



Spotlight

Spotlight Paper by Bloor

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Automation Excellence

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**Automation:
automatically
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of an apparatus,
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Introduction: Why automation? Why now?

Let's start with a definition of automation. This one, from the Merriam Webster dictionary, defines it pretty well:

automatically controlled operation of an apparatus, process, or system by mechanical or electronic devices that take the place of human labor

Looked at this way, automation is not a new concept. In fact, people have been striving to reduce the element of human labour for centuries. Whether it was James Hargreaves' spinning jenny at the dawn of the first industrial revolution in 1764, Henry Ford's fully automated production line in 1913 or the first commercial computer at the Bureau of the Census in 1951, automation has been at the heart of all technological progress. So, what are the reasons for the renewed interest in automation over the last few years?

An interlinked combination of technological advances, changing patterns of business and socio-economic pressure have all combined to create an environment where increased automation is not only desirable but essential.

As far back as the late 1990s, Microsoft was claiming it enabled business to "Do more, for less, faster". The advent of cloud computing and the world wide web, increasing compute power and radically lower storage costs have helped to make that slogan a reality. Global, interconnected supply chains, just in time manufacturing systems and new, disruptive internet business models all add to a sense of increased velocity. Digital Transformation is often cited as the way in which businesses will be able to deal with the pace of change. But too often, Digital Transformation is seen as a one-off project. In reality, businesses now need to exist in a state of constant re-invention. They have to learn to be a Mutable Business, for which automation is a key enabler.

Physical robotic automation is now a common sight in manufacturing and logistics facilities. Visiting a car plant, a major parcels hub or a food processing facility and seeing the level of co-ordinated automation is quite eye-opening for the uninitiated. But robots are now appearing in scenarios that would have seemed like science fiction a few years ago... from self-driving cars to robots performing intricate and delicate surgical procedures.

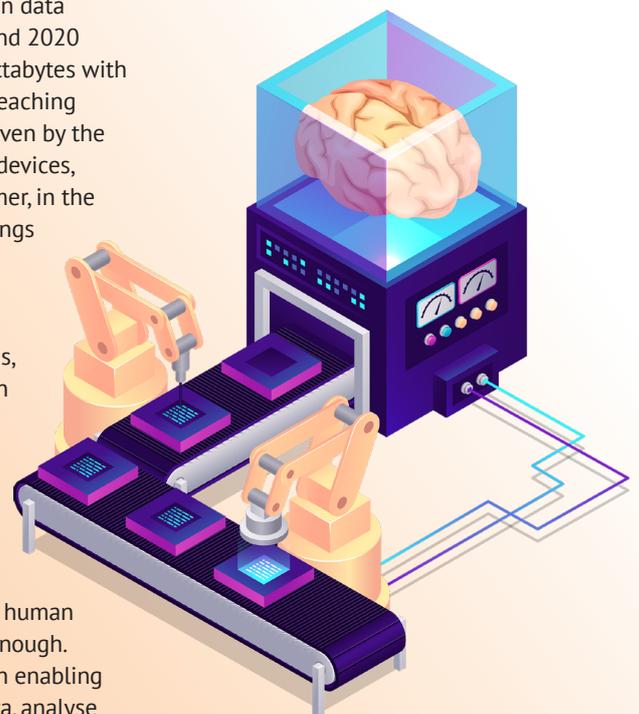
Automation is about more than just physical robots and automated machines. Over the past decade robotic process automation (RPA) has grown in adoption and sophistication. Where, initially, simple repetitive administrative tasks were automated, increasingly more complex workflows, for example in the mortgage and insurance processing sectors, are now automated and are delivering significant productivity improvements.

Underpinning all this is the dramatic rise in the amount of data being generated and stored. An IDC report sponsored by Seagate in November 2018 showed an increase in data produced between 2010 and 2020 from 2 zettabytes to 59 zettabytes with projections of that figure reaching 175 zettabytes by 2025 driven by the increasing connectivity of devices, both industrial and consumer, in the burgeoning Internet of Things (IoT) world.

This wealth of data offers huge potential benefits in terms of analysis, prediction and optimisation of practically every sphere of business operation. Yet, the sheer volume of data and the speed at which it needs to be analysed and acted upon is beyond the ability of the human brain to handle it quickly enough. Automation has been key in enabling businesses to trawl the data, analyse

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More than 30% of enterprises are already investing more than \$50m in Intelligent Automation (IA) technologies.
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Source:
HFS Research in conjunction with KPMG International, State of intelligent automation, 2019 Sample = 590 business leaders including 100 C-level executives





IT has been slow in seeing the value of adopting automation to ensure the performance and availability of business services and applications...



it and act upon its findings. Nowhere demonstrates this better than High Frequency Trading in financial services where reaction to market movements needs to be analysed and acted upon in real-time. Being too slow to react can cost a financial trading house millions of dollars in the blink of an eye. This has had a knock-on effect on IT operations teams in terms of the volume and complexity of data they have to deal with.

Ironically, IT has been slow in seeing the value of adopting automation to ensure the performance and availability of business services and applications in an always-on, delivered-anywhere-on-any-device environment, where even performance degradation, never mind outages, can result in significant lost revenue and lost customer trust.

This brings me to one area of technology I haven't highlighted yet, but which probably accounts for much of the renewed interest and growth in automation; that is Artificial Intelligence (AI). Like automation, AI is not exactly

new. The underlying mathematics has been understood for the best part of a century. Algorithms have been used to drive automation for over half that time. Indeed Prolog, one of the first AI programming languages, was developed back in 1972. What has changed is the advent of the Cloud, the ongoing growth in processing power and the dramatic decrease in storage costs. This has made running AI computations economically attractive to a much wider audience of enterprises and small businesses than ever before.

It is our view that AI and Automation are essential in handling the rapid growth of data and providing the analytics that will keep businesses fit enough to survive and thrive to meet the challenges of operating in a state of continuous change.

The challenges of implementing automation effectively

There was a time when simply implementing automation technology in your enterprise put you a step ahead of the competition. These days, business and IT leaders everywhere understand the necessity of automating processes. Your competitive edge hinges not on whether you automate, but how you do it.

If you try implementing automation on processes that are inherently inefficient, you don't automatically achieve better outcomes, just more sub-optimal outcomes more quickly. Similarly, if you take a piecemeal approach to automation you may find that you don't optimise outcomes across the business and, in fact, reinforce existing silos in your business that stop you from achieving the best possible results.

Part of the challenge of implementing modern automation is understanding its scope.

New automation has always provoked public concern. In the early 19th Century, Luddites in England attacked and destroyed the new spinning and weaving machines. In 1979, Clive Jenkins, a leading British Trade Unionist, and journalist Barrie Sherman, jointly penned a book called *The Collapse of Work*, prompted by increased computerisation. Yet each time, those fears have proved unfounded. Automation gave birth to new forms of work. Standards of living and numbers of people in work in the developed economies have continued to rise.

This is not to underestimate the potential people implications from new AI and automation advances. Our definition of automation talks about reducing human labour. This is hardly designed to make people feel comfortable about their job security. These concerns need to be acknowledged and addressed, but also placed in the context of the new employment opportunities that will follow. Without this there is likely to be significant opposition to new automation that will slow or even stop its effective introduction.

New roles will be created in IT and other areas. This will drive a need to find and retain the skills to fill these new roles. Technical, analytical and knowledge skills will be in high demand. Recruitment of new staff alone is unlikely to fill the gap. A more holistic approach to the development of skills within the existing workforce may become a critical requirement.

Automation will put new and different pressures on your IT Infrastructure. Considerations around IT performance, capacity, resiliency and security take on a new urgency when more and more business critical and customer facing processes are automated. Failure to carefully plan for and resource the enabling automation technology could have a critical impact on your overall business. Indeed, IT Operations Management itself, should be a key focus for automation initiatives.

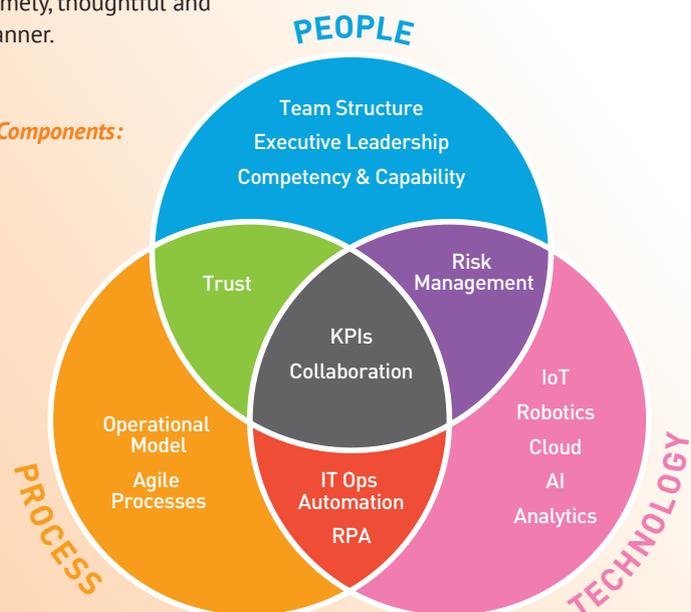
In an extremely competitive and fast-moving business environment, making the space and time to innovate effectively and safely is hard to find. That is why companies are turning to CoEs as a way of ensuring innovative forms of automation are tested and brought into operation in a timely, thoughtful and standardised manner.



A centralised CoE has a key governance role in ensuring the consistency of automation projects as they are scaled out across the Enterprise.



Automation CoE Components:



The role and benefits of a Centre of Excellence (CoE)



Fundamentally, the role and benefit of an automation CoE is to create a collaborative culture of innovation and excellence that embraces the opportunities that well-designed automation will bring.



S imply put, a Centre of Excellence (CoE) is a place to bring together a (usually small) group of subject matter experts and skilled operations staff to focus on a specific technology, or set of technologies, with the objective of improving business outcomes in an environment that is free from the distractions of day-to-day business operations.

Recognition is growing that Centres of Excellence (CoE) are highly advantageous to the bottom line. A CoE can accelerate progress on projects that increase revenue, serve customers more effectively, and save on costs. How then would this be likely to play out in terms of increasing the benefits of automation?

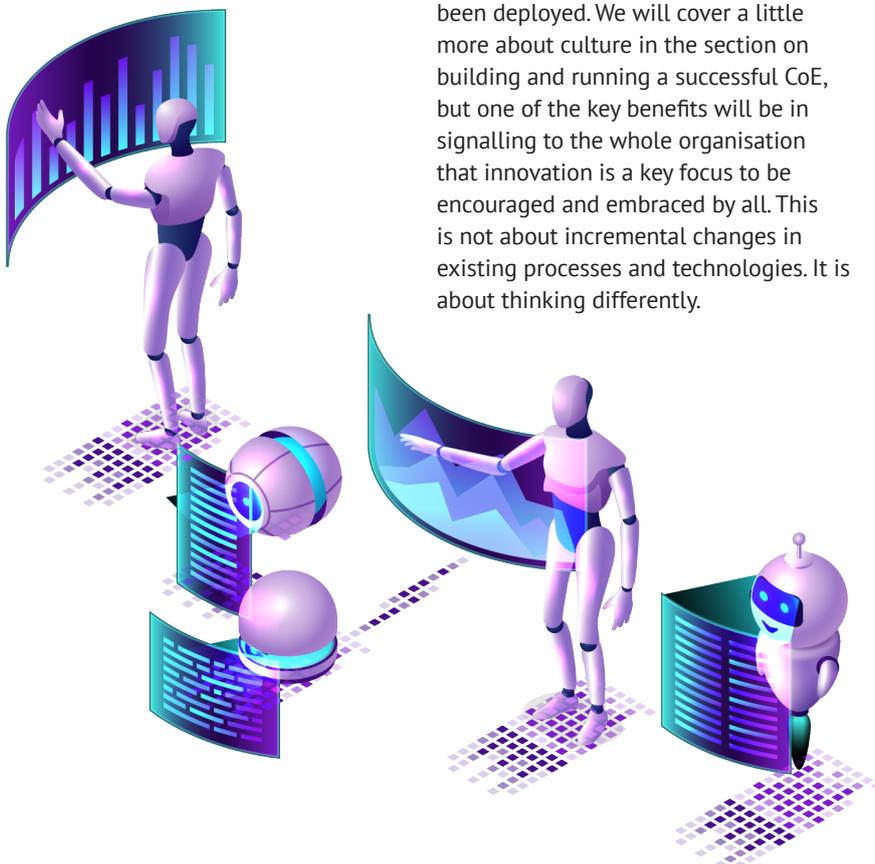
An Automation COE should establish an automation framework, a technology solution framework, a governance and operating model, and a people development strategy and process. With this in place, some of the initial benefits will come before automation itself has been deployed. We will cover a little more about culture in the section on building and running a successful CoE, but one of the key benefits will be in signalling to the whole organisation that innovation is a key focus to be encouraged and embraced by all. This is not about incremental changes in existing processes and technologies. It is about thinking differently.

Take existing processes: we know that if you try to automate a bad process, you will simply get bad outcomes faster. While improving those existing processes will undoubtedly bring some business benefits, thinking about automation should ask questions about the opportunity for new processes that will bring step changes in productivity.

More broadly, there will be benefits from a centralised and standardised approach to innovating automation processes and methodologies. New automation projects will begin to take advantage of improved cross-functional process flows, better use and re-use of common processes and resultant economies of scale. For both Angela Abbot, Intelligent Services Strategy, Automation and Analytics, for Fujitsu, and Suneel Tummala, Director of Client Experience and LeanIT for FIS, who have been implementing automated ITOps solutions from Resolve, a centralised CoE has a key governance role in ensuring the consistency of automation projects as they are scaled out across the Enterprise.

On one hand, automation will help streamline costs. For example, by reducing the proliferation of different tools in IT operations and maximizing existing infrastructure investments. On the other, it will help organisations take on more work without increasing headcount. But, above all, automation will open up new opportunities by enabling new, disruptive business models to be put in place.

Fundamentally, the role and benefit of an automation CoE is to create a collaborative culture of innovation and excellence that embraces the opportunities that well-designed automation will bring.



The components in building and running a successful CoE

A CoE treats automation as an ongoing project requiring planning, testing, and regular evaluation. Set up properly and run well, it can speed up effective adoption of automation and bring real top- and bottom-line benefits to the business. Here is a brief overview of some of the key components in building and running a successful CoE.

● Executive Leadership

Getting executive sponsorship and visibility is key. An executive sponsor could be a CIO, CTO, or CFO. They will be someone committed to maximizing ROI for your organization, and they will see how the long-term savings from automation fit into the big picture of the organization's finances. If the sponsor is not the day-to-day leader of the CoE, then the CoE needs a leader who is a visionary and someone who can influence both the organisation and a wider ecosystem of stakeholders and partners.

● Automation Strategic Framework

You need to define the framework for how automation opportunities are identified and prioritised. Create the overall automation CoE business case, as well as provide a business case framework that can be applied to each automation opportunity. Define the program metrics and measure value realisation.

● Scoping the Enabling Technologies

We can all see the visible manifestation of modern automation in the proliferation of customer service bots, the automation of routine tasks, the increasing use of robotic devices in manufacturing and in hazardous environments. What is sometimes less clear are the technologies, both traditional and emerging, that are enabling this new era of automation.

Some enabling technologies will be obvious. We have already seen that AI and automation go hand in hand. The Internet of Things (IoT) has made possible the operation and management of a wide range of autonomous devices, in the factory, the supply chain, in IT operations, in healthcare and also in the home. Less obvious might be some of the new Low-Code and No-Code development tools that are making it easier and faster to link business processes and workflows directly into applications.

Above all, the Cloud has been a key enabler for automation, both as a philosophy for how automated business services can be deployed, but also in the underlying new technologies, like High Performance Computing (HPC), that have come within reach of more organisations now than would have been possible in the past.

The point here is twofold. Don't limit the scope of what you think can or should be automated. But also, make sure that the CoE has access to enabling technologies that allow you to incrementally and cost-effectively scale your automation initiatives across a wide variety of process types while avoiding a proliferation of point tools.



The World Economic Forum has characterized AI driven automation as the lynchpin of a Fourth Industrial Revolution.



Source:
Klaus Schwab,
*"The Fourth Industrial Revolution:
what it means, how to respond,"*
World Economic Forum,
January 2016





There are many ways to measure the value of your solution. Determine which are the most important to your unique business objectives and identify a method of reporting.



- **Governance**

The CoE has a critical guidance and governing role and needs a strong operating model. It is also important for everyone in the organisation to understand that, generally, expert members of the CoE do not get involved in the delivery of new automation projects.

A steering committee will help your automation projects obtain the resources they need. It will hold regular meetings to review recent automation case studies and prioritise upcoming projects. The committee will have a plan and process to measure ROI for each automation candidate.

- **Measurement of Success**

As with any successful endeavour, the CoE must develop the ability to track, measure, and report on the performance of the team's initiatives across all areas of its efforts, as well as specific metrics within the organization itself. This is critical to the growth and evolution of the CoE, since clearly demonstrating success will be a major factor to secure buy-in and support from stakeholders throughout the organisation, particularly upper management.

There are many ways to measure the value of your solution. Determine which are the most important to your unique business objectives and identify a method of reporting. In some cases, you might have an automatically generated report of tangible metrics. In other cases, you may need to create a plan for functional teams to report to the steering committee on successes and failures.

You need to measure your ROI for the continual improvement of your COE processes and to substantiate ongoing funding. However, identifying ROI is often a long term and sometimes challenging goal. Therefore, having some specific Key Performance Indicators (KPI) that can identify benefits more quickly will be required.

In putting together KPIs, the main focus must be on achieving measurable business outcomes. You should be looking to automation projects to increase revenue and/reduce costs. But a KPI that might not automatically be associated with automation is customer satisfaction. For example, using automated bots to replace personalised customer interactions might reduce costs and enable more calls to be handled, but the customer experience may be perceived as being very poor, leading to increased customer churn. On the flip side, automation that improves the performance and availability of customer-facing applications might improve customer satisfaction and loyalty.

Ultimately, developing a balanced scorecard for automation should take in a range of KPIs that are specific to your organization. This will also allow the use of KPIs that reflect the operational efficiency of the CoE without losing sight of the original objective of business improvement.

- **Team structure**

CoEs also need to bring together people who are cross-discipline and whose experience touches the core business in multiple ways. For instance, an Automation CoE might bring together a team of people from Customer Services, IT Operations, Software Development, IT



Security and Operational Development that creates more efficient and effective automation of the IT Service Management function for your organisation. Respecting and engaging the expertise of these different disciplines is key.

● **Competency and Capability Building**

Human resources and organisational development both demand significant focus for CoE success. There will be a need to provide the skills, information, knowledge, and training to enable CoE members to perform effectively. Most of the skills or competencies that are required to fuel a CoE are niche or rare, and hence a major challenge; therefore a carefully considered hiring strategy will be required, in addition to internal development.

There is also the need to elaborate the management processes, structures, and procedures of the CoE as well as their relationships with the rest of the business and any other stakeholders.

● **Culture/Ethos**

An Automation CoE should provide an agile, fast moving environment where ideas flourish and excellence comes as standard. The guiding principle should be one of fail fast, fail forward. To be clear, this is about giving the CoE team members the confidence to recognise when a particular project or development is not going to succeed or deliver the required benefits, halt the project in a timely manner, learn what hasn't worked and take that learning forward without any apportionment of blame.

Collaboration is a core tenet of a CoE. The last thing a CoE needs is bringing in existing siloed thinking and activity. A successful CoE must create an environment where normal competitive departmental and private rivalries are willingly put aside. One of the ways to achieve this is to get cross-functional teams to submit ideas and proposals for automation projects, thereby creating an "army of automators." If silos of automation are created, then an Automation CoE will essentially have failed in its purpose.

● **Agile Processes**

We are living in a Cloud and micro-services era of continuous integration and continuous deployment. Whatever the preferred method of development and project management, it needs to be agile. That includes the principles of shift-left embodied in DevSecOps.

In agile project management, there are a range of different approaches and methodologies like Scrum, Kanban and Lean. There isn't necessarily a right and a wrong one, but pick one that suits your organisation. There are agile project management tools like Jira Agile, Agile Bench and Pivotal Tracker to help keep you on track. Once you get into the development of automation software, typical continuous development and continuous integration tools like TeamCity and Jenkins will also feed back into the agile project tools mentioned above.

● **Building Trust in Automation**

History shows that new automation is usually greeted with a mixture of caution, concern, scepticism and even downright hostility. To overcome this, CoEs will need to strive for transparency in describing how the automation works, as well as what has been done to ensure that it is safe and secure. To this end, explainability, particularly around AI, security, auditability, maintainability, and quality generally need to be built in from the start. Again, remember, automation very effectively documents bad practices that you might get away with as undocumented manual processes, but which could have dangerous consequences when automated.

● **Risk Management**

Which brings us neatly on to risk management. Automation doesn't necessarily reduce or increase risks. It does change them. Generally, organisations are poor at identifying and managing risk. More specifically, they tend to be poor at understanding the impact of risks and the likelihood of them occurring. A CoE needs to understand the appetite for risk in the organisation, be able to assess the impact of risks and their frequency, in newly automated processes and ensure clear mitigations are put in place.

Next steps

Using automation to transform operations requires a change in mindset and culture within your organisation. There will be visionaries and lateral thinkers who will see the value of automation from the start. However, you will still need to plan and optimise your CoE processes. Other employees won't be sold on new automation until they see successful use cases popping up all around them. If your CoE is successful, eventually it will simply become the new normal for everyone in the organization.

If you are thinking about developing a CoE, start by identifying and engaging like-minded automation enthusiasts in your organisation. Seek out employees, but maybe also external people, with the skills and knowledge to lead the core CoE team and the ones who are great communicators who can enthuse all teams and employees about the benefits of automation.

We believe that setting up and enabling an Automation CoE will be a key factor in making your organisation truly Mutable and one that thrives, rather than just survives in this ever-changing business environment.

FURTHER INFORMATION

Further information about this subject is available from www.bloorresearch.com/update/2602



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About the author

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Paul has had a 40 plus-years career that started in logistics with a variety of operational management roles. For the last 36 years, he has worked in the IT industry, mostly in sales and marketing, covering everything from mainframes to personal computers, development tools to specific industry applications, IT services and outsourcing. In the last few years, he has been a keen commentator and analyst of the data centre and cloud world. He was also, until recently, a Non-Executive Director in an NHS Clinical Commissioning Group.

Paul has a deep knowledge and understanding about the IT services market and is particularly interested in the impact of Cloud, Software Defined infrastructure, OpenStack, the Open Compute Project and new data centre models on both business users and IT vendors. His mix of business and IT experience, allied to a passionate belief in customer focus and “*grown-up*” marketing, has given him a particular capability in understanding and articulating the business benefits of technology. This enables him to advise businesses on the impact and benefits of particular technologies and services, and to help IT vendors position and promote their offerings more effectively.

Bloor overview

Technology is enabling rapid business evolution. The opportunities are immense but if you do not adapt then you will not survive. So in the age of *Mutable* business Evolution is Essential to your success.

We'll show you the future and help you deliver it.

Bloor brings fresh technological thinking to help you navigate complex business situations, converting challenges into new opportunities for real growth, profitability and impact.

We provide actionable strategic insight through our innovative independent technology research, advisory and consulting services. We assist companies throughout their transformation journeys to stay relevant, bringing fresh thinking to complex business situations and turning challenges into new opportunities for real growth and profitability.

For over 25 years, Bloor has assisted companies to intelligently evolve: by embracing technology to adjust their strategies and achieve the best possible outcomes. At Bloor, we will help you challenge assumptions to consistently improve and succeed.

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