables the remote agile development of artifacts that accelerates speed-to-value.
- A Design Authority process that focuses on certification, standardization, information security, knowledge management and best practice sharing.
- Our BPOpen® App Hub, with best-in-class applications for all process towers.

In addition, by employing a team of robots, the VDC has the lowest attrition rate of any business process outsourcing (BPO) delivery center in the industry.

SERVICES

- Finance and Accounting
- Supply Chain
- Procurement
- Customer Interaction Management



CLIENTS SERVED

All Business Services clients and over 500,000 users of our applications



Adam Bujak, Global Head of Technology Transformation, Capgemini Business Services, talks about the creation of the Virtual Delivery Center and how it is using automation and robotics to transform the way we deliver services to our clients.

We're starting to hear more and more about the Virtual Delivery Center (VDC) and its association with automation and robotics. Could you give us a bit of background on the VDC and how it differs from traditional BPO delivery centers?

Adam Bujak: Sure. The Virtual Delivery Center is our latest method of delivering global services. It has emerged from market demand and constitutes a structured framework for automation and robotics that are vital to deliver business process outsourcing (BPO) services. We are moving from a service delivery based on people-to-people interactions working out of traditional BPO delivery centers, towards more automated straight-through machine-to-machine (M2M) processing. Our VDC is based in the Cloud and staffed by robots that are hosted in our data center in Frankfurt.

These robots aren't the type of robots that we might think of that walk and talk, but rather robotic "artefacts" that use non-invasive human mimicking technology to automate everything on the graphical user interface (GUI), enabling execution of process steps. Work items are processed with an ever growing portfolio of advanced automation approaches, enabling autonomous robots to deliver straight-through processing without human intervention, except where there are exceptions to be handled. This technology is the digital workforce that can elastically scale up to meet any demand. This is Capgemini's new wave of digital transformation that includes Artificial Intelligence (AI), M2M processing via our wide range of enterprise

applications and micro apps in our BPOpen® App Hub, and Robotic Process Automation (RPA).

Will robots replace humans?

It's clear that robots can and will replace certain job functions that humans currently do, primarily those manual, non-value adding activities. But I suspect that if you ask people that do these mundane tasks, they probably won't be terribly disappointed to give them up in favor of more interesting work. It's a bit like working in a factory and putting the same things in a box day after day for 20 years – it isn't very exciting. We want robots to focus on high volume, repetitive activities that support humans rather than replace them. In turn, this frees up human capacity to concentrate on high-end value-adding work that is much more stimulating.

As far as the role of humans is concerned, there are still a great deal of advanced services that require human judgment and complex decision-making. We're actually seeing opportunities for more human work as the demand for automation solutions increases.

What type of training do you offer to both humans and robots?

Working with robots does require a different type of training than traditional delivery operations, so we have created the Capgemini Robotic Process Automation Academy. This program trains business analysts in charge of Opportunity Identification, which relates to searching for structured flows of information to enable robots to

digest and generate the structured data they post. We also provide the vision for wider process opportunities in order to implement enterprise applications from our BPOpen® App Hub for a step change in automation. We are also training RPA developers to build artefacts using UiPath (RPA) and Celaton inSTREAM™ (AI) technologies, for example.

The RPA Academy is not only about business analysts and developers. We're also training PMOs to ensure they have relevant knowledge to professionally execute a project involving automation. And there are other elements that need to be considered such as RPA support and maintenance. Furthermore, we are expanding the knowledge of our teams to embrace all components of our BPOpen® App Hub.

Finally we train our robots! We're currently developing Knowbots that allow us to create automation artefacts based on what they see. This will allow us to skip the element of opportunity identification and let the robot do it. The robot needs a cognitive element that allows it to learn. Learning is intuitive for humans. Robots need to be trained, so we're training them to learn.

It seems there has been quite an evolution from desktop to virtual machine hosted robots – could you explain why?

There is definitely a movement from the desktop to a virtual environment. We want to take advantage of scale and optimize maintenance processes. This robust plug and play model, which is available to every customer engagement, makes our offering much more attractive to our clients.

In addition, we are shifting our focus from robots that require human intervention to those operating autonomously. These autonomous robots are not triggered by humans pressing a button, but rather by electronic events such as an email coming into your inbox, a file saved on a shared drive or data point being added to a database. For example, an invoice is created as soon as all necessary inputs appear in a SharePoint dedicated to storage of all invoice relevant information.

Are there any security risks in running business processes from a Virtual Delivery Center?

The same security risks exist regardless of whether it's a people-staffed location or robots operating in the Cloud – but with the right security framework developed for our integrated automation solution, you can manage the risk. Capgemini's information security organization is involved in every step starting with testing and certification, up to granting clearance for a go live and monitoring in production. Robots execute strictly following rules defined by humans.

What is the advantage for business leaders in having their business processes delivered from a VDC?

VDC provides increases speed to value in terms of integration of different technology components and multiple business advantages resulting from the combination of native functionalities of our applications at a very competitive Total Cost of Ownership (TCO). However, it's not only about money – moving our people to more value-adding activities is quite rewarding and helps address our attrition management. In addition, robots can't leave for a better offer, they don't get tired or sick, and can potentially work 24/7/365. When robots handle the mundane, repetitive activities at a higher quality through elimination of human error, it allows people to upskill, take on more responsibility and focus on value-adding activities that keep them motivated. This is a large "win-win" for us and, more importantly, our customers!

Finally, our clients know we have been implementing robotic automation solutions for quite some time now, and we have a robust technical foundation that delivers some amazing benefits. However, we are not standing still. As we drive the VDC forward we are continuing to innovate. Our technology portfolio is constantly evolving and we are already involved in a global rollout out of our cognitive automation products. The VDC is the home to this advancing portfolio of exciting technologies!



USING AGILE AUTOMATION METHODOLOGY TO AUTOMATE BUSINESS PROCESSES

Daniel Dines

CEO

UiPath

Daniel Dines, CEO of UiPath, talks about how UiPath's Robotic Process Automation (RPA) technology has become an integral part of Capgemini's Business Services solutions, as well as dispelling some myths about the hype around robotics and automation.

Welcome, Daniel. Could we start with a bit of background information on UiPath and your role in the organization?

Daniel Dines: First of all, let me start with disclaimer – I'm an engineer. I've been around automation for pretty much all of my life. Early in my career I worked with Microsoft automating databases for enterprise customers, and from there I became an entrepreneur working on the technology that would eventually become UiPath. Simply speaking, this technology serves as the eyes and hands of the robot. It's about computer vision, recognizing objects on the screen, detecting text, and all sorts of other types of interaction with the screen, all of which is at the core of RPA.

UiPath has been providing RPA technology since 2013 when we shipped our first product to help a client represent a business process in graphical form to make the automation easier. From there we started our collaboration with our friends at Capgemini, which has propelled our understanding of RPA. Since then, UiPath has become a world leader in RPA with an ecosystem of many large enterprise clients and partners.

UiPath has recently won an Aecus Innovation Award – congratulations! Can you provide an overview of the project you submitted?

I'm really glad we won the award. It was very much a team effort, with Dr. Marcus Esser of Capgemini leading the project. It started back in 2014 when the Capgemini Global Technology Innovation team contacted us about using RPA to automate their business process outsourcing (BPO) processes. Traditionally, most BPO processes were automated using Citrix, which tends to be more difficult, so Capgemini was looking for an alternative computer vision solution that would meet their key requirements around accuracy, user friendliness, and price.

I'm proud to say that UiPath scored high on all of these criteria and so the partnership began. Together, we have automated a number of complex accounts payable (AP) processes and now have 140 robots processing more than 5 million work items.

What made this project so innovative and how is it different from the traditional approaches?

One of the key aspects of this project is that it uses an agile methodology to enable a rapid and industrialized implementation approach. What this means is that it allows Capgemini certified experts to build and deploy the automated business process in less than a week. And if the process is too big to be delivered in a single week, it can be split into smaller sub processes, each of which can be delivered quickly. This is a big departure over traditional automation projects that follow the waterfall method, where you start by defining the goal, followed by putting a team in place, then testing and finally delivering, which can take years and a great deal of cost, sometimes making it impractical.

Automation is more than a project – it's a journey that requires agility and constant delivery on a regular basis. Capgemini understood early on that to be successful with RPA, you have to be agile and approach it as a journey. They were also pioneers in building a center of excellence that brings together best practices with an enterprise grade infrastructure to support delivery of an end-to-end solution in an industrialized way.

What does this mean for business leaders and how it can help them transform their operations?

There is clearly a lot of interest in RPA and the landscape has changed a lot in the last few years. The level of engagement and interest we've seen by the market has bypassed expectations. Robotics is here to stay and has proved to deliver tangible results in weeks not years. There is a clear path forward which will continue to bring value to business leaders.

There's a lot of talk about the amount of hype around robotics and automation – from your perspective, what's real and what is yet to come?

This is absolutely true. I was amazed when the RPA movement started and people were already talking about cognitive bots working in data centers and expecting it to work like magic. There is a lot of hype happening to different extremes, both positive and negative, and the reality sits somewhere in the middle. On the negative end, some people see RPA as macros with no value. At the positive end, there are people that say cognitive bots are going to be smarter than people.

Automation is more than a project – it's a journey that requires agility and constant delivery on a regular basis.

RPA is more than a macro. RPA is about delivering automation in an industrialized fashion. At the same time, rule-based processes are here to stay. Robots are trained according to process maps and they are really smart at being able to follow the rules, which isn't always an easy task. There is a lot of intelligence built in along with Artificial Intelligence (AI) algorithms – and that's going to stay.

What cognitive is going to deliver will be more in the digitization and voice recognition, natural text recognition, etc. This is a great enabler for RPA, because once you understand what the customer wants, you can get the robot to deliver. The current hype is more about the big promise of what AI can deliver in the short term, and I don't think in the short term it will be that amazing – it's an iterative process.

What can we expect to see next from UiPath?

Right now, we are working to continually improve the platform. This is an orchestrated platform that is completely API enabled to make integration with other technologies easy. Part of our strategy is to be a solid player in the digital enterprise, to make the developer's life easier and enable them to deliver faster, which is an important metric for everyone.

On the AI front, we are looking into automated decision-making, such as fraud detection and how to improve workflow between humans and robots. This is one of the key characteristics of RPA, especially when it comes to handling exceptions. We're also working on process auto-discovery to help enterprises identify which processes are best for automation and do this faster to increase time to market.

Finally, do you have any words of advice for executives who are looking to bring automation into their business processes?

It's very important to understand that RPA is an enterprise technology and it should be a top-level decision with a dedicated budget. To be successful, executives should ensure they have the right framework, a global center of excellence and the right partners to deliver on their business agenda.



On the AI front, we are looking into automated decision-making, such as fraud detection and how to improve workflow between humans and robots.



DESIGN THINKING – EXCELLENT RESULTS DELIVERED IN A RADICALLY DIFFERENT WAY

Lee Beardmore

Chief Technology Officer

Business Services

Lee Beardmore, Chief Technology Officer at Capgemini's Business Services, provides a peek behind the scenes of how Capgemini is using Design Thinking to develop solutions for our clients.

Hello Lee. To start, could you explain the concept of Design Thinking?

Lee Beardmore: Design Thinking is a way in which we create pattern breaking, upstream innovation. It has a creative bias that is not solely focused on problem solving but also anticipates market needs. In many ways it's a mindset supported by an approach that leads to products and services that are both viable and technically feasible.

This is very evident in the refresh of some of our key services, including Order-to-Cash (O2C), which has been transformed into the more comprehensive Digital Customer Operations (DCO) offering; Purchase-to-Pay (P2P), now known as Digital Buyer Operations (DBO); Record-to-Act (R2A), or Digital Intelligence Operations (DIO); and Human Resources Outsourcing, which has become Digital Employee Operations (DEO). It is worth highlighting the collaborative nature of these activities, the R2A refresh, for example, was carried out jointly with two of our clients.

Design Thinking is a way in which we create pattern breaking, upstream innovation.

How is Capgemini using Design Thinking in the Business Services product development process?

Well, each year we embark upon product refreshes. However, in 2016 we took a more radical approach to product development rather than the more evolutionary approaches of the past. We decided to apply a “digital by default” mindset to product design and development, in order to instill an ethos of technological advancement given the impact of digital technology on the full stack of service delivery. In Design Thinking terms, we are anticipating the unmet and unarticulated needs of our clients and the market. This allows us to empathize with the challenges before framing the scope and creating the ideas that will ultimately be converted into tangible products we take to market.

Can you share a specific example of how Design Thinking has been applied in delivering these solutions?

Our virtual delivery center is a good example of Design Thinking employed to create a radically different delivery vehicle for business operations. Working with the strategic intent of creating a digital workforce, we have redefined the concept of the business process outsourcing (BPO) delivery center to become an “as-a-service” construct that can elastically scale up and down to meet the processing demands of our clients.

At the physical level, it includes technology products from our portfolio (Robotic Process Automation, cognitive, analytics and application accelerators), however, in addition to the physical manifestation of the virtual delivery center, we have paid care and attention to the delivery method such that its emphasis is on being transformative rather than simply improving efficiencies of the status quo environment. Our methodology seeks to eliminate unnecessary work, optimize existing assets, augment our client landscapes with automation technologies and finally to include robotics as a means of improving remaining systems and process inefficiencies.

What are some of the key success factors that ensure these digital solutions deliver value to our clients?

A sound digital business model will make use of best-of-breed platforms and tools if it is integrated, tailored, deployed and managed using a proven methodology executed by a knowledgeable and experienced team. It also depends on a shift in mindset – an awareness that digital transformation isn't just about an evolution of process and technology, but of how the whole organization works, focusing throughout on the needs of its stakeholders.

Among these stakeholders the organization's employees are key – without their engagement and buy-in it's unlikely the effects of the transformation will be fully felt by any other group and by our customers in particular.

What aspects of Design Thinking have helped shaped your approach to product development?

When we develop our products, we focus on the following characteristics:

- We work with the ready acceptance of ambiguity and an uncertain future.
- We describe future scenarios that are radically different to current operating models.
- We readily accept the impact technology has and will continue to have on traditional BPO revenues.
- And we accelerate digital transformation as the primary driver of change.

Creativity is obviously important, although we place great emphasis on tangibility to ensure our products meet the needs of the industry we serve. Collaborative developments with existing clients form a key element of our approach. This invokes a much more dynamic approach, with prototyping and refinement prior to a product launch.

Historically shared service and BPO operations have enjoyed multi-year consistency with Continuous Improvement programs finding ways to advance efficiency and control operating costs. Such programs have generally been executed within the parameters of our existing contracts.

Many of our clients are looking for creativity and ideas with a focus on solutions rather than problems.

Recently however, many of our clients are requesting “innovative ideas” and “where do we go next” to advance their business operations. The requirement is for creativity and ideas with a focus on solutions rather than problems. It's about painting a picture of what the future may be and then match needs with what is technically feasible.

What are some other ways Capgemini is using Design Thinking?

Design Thinking is not a new discipline to Capgemini. We've run Accelerated Solution Environments (ASEs) for many years, where we closely collaborate on ideation of a future state in which there is a loosely defined strategic intent. The “Scan, Focus, Act” methodology of these ASEs largely echoes some of the key principles of Design Thinking where strategic intent is supported by divergent and convergent thinking followed by exploration of the tangible. Many of our Business Services contracts include ASEs as a vehicle for collaboratively advancing our clients' businesses.

Capgemini University runs several “Business Priority Week” sessions per year that bring together the power of Capgemini Group and address client challenges in a collaborative way. Two good examples of design thinking output during our Business Priority Weeks are the creation of the Business Services Virtual Company Offering with one of our clients, and a merger and acquisition strategy for another. More recently we have created the Applied Innovation Exchange (AIE), our Group-wide and highly collaborative, technology-centric ideation and design approach. In Business Services, we participate in many AIE sessions as a means of advancing our current and potential clients' understanding.

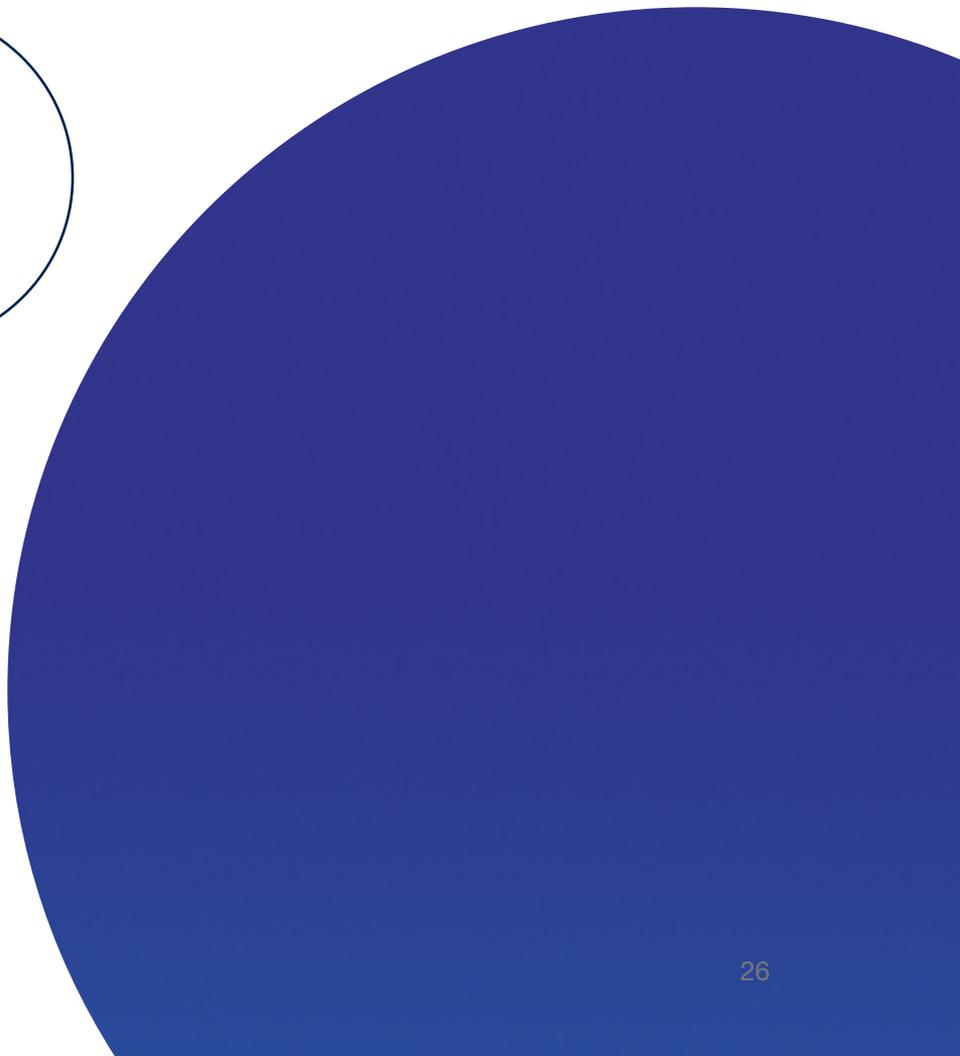
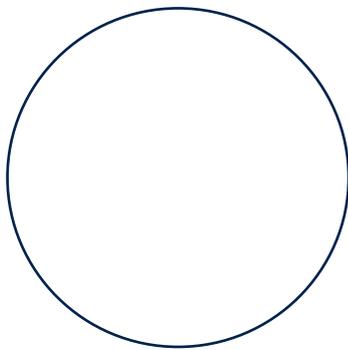
We unify the ASE and AIE methods and spaces into a specific “innovation lab” concept offered to our clients to deliver a sustainable focus on innovation in cost performance and customer experience. In addition to our

own physical spaces, we create mobile versions of the ASE and AIE that are embedded into our client organizations.

And finally, could you give us some concluding thoughts on Design Thinking?

Living in a world of accelerating change, we need a way to robustly convert our ideas into the kinds of products and services that our clients expect and demand. In an uncertain future, Design Thinking provides the forum to generate ideas collaboratively with our clients and technology partners, which are then converted into viable outcomes, and which will hopefully deliver excellent results in a radically different way.

Design Thinking provides the forum to generate ideas collaboratively with our clients and technology partners, which are then converted into viable outcomes.





WELCOME TO THE AGE OF THE INTELLIGENT ORGANIZATION

Christopher Stancombe

Head of Industrialization and Automation

We are on the verge of a significant change in our expectations of what a business is and how it acts.

It has been accepted for a long time that a company should act “responsibly.” That the business should behave ethically and meet the test of acting like a “reasonable person.”

I would argue that we are now seeing signs that expectations are growing. “Responsibility” is taken as a given. We are now looking for “intelligence” in our businesses. Not simply making use of “business intelligence” products. Rather, a time when it will become normal for the business itself to act as an “intelligent person.” Intelligent organizations will need to ensure that the technology they have in place has the capacity to learn and improve with time, and without human intervention.

The customer expectation of an intelligent organization is about to skyrocket, and with it, the expectations organizations have of their outsourcers.

KNOWLEDGE WILL MOVE FROM THE COLLECTIVE TO THE INDIVIDUAL

Despite standardized approaches to information sharing, and the ubiquity of collaborative technology, we still accept that most important corporate knowledge is housed inside the collective human brains of a company. Brains that can change jobs, move away, forget and retire. It’s reliant on the memory, knowledge and experience of a group of employees.

We have to agree that this puts organizations and industries at risk of losing valuable experience, and makes it more difficult to share knowledge.

But machines have evolved from simply recording data from our daily interactions with them, to being able to analyze that data at scale. Organizations are now powered by learning machines that are able to display a kind of artificial intelligence that is greater than the sum of its component parts.

The knowledge and experience previously held by a collection of employees will now be owned by the intelligent organization.

With increased digitization and adoption of automation in corporations, I believe that the knowledge and experience that was previously held by a collection of employees will now become the property of the individual, intelligent organization. A central data repository and advanced analytics will work to create meaning from thousands of events across a business – a shared organizational “brain,” if you will.

In 2017, intelligent organizations will ensure that the data in their own “brain” is not just up to date, but accurate and auditable. They will need the capacity to apply advanced analytics to this data and use it to guide business actions and machine interactions.

ROBOTS WILL LEARN TO BE MORE PERSONAL

Our interactions with robots are going to get more personal in 2017. Chatbots are becoming more widely adopted, with end-users checking the time with Siri, or planning their shopping lists with Alexa. At Capgemini, our own recent experience at our service desk saw CSAT scores improve from 3.47 to 4.12 following the creation of a chatbot.

I believe we will see a new wave of benefits, one in which chatbots can learn and improve every interaction, as robots continue to move from the back office to the front office. As robotics become more widespread, and



DO-IT-YOURSELF – THE IMPORTANCE OF CUSTOMER PORTALS

Andrzej Hutniczak

Europe & APAC Engagement Executive

Business Services

Do you remember how you used to book an airline ticket? The usual way was to use a travel agent, who found deals for people and were paid a commission by the airline. Sounds like a lifetime ago doesn't it?

People find their own deals today. We search the airlines directly or visit price comparison websites to find both the price and schedule that suits us best. We make our own purchases, money transfers and payments when and where we want. Obvious! But why? It's not only because we can – the technology makes it possible – but also because it's human nature. People like to do things for themselves.

In this “do-it-yourself” world, one phenomenon that I find really interesting is the way in which buying behaviors that were traditionally considered B2C (business-to-consumer) are increasingly found in the B2B (business-to-business) environment.

Buying behaviors that were traditionally considered B2C are increasingly found in the B2B environment.

A recent McKinsey research study¹ mentions that “although customer-experience improvement is typically associated with B2C players, it is at least as critical in the B2B setting. While the nature of B2B relationships makes the reform challenge more difficult, with regard to customer and journey complexity, the competitive advantages and significant bottom-line gains that flow from it make the effort worthwhile. There is great potential in the B2B realm in using concepts such as self-service, online interfaces, and automated decision rules.”

Based on this, we have to ask ourselves a fundamental question – if we're in business and we haven't yet provided a similar “do-it-yourself” option, what's our reason?

WHY MANY B2B COMPANIES ARE SLOW TO ADOPT...

While most consumer-driven B2C organizations already have the portal box ticked, I can think of several reasons B2B companies may cite why they haven't got on board:

- We don't see the need. We're not a consumer goods business.
- It won't be used. Why create something that might not be used by our clients?
- Online customer portals are so impersonal. We value the direct relationship we have with our clients – and they value it too.
- The business case is not there. If the adoption is low, we'll just incur cost.

... AND WHY THEY MAY BE LEFT BEHIND

I understand these concerns to some extent, but there's more to it. The digital revolution is re-shaping the market, and the enterprises that understand and leverage it to their benefit will not only survive, but also flourish. These are organizations that know communication is a two-way thing. They understand that customer portals don't just provide self-service facilities such as virtual agents, but enable other means of real engagement such as enabling a customer to interact with a live agent when the query is more complex.

Let's take each of the above referenced arguments in turn:

¹ Source: McKinsey & Company: Customer Experience, Creating value through transforming customer journeys | Winter 2016

The enterprises that understand and leverage the digital revolution to their benefit will not only survive, but also flourish.

- **Lack of need** – implicit in this argument is the notion that the sole function of customer portals is to enable a fast-moving consumer goods (FMCG) style purchase. “If I’m not an online consumer business I don’t need a portal.” In fact, self-service portals not only provide customers with a means of purchase, but with a route to information and engagement. A B2B organization’s clients are people too, and people are consumers with consumer expectations. They bring these expectations to work with them and look for levels of customer service they find outside work. Statistics show if their needs aren’t met, they’re disappointed and the B2B brand value is diminished as a result.
- **Lack of a business case and low adoption** – in fact, the development and implementation costs of a customer portal may surprise you, and once it’s been rolled out the costs per contact are very low – lower, in fact, than just about any other form of customer interaction. If something that is both cost-effective and useful in consolidating brand loyalty, is it really just a “nice-to-have” requirement? In addition, it’s not only about the cost – Generation Y/millennials expect to be communicated with in a relevant way.

- **Impersonality** – the implication in this argument is that customer portals are being introduced as a replacement for direct customer contact. They’re absolutely not. Our relationships as individuals with our families and close friends isn’t diminished because we send text messages to them now and then – texting is just one of many forms of communication we use. Similarly, portals enable customers to engage with organizations how and when it suits them.

Enterprises that understand the importance of the digital customer experience are already well advanced on this journey and have implemented customer portals. They are able to serve “Generation DIY” – those who live through a digital interface and want everything to be available online anytime, anywhere – and probably haven’t called a travel agency in years.

CHANGING HOW WE WORK – THE IMPACT OF AUTOMATION ON TODAY'S ENTERPRISE

Throughout history, new technologies have changed the shape of the labor market – both destroying and creating jobs in a process that the economist 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

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 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

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:

- 87.7–99.5% improvement in quality
- 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, Internet of Things (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 decisionmaking, 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

Better fulfillment and forecasting of our resources supply chain capacity with IBM Watson

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 supply and demand

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

HOW WE DO IT: SMART RPA

Capgemini has partnered with Celaton (a specialist Artificial Intelligence company) to strengthen our Robotic Process Automation (RPA) 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.

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.

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.

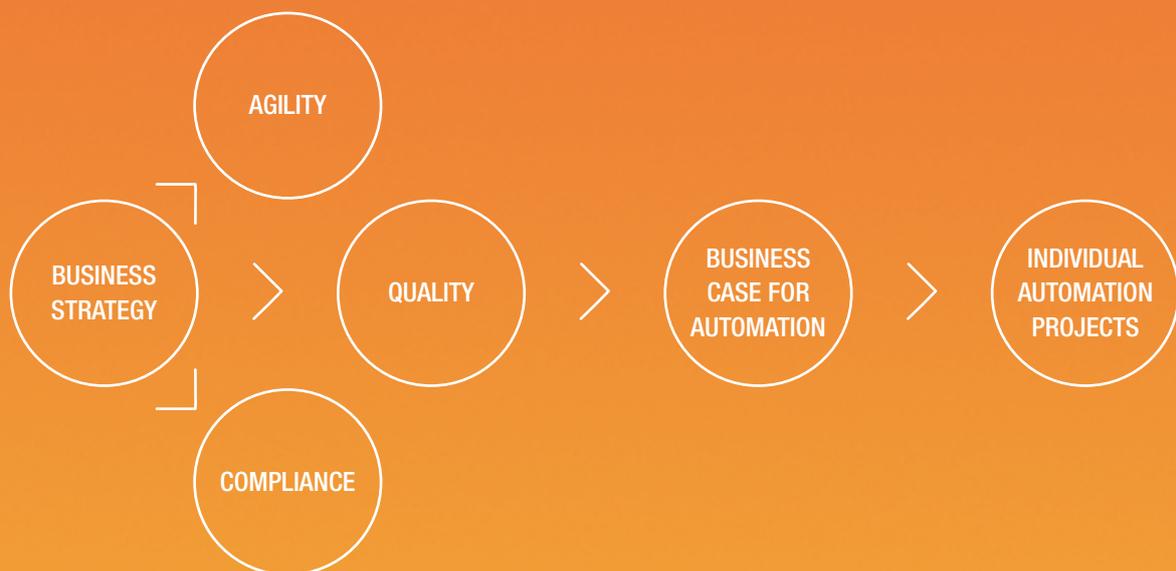
Client Case

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

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.



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

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

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.

Client Case

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

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.

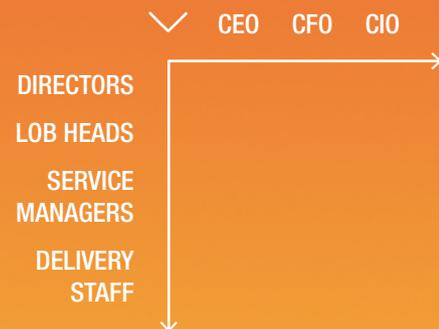
ESSENTIALS FOR AUTOMATION SUCCESS

- 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

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

CHIEF AUTOMATION OFFICER



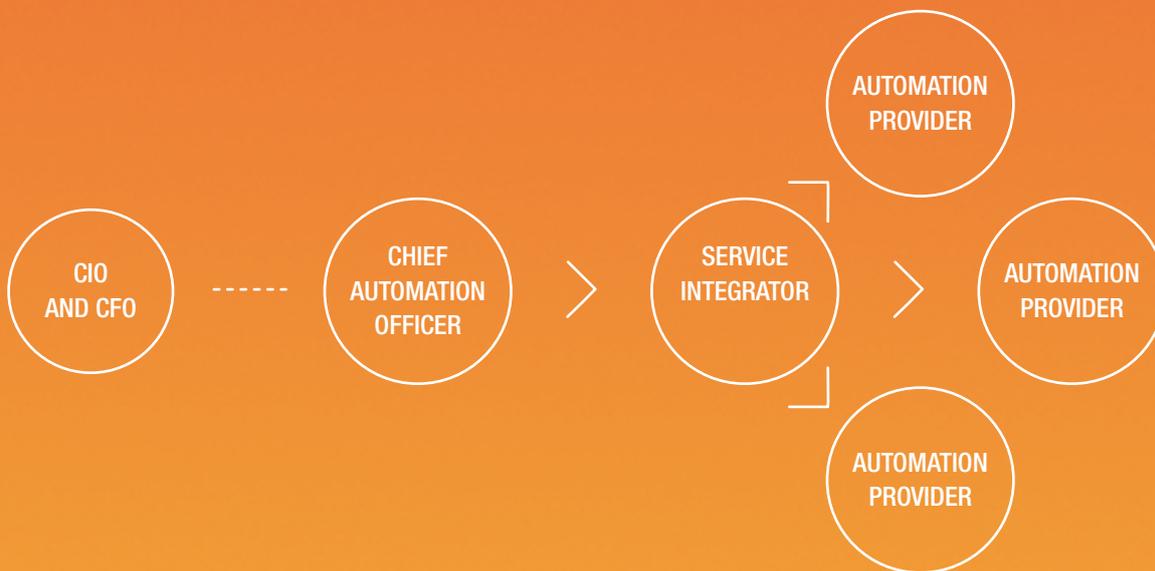
departments and cultures and bring people together around collective principles.

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.

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

How we do it: securely managing complex IT systems



Cappgemini 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.

will be detected far earlier. Deep system monitoring and predictive analytics will identify threats and prompt an intervention before any impact on operations.

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.

www.capgemini.com/AutomationDrive



TEAM RPA: DIFFERENT ROBOTS FOR DIFFERENT PROCESS AUTOMATION ROLES

Christopher Stancombe

Head of Industrialization and Automation

With a summer of sports behind us, I was thinking about the diversity of skills of those people that are competing. The adaptability of human beings is amazing, and I reflected on how this diversity is showing itself as we continue to embrace robots to help us in our daily lives.

Robotic Process Automation (RPA) has grown rapidly to cover a broad portfolio of point solutions. They replicate a number of very different human activities. Hence, just as an Olympic team has runners, jumpers, riders, throwers, cyclists and so on, we're now seeing a variety of robots deployed in our business teams.

We still tend to bundle them all under the team name of RPA rather than the precise role they've been selected for. So I wondered whether, inspired by the recent Olympics, it's time to start defining robots in more specific terms. I suggest the following examples (but there are many more):

- **Probots:** these process data, following simple repeatable rules
- **Knowbots:** these gather and store data
- **Chatbots:** these act as virtual agents and respond to customer queries in real time

A clearer taxonomy for robots will provide some distinct benefits:

- **The right training regime** – different robot types will need different skills and experience to design, build, and deploy them
- **The right rules of engagement** – governance is very important and will need to be flexed to accommodate various types of activities
- **The right arena** – the deployment, environment and security – is also likely to vary

Therefore, the ability to implement RPA and transform businesses will be enhanced and accelerated by a common language adopted and understood by all of those involved.

Let the RPA games begin.





VISUALIZING CUSTOMER INTERACTION DATA FOR ENHANCED CUSTOMER SERVICE

Reynald Chapuis

User Experience and Digital Director

Pôle emploi

Reynald Chapuis, User Experience and Digital Director at Pôle emploi, talks about how France's leading employment agency is gaining more insights into their customer interactions.

Reynald, could you start by giving us a brief introduction to Pôle emploi?

Reynald Chapuis: Pôle emploi is the leading player in the French labor market. We help jobseekers find employment and support companies in their recruitment efforts – correlating data from phone calls, face-to-face interviews, emails and customer segments.

What are some of the key challenges Pôle emploi has faced in managing customer interactions in recent years?

Pôle emploi currently manages more than 400 million interactions each year for nearly 10 million people across more than 10 different interaction channels. We've already digitized a large part of our services but find that our traditional channels such as the telephone are still strongly used. So, our main challenge is to better manage the experience of our customers in order to improve our services and their level of satisfaction.

How are you tackling this challenge?

We determined that we needed to be able to better visualize our customer interaction data, and asked Capgemini to analyze and benchmark the performance of our service to our clients and provide a pragmatic and personalized action plan to achieve measurable results. After framing the scope of the analysis, Pôle emploi teams collected the data and Prosodie-Capgemini teams carried out the analysis and presented the results in just six weeks.

What were some of the results of the project?

The main result was a more tangible awareness of our level of interaction with jobseekers and the quality of those interactions. We learned that the main reason people contact us is for benefit payment, and that this is the most expensive interaction to process. We also discovered that we have to work on the quality of our data, and thanks to the market benchmark, we realized that we need to decrease waiting time on the phone to 45 seconds.

What are the next steps on your journey?

Based on the results of Capgemini's Customer Interaction Service report, one of our main priorities will be to minimize duplicate interactions with customers, enabling us to become more efficient and improve the quality of the user experience. And because we now know that 20% of our users generate more than 40% of the interactions, we want to identify who these individuals are and better understand their activity. We will also focus on developing Pôle emploi connect, our ID API, to be able to better share and collect new data.





THREE WAYS CONTRACT MANAGEMENT SERVICES ARE EMBRACING DIGITAL

Craig Conte

Head of Contract Compliance and Optimization
Business Services

I have a confession to make. I absolutely love IT buzzwords. One of my favorite games at conferences is to count how many times I hear about solutions that are “on-demand,” “cloud-based,” “automated” or employ “robotics.” What I love even more is when these terms are misused – to hear my story about the individual who told me all their contracts were “blockchain,” you’ll need to contact me in person.

That aside, there has been another great buzzword floating around business and IT services for a while – “digital.” And just so we don’t run into the issue I was mocking above, let’s be clear on what we’re talking about. A “digital service” is just that – a service (not goods) – delivered through the internet or a closed network, and virtually automated with very little or no human interaction. “But Craig,” you say, “how can such a heavily human interaction-based activity such as contracting be digital?” Well, in fact, there are ways today where the contract lifecycle has gone digital. Here are three examples:

SELF-SERVICE CONTRACTING

Most companies understand the use of templates for contracting. Everyone has seen a “standard 2-way non-disclosure agreement.” The problem is that most companies build up templates for non-disclosure agreements (NDA) and other basic contracts, but restrict access to lawyers or procurement teams. And often this is for any number of good reasons, such as a lack of clear process for using the templates, the templates are not clear enough for a non-lawyer or non-contracting person to use, or the templates aren’t mature enough. But in effect, the template has very little use if only a few people who already know how to make a contract are using it.

For instance, it doesn’t save me time at an airport if I have to go to check-in and talk to someone who knows how to check me in. What does save me time is if I have an app that allows me to answer a few questions and then

check-in without having to talk to someone. Don’t get me wrong, I like talking to people, but not when I am rushing for a flight – as is often the case.

Therefore, simple contracting can be “digital” if you take the template, make it easy to use, easy to read and process, and easy to follow for signoff and enactment. It can even go digital with a clever platform and some clause libraries or other authoring capabilities. There are many tools on the market that have good modules for this, including some great next generation tools that are really pushing the digital agenda.

COGNITIVE EXTRACTION

As mentioned above, basic contracts can be digital. But what about managing complicated contracts or understanding the unstructured data found in contracts? There is a wealth of information to be found in a company’s contracts – for example, what terms help with cash, what terms lead to losses, or even more basic items like ensuring they are all correctly signed and enforceable.

Non-digital processes require companies to either manually pull the metadata or obligations out of contracts or do nothing and therefore know nothing. But those options don’t work if we want to get digital. There are now a few tools on the market that use cognitive automation to effectively “read” the contract and pull



out the relevant information to put into a structured database for later analysis.

Pushed even further, these tools function like a “Google” interface for your contract portfolio, allowing anyone in your organization to obtain the information they need with a minimal number of clicks. Of course, there needs to be some consulting and transformation to make that happen, but the principle and output is really revolutionary.

Contracting can be “digital” if you make the template easy to use, easy to read and process, and easy to follow for signoff and enactment.

AUTOMATED REVENUE ASSURANCE

So with our digital platform of tools and processes, we now know how to create the contract and manipulate the data held within. But how do we get performance and profit under control? Well, there are a few tools that can take this data from contracts, interact with the ERP and other systems, and do everything from performance management to invoice validation with just a few clicks.

I’m not talking about simply seeing where the performance of a vendor falls within the red/amber/green framework. I’m talking about calculating whether or not there is a penalty based upon “change order #30 with modified SLA Schedule 2.1,” for example. Or whether all of those project documents fall within expected invoicing outcomes based upon the fee schedule for different types of work. These are the types of things that are often missed and can lead to revenue leakage or overpayment. And yes – these fixes can be digitized too.

Can the contract lifecycle be digitized? Of course it can. In fact a lot of companies can and are doing this today. And it’s not just a buzzword.



BRING YOUR OWN ROBOT

Christopher Stancombe

Head of Industrialization and Automation

A candidate enters the interview room. You've studied their CV, reviewed their portfolio and validated their test scores. Now, here's where it gets really interesting. They're about to show you their robot(s) and the impact it has on their performance.

This scenario is surely going to become more common in the enterprise as we see more “augmented” workers – i.e., people who bring their own Intellectual Property (IP) to the job to help them achieve more. For example, I know a recruitment consultant who used her engineering background to develop an automated search bot to find the most relevant candidates from across multiple sites. Increasingly, all the best candidates will have some form of digital differentiator they can bring to the interview table.

INNOVATION IS THE NEW KNOWLEDGE

I think this is due to the shift in how we retain knowledge in the digital age. Knowledge is everywhere now. If my tap is leaking at home, I can watch a YouTube video and learn exactly how to fix it. I don't necessarily need to search the classifieds or get a recommendation for a plumber.

So when it comes to recruitment, perhaps we should be looking less for certain existing skills or a specific level of knowledge – because it's all easily accessible and easy to learn, digitally. As employers, maybe we should be more interested in the unique IP that candidates can bring, whether it's a software bot, a set of macros or a unique algorithm. Alternatively, a generalist with excellent knowledge management skills may be able to adapt more quickly to changing demands than a specialist.

REDEFINING RECRUITMENT

This will raise some issues as to how we go about assessing candidates in the future. The recruitment process could

be run totally differently, more as a “showcase” of the candidate's “robot portfolio” as applied to problem solving.

Of course, there are a number of questions this would raise, for example:

- If the candidate is able to work more efficiently with their own tools than their peers, they may believe their time is worth more than the package on offer. We may see an increase in piece work rather than salaries.
- Legal complications could occur too. If those tools were developed in time paid for by a previous employer, who would technically own the IP? Could it be challenged? What protections would need to be established?
- Perhaps there are IT or security concerns as well, when you consider people bringing their own technologies to bear on business data of varying sensitivity.

An augmented workforce is quite a new idea – and there are lots of unknowns. But we need to start thinking about how to embrace it and make it work for both employee and employer. The benefits for both are exciting and still largely unexplored.

FOR MORE INFORMATION ABOUT CAPGEMINI'S AUTOMATION DRIVE, VISIT:
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FOR MORE DETAILS CONTACT:
Capgemini's Business Services
businessservices.global@capgemini.com



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