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Capgemini Perspectives: The automation advantage in the consumer products and retail (CPR) industry

How CPR companies can
make legacy IT keep pace
with the cloud



About the research

The analysis in this report is based on an online survey of 415 IT executives commissioned by Capgemini. This explored how enterprises are currently applying automation across their IT operations, what benefits they are achieving, and ways to overcome some of the common barriers or constraints they face on their cloud automation journey.

Just over one-third of the respondents (34%) hold C-suite positions, and 66% are management-level IT employees. All respondents work in organizations earning \$500m or more in annual revenue, with one third (33%) of the total respondents working in the consumer products, retail and distribution (CPR) sector.



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How CPR companies can make legacy IT keep pace with the cloud

In the CPR industry, speed and agility are everything. Whether you're a manufacturer looking to turn a great idea into a market-leading product, or a retailer trying to build a leaner and more efficient supply chain, the processes and technology your business depends on directly determine your success.

If you can accelerate core IT processes such as development and deployment, you can also accelerate the business processes they support – and by extension, build a more agile, faster, and more effective business. To achieve this, many CPR companies are turning to automation.

But what that automation looks like may surprise you. It's not always advanced levels of Robotic Process Automation or Artificial Intelligence. It starts right at the ground level of IT, by automating most elements of the CI/CD (continuous integration/continuous delivery) pipeline which are otherwise time consuming and effort intensive.

This automation is helping CPR companies to enable their legacy IT to keep pace with the speed of digital transformation – ensuring that the critical legacy technologies they've depended on for years can still support their operations and deliver competitive advantage today.

For many CPR companies, this approach to automation is helping them achieve new levels of efficiency, while truly getting the best of both the cloud and on-premises IT worlds:

- Using cloud tools to automate legacy IT operations frees up essential resources for innovation
- The automation is layered on top of services and infrastructure that already exist, meaning there's no need to rip and replace trusted solutions

- By using automation you can lay the foundation for a seamless move into the cloud, and embrace cloud-based DevOps and cloud-native development for future deployments

For CPR IT leaders looking to bring the agility and simplicity of cloud to their hybrid IT landscape, it's a powerful proposition – enabling them to move forward with cloud transformation while still using the trusted legacy IT that isn't a current priority for migration. However, there are a number of challenges that remain for those ready to bring the automation advantage to their legacy IT.

88% of CPR companies think automation has already had a positive impact on the agility of their business – and 86% expect that agility to increase further over the next five years.

Data has completely transformed the connected worlds of consumer products and retail

Manufacturers are no longer separated from their customers, nor are retailers disconnected from the earliest stages of the supply chain.

Today, data and new cloud-based technologies have connected every aspect of the consumer product journey – from ideation and design, to the moment a product is in a customer’s hands.

It has enabled almost limitless new capabilities for the companies ready to seize them. But with those new capabilities have come a host of new challenges for manufacturers, distributors, and retailers alike:

- **Routes to market have changed**
Manufacturers of consumer goods can now go straight to customers, instead of going through retailers
- **Supply chains are becoming customer-centric**
As paths to market have changed, customers have become a more important part of supply chain operations, forcing companies to adapt operations to serve those customers quickly and directly
- **Customer needs and expectations have changed**
Customers want to know more than ever about what they’re buying and their buying missions are changing – putting pressure on both manufacturers and retailers to drive deeper engagement. But as our [‘Loyalty Deciphered’](#) report found, the benefits of delivering what customers want can be huge – with emotionally engaged customers spending up to two times more on brands they’re loyal to
- **Business models have shifted and transformed**
We now live in the age of hyper-connected, omnichannel commerce. The role of the store is changing, digital giants like Amazon are defining how retail looks, and there is a greater need than ever to integrate and collaborate across the entire retail and manufacturing value chain

- **There’s greater complexity than ever before to contend with**

Retailers and manufacturers alike are tasked with delivering what digital customers want, while remaining competitive on price, and keeping pace with a diverse new group of major international competitors

- **Everyone needs to keep pace with technology to remain competitive**

Technology isn’t just creating new opportunities for CPR companies, it also fuels customer demands and expectations. Businesses in this space don’t have the luxury of considering which new tools they might want to start using, their customers and the market decide for them – dictating what they need to compete and thrive. For example, our recent research report on [‘Conversational Commerce’](#) revealed that spending via voice assistants is expected to grow by sixfold as more users demand to use the channel for purchases

Together, these shifts have put immense technical pressure on retailers and consumer product manufacturers. Companies are ready to meet the demand for smart new services and deliver what today’s customers want, but doing it with their existing technology isn’t always possible.

Whether it’s launching a new customer-facing service to meet a new demand, or just improving the speed and quality of current technology to better keep pace with these shifts, many retailers and manufacturers have looked to the cloud to help them gain greater levels of agility.

Our 2017 industry perspective paper 'Cloud native comes of age in consumer-driven industries' confirmed the growing importance of cloud native in this industry, with the percentage of new business applications that are cloud native forecast to double by the year 2020.



Why CPR companies need automation

What many CPR companies are really interested in is seeing how automation can transform and accelerate their go-to-market processes.

Automation in the world of consumer goods and retail isn't just about flashy innovation projects, such as harnessing Robotic Process Automation in stores and warehouses, or automating Master Data Management. Sometimes it's simply about doing what you're already doing in a faster and smarter way.

By automating the foundations of their IT operations, CPR companies can simplify and speed up many of the processes that slow their route to market. They can find smarter ways of turning their new products and ideas into reality – and getting them on shelves – faster.

This automation of the CI/CD pipeline lays the foundation for huge future transformations – without abandoning legacy IT investments. Whether you have ambitious goals to harness robotics, want to create customer-facing AI and Machine Learning services, or just want to execute a broader transition into the cloud for your entire business, you cannot ignore the automation you already have in place.

Automation is helping 4% of CPR companies in our survey to deploy new code into production continuously, while a further 6% do it at least hourly.

A Fortune 100 consumer goods manufacturer automated its CI/CD pipeline on its new cloud environment and achieved a 10% reduction in application downtime.

The best performers will probably deploy 20 times a day, because they're making incremental changes each time, not massive ones. The rate of change is extraordinarily high, but the size of each change is very small. In that sense, these firms are massively de-risking their operations.

Dave McJannet,
Chief Executive Officer, HashiCorp



Major European manufacturer and retailer harnesses the power of cloud automation across its legacy IT environment

When a major European manufacturer and retailer faced pressure to expand and grow to meet its strategic objectives, one major barrier stood in its way; its expansive and complex legacy IT environment.

Instead of ripping and replacing the legacy IT the company already relied on, we worked closely with them to build an automation solution designed to get the most from existing investments, and bring the flexibility and agility of cloud to the existing environment.

The company can now quickly spin-up consistent environments across the complete application development life cycle; starting from project test environments, to commonest environments, all the way to pre-production testing.

Its legacy environment has been transformed from a static set-up to a more dynamic one, allowing for a much faster throughput of projects, as well as a more cost effective way of managing the infrastructure estate. For traditional companies in this industry with a large legacy footprint, their move to the cloud cannot happen overnight. This means for many years to come, they will still continue to rely on at least some of their purpose-built custom legacy systems and applications.

For those companies, there's one very important question that needs to be answered: How can we continue to utilize the legacy technology we've built and depend on, while keeping pace with competitors that have embraced cloud-native approaches to application and service development and management? For many, automation is proving to be the answer.



Overcoming the slowest common denominator

The slowest common denominator for those CPR companies still reliant on legacy IT is the IT itself.

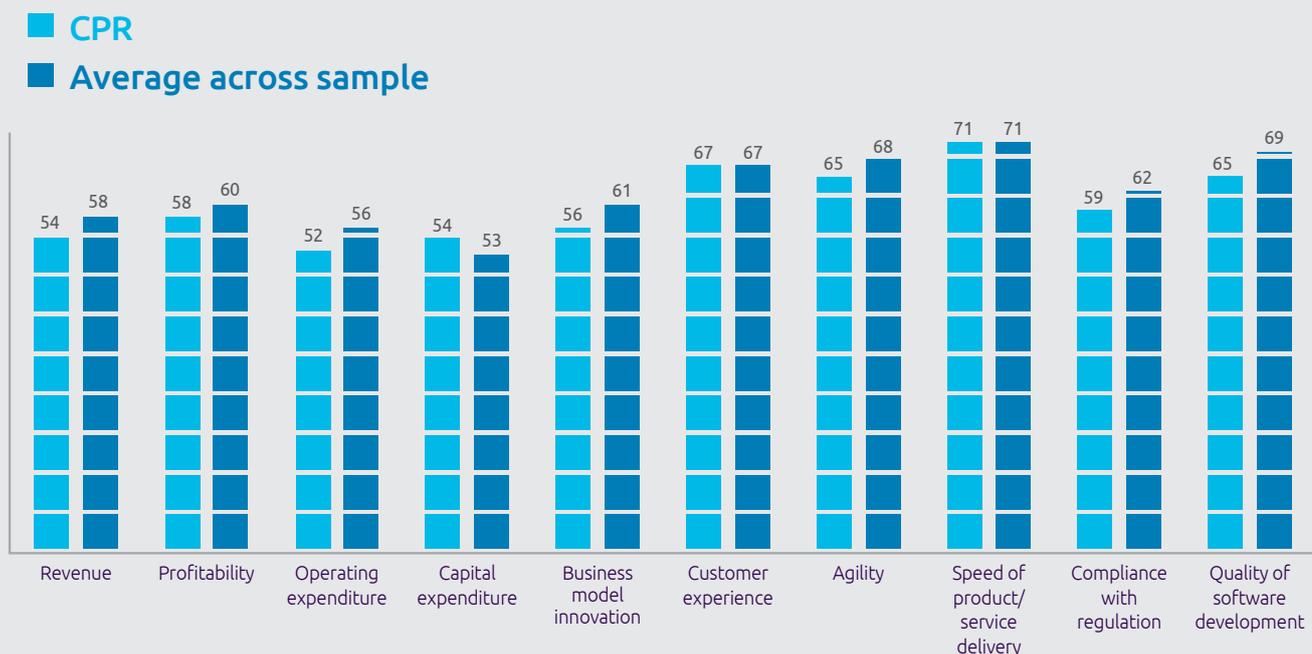
To avoid being held back and to keep pace with their agile competitors, these companies need to pursue a strategy that includes:

- Migrating applications to the cloud
- Building new cloud-native applications
- Developing modern APIs (application programming interfaces)
- Modernizing legacy technology
- Embracing DevOps principles and culture

Across both the legacy world and in the cloud, there is one lever that consistently delivers acceleration— automation.

Automating legacy systems and IT operations processes allows companies to manage traditional applications and infrastructure in a more competitive, agile, and scalable manner. The result is that new code can move from development into production in minutes, even in traditional applications. The velocity of software development and deployment increases across the estate, improving business agility. This is Enterprise DevOps.

Figure 1. The automation advantage: share of survey respondents reporting a positive automation impact on indicators of business performance for CPR and the average across the entire sample.



Why CPR companies have struggled to effectively utilize automation – until now



Rahul Dharankar
Director, Consumer Products,
Retail & Distribution,
Capgemini North America

Automation can bring huge benefits for CPR companies, and for many, infrastructure automation isn't a new concept. So why is it that companies in this industry have yet to truly seize the automation advantage, despite being one of the first sectors to take steps into infrastructure automation?

29% of the CPR companies we surveyed launched their efforts to automate infrastructure provisioning at least four years ago. But to understand why some haven't seen the results they wanted to from automation so far, we need to take a step back and look at some of the unique challenges faced in the CPR sector.

Firstly, CPR companies are often broken down into multiple brands that operate almost entirely autonomously. If automation isn't based on consistent best practices that are applied across all brands, the benefits a company sees from using automation will be understandably limited.

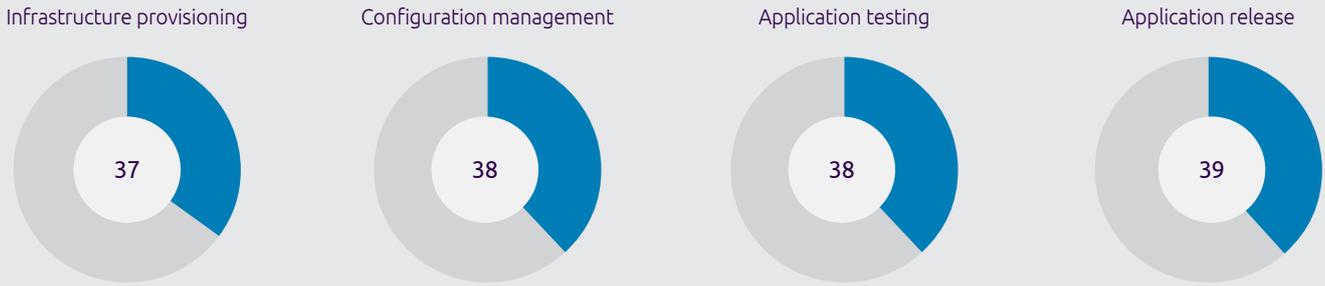
CPR is also an extremely diverse sector, with many companies acting as distributors, retailers, manufacturers and more. When your operations are that diverse, areas of your business IT can quickly become siloed, in the same way as the companies operating autonomous brands end up fragmented.

Whether you're a single brand with diverse operations, or a company with many unique brands operating as part of it, for automation to be successful, you need to take a holistic, standards-based approach to it across your entire business to see the best results.

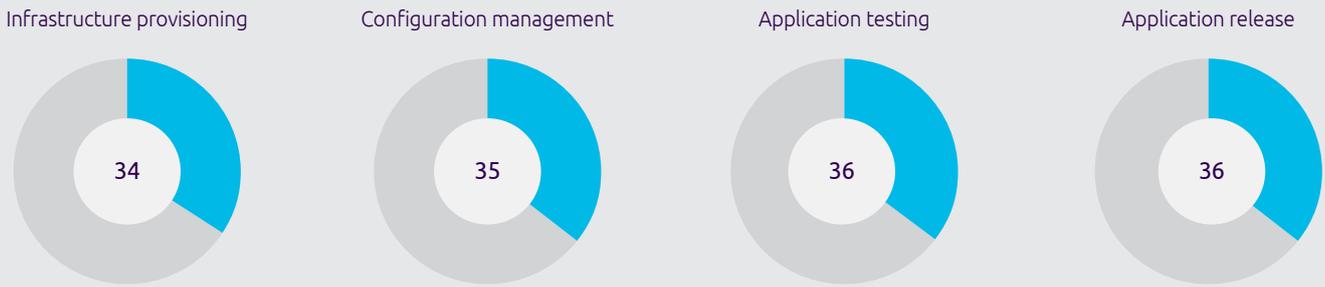
That's why the cloud is such a useful platform for this kind of transformation. No matter how well different lines of business or brands have been working together until now, the cloud provides a single, connected platform for everyone, making it a great way to establish new best practices for development and application and infrastructure management.

Figure 2. Extent of automation by respondent organizations.

Average across sample



CPR



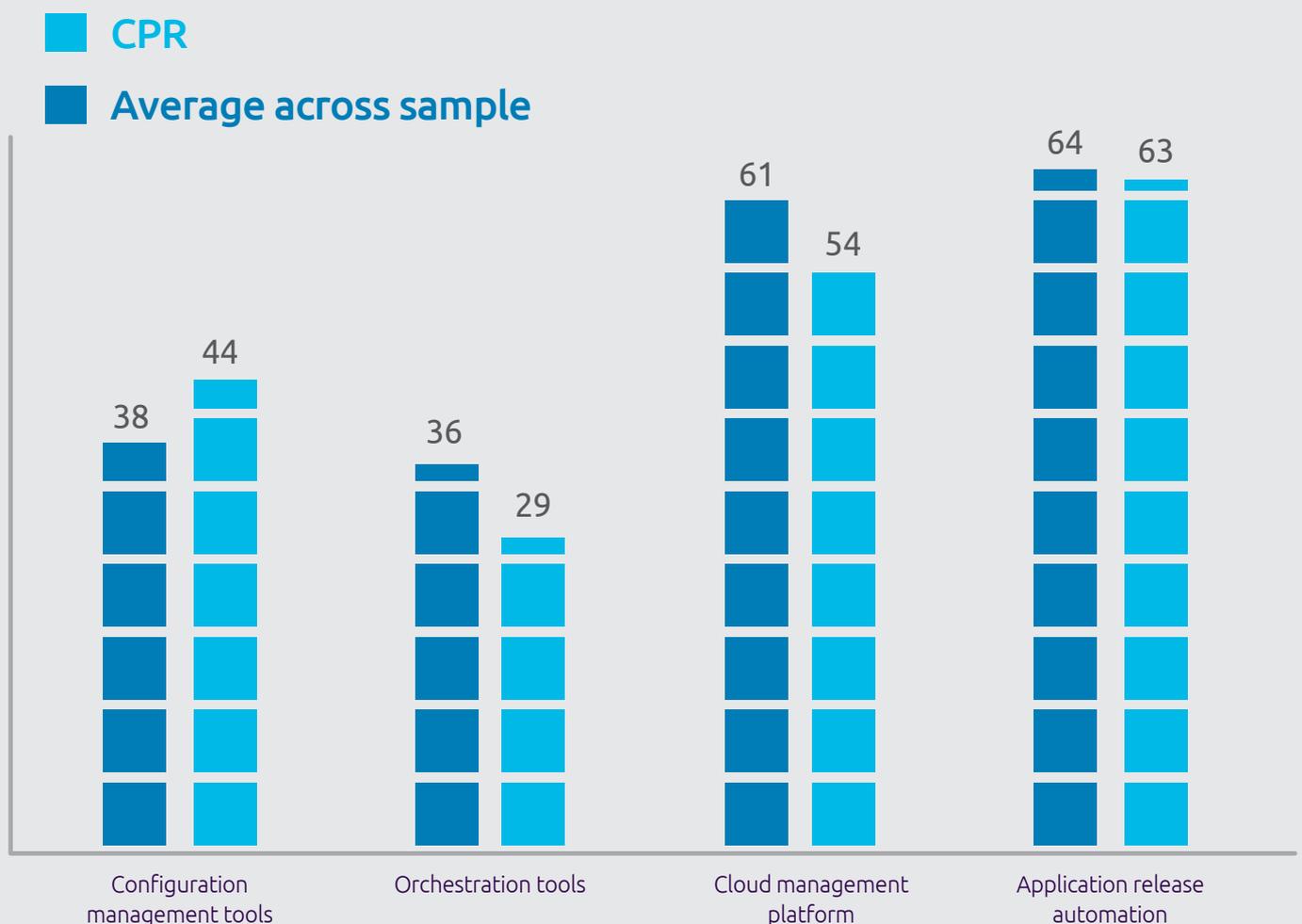
SECTION 3

Who is ahead of the game?

In our global research report 'The automation advantage', we identified the cloud automation Fast Movers by looking at three key attributes; how long they've been utilizing automation, how broadly they've applied automation across their IT footprint, and how well-funded their automation projects are.

The Fast Movers advantage stands in stark contrast over the rest as we compared their progress on automation. For example, Fast Movers have automated more than 3.2 times the number of infrastructure provisioning processes than the bottom group – the Followers. The former have automated 3.6 times the number of configuration management processes, and 3.8 times the number of application testing processes as the Followers.

Figure 3. The automation tools used by respondents' organizations.



An abundance of opportunities and tools



Clifton Menezes
Cloud Leader,
Capgemini India

The most advanced CPR companies are exploiting new tools to deploy code continuously. These tools now enable not just automation of builds and deployments, but also end-to-end automation across the entire development life cycle—all the way to production deployment.

Their success highlights what is possible for companies:

- **Most processes can be automated.**

Even for legacy applications running on premises, most elements of the CI/CD (continuous integration/continuous delivery) pipeline can be automated. This is because, once automated, on-premises infrastructure has many of the characteristics of the cloud, including a high degree of virtualization and relative independence from hardware constraints through abstraction.

- **Infrastructure as code is the enabler.**

How fast can developers provision a server to host a new application in production? Lengthy traditional provisioning processes can derail efforts to automate application deployment pipelines. But infrastructure as code (IaC), offered by most cloud vendors today, allows an end-user to provision a virtual machine in seconds. The same is possible for any type of infrastructure, including a virtual private cloud or an API gateway.

- **Serverless technologies are taking center stage.**

The industry has started thinking beyond the need to provision virtual machines. Serverless means that the infrastructure on which an application will be run is provisioned by the cloud platform; developers don't have to think about provisioning at all. Arguably, serverless coupled with IaC can lead to a "no-ops culture," or at least help break down the traditional silos between development and operations teams.

The levels of automation described here are not limited to cloud-native companies. Even those with large legacy estates and multi-cloud environments can implement continuous delivery and release and one-click infrastructure provisioning.

PaaS (Platform as a Service) makes this possible for both cloud-native and traditional applications. Our report '[Cloud native comes of age in consumer-focused industries](#)' showed that companies making the shift to cloud native devote roughly one-quarter of their total cloud spending on PaaS today, and plan to boost their investment in it substantially, to 44% of the total, within three years. These firms' traditional applications, if migrated, will also benefit from the automation functionality conferred by their PaaS.

SECTION 4

Automation challenges

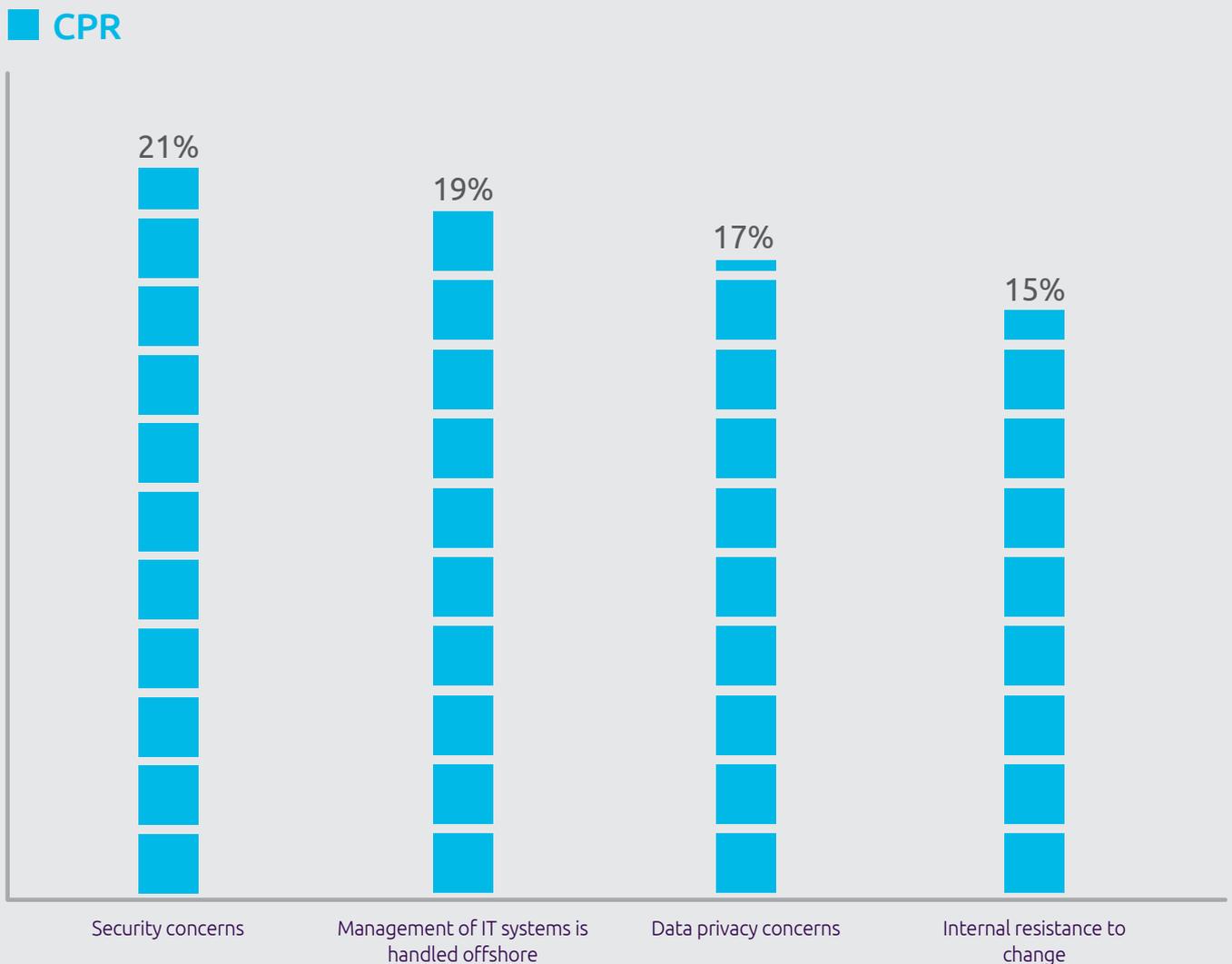
Companies in the CPR industry face a number of unique challenges in their journey to embracing cloud automation – with most arising from the complex and often disconnected nature of managing operations across multiple brands.

Paramount among these is security. IT leaders face considerable pressure from CEOs and boards to ensure that technology initiatives do not introduce new vulnerabilities. In

the survey, 21% of respondents from the CPR industry cite security concerns as their number one automation challenge.

Some of the IT executives in the study make clear, however, that automation tools can bolster application and data security more than they compromise it, as you can see in our case study on page 22.

Figure 4. The toughest obstacles for CPR to automation of IT operations processes (top responses).



The human dimension of automation

Internal resistance to change hampers all of the surveyed companies irrespective of their industry or automation maturity. Change resistance is particularly acute on the operations side. 4 in 10 firms in the overall survey say their engineers and operators assume that higher levels of automation means their jobs are at risk.

7 in 10 CPR companies say, however, that they have successfully redeployed engineers to focus on new development rather than to eliminate headcount. Indeed, many are taking advantage of automation to streamline the structure of their teams in line with their DevOps strategies.

On average, 33% of companies want to automate more, but feel hamstrung by the myriad number of tools and approaches that could be used. There is a lot of choice out there, with many different platforms and solutions for IT to evaluate – and for many companies, there is no single right answer.



How can teams use their freed-up resources?



Charlie Li
Head of Cloud Services,
Capgemini North America

“Freeing up resources to focus on higher value tasks” can sound like a management cliché, but automation done well makes it a reality. Here are three valuable uses of developer and engineer time once their manual tasks begin to be automated:

- **Write more and better code.**

In a typical organization, developers probably spend less than half their time being developers. Freed from testing and waiting for infrastructure to be provisioned, they can create more and better code (for example, re-architecting for microservices with DevOps for greater agility and acceleration). This also means they can innovate more—for example, by embedding machine learning into their code. The major cloud providers have made machine learning easy to work with; now, developers can get up to speed on APIs and quickly drop them into their applications.

- **Expand QA testers’ coverage.**

Quality assurance (QA) staff spend much of their time today waiting for testing environments to be provisioned. Once testing and provisioning are automated, testers can significantly increase their coverage. Few companies today can say that they test more than 70% of their applications; once automation tools are put to work, that becomes possible. It also means that testers can reduce the amount of leakage of defects into production. If an organization decides it does not need more coverage, QA resources can be redeployed without too much difficulty to tasks such as managing test environments or even to application development.

- **Empower infrastructure “brokers”.**

Even engineers who have spent years managing legacy infrastructure can become more effective with automation. It will require some dramatic changes in skillsets for engineers to be able to make their way around a hybrid and multi-cloud environment, and not everyone will make the transition. But retrained operations staff can become brokers of virtual infrastructure, for example, rather than caretakers of hardware. Their job will be to make the lives of developers and QA testers as easy as possible.

How can barriers be dismantled?

Firm support from the CEO and CFO is indispensable to the success of an automation strategy. Nearly 80% of CPR companies for example, maintain that internal resistance to automation can be overcome relatively easily through more effective communication from senior management.

Securing external help is also effective. This includes engaging external consultants to help review the current state of DevOps automation tools, build an automation roadmap or to manage the implementation of automation initiatives.

The injection of new blood and upskilling of existing staff are other necessary ingredients for change. Very few Fast Movers (16%) say they lack the skills necessary to succeed with automation, which is also the perspective of most of the executives we interviewed. Reorienting engineers and developers to work effectively in a largely automated environment is challenging, but the most advanced CPR companies are showing that trying to instill a DevOps culture helps to make it easier.



CASE STUDY

Automation means tighter security for iconic fashion brand

Security concerns are both a challenge and a driver of automation. In the survey, Fast Movers and Followers alike point to security as the foremost challenge they encounter in their automation projects. (A large number of Fast Movers also cite data privacy concerns.) IT teams at some companies, however, see improved security as a motivation for automation.

One international fashion house recently embarked on a large-scale migration of applications to the public cloud. According to its head of business ICT, at the end of the four-year process the company's environment will be hybrid: mostly public cloud, but with some applications run in a private cloud and some remaining on premises.

Automation has not yet begun, but the management realizes it will need to start within the next couple of years to be ready for the new environment. When it does, he says, security will be the first set of processes to be automated. The brand has on-the-ground operations in over 20 countries around the world, including a large number of stores in Asia. Those operations present a particular challenge in China because of disruption of services due to the government Great Firewall and packet filtering activation. Cloud applications with server installation outside China are affected by unforecasted local government security checks.

"We need to automate security checks for user applications," says the head of business ICT, explaining that automated alerts, for example, can trigger immediate actions to close a breach emerging overnight in Asia rather than waiting for morning in Europe to respond manually. Through automation, he says, "we can definitely improve the security of our user-level environment."





RECOMMENDATIONS

How CPR companies can seize the automation advantage

Automation of their CI/CD pipeline and DevOps are key to accelerating time to market and improving competitiveness without abandoning legacy IT for CPR companies. But what exactly do they need to do to get cloud automation right, and unleash their automation advantage?

Recommendation #1: Define your automation strategy with KPIs that have a strong connection with business demands and goals.

No technology initiative can truly succeed unless it is designed to meet bigger, predefined business goals. It is important to measure targeted outcomes via meaningful metrics.

Define KPIs for time to market and agility, and develop your automation strategy to align to them. Focus clearly on those KPIs, and aim to achieve them before setting your sights higher – this will help you manage your expectations and walk before you run with broader automation projects.

Recommendation #2: Leverage Platform as a Service for automation and acceleration

Platform as a Service (PaaS) is an enabler of cloud-native development – but the automation capabilities of PaaS can also accelerate traditional applications.

PaaS improves time to market by facilitating continuous integration and delivery. It allows developers to move from concept to code in minutes, and use instant self-service provisioning to get new services, integrations or updates up and running extremely quickly.

Recommendation #3: Automate the provisioning of infrastructure and the entire CI/CD pipeline

CI/CD doesn't just apply to container-based microservices. The core tenets, including versioning, build, and testing apply to both modern and legacy applications. However, legacy applications – where code changes tend to have more dependencies and a larger blast radius – can pose greater automation challenges.

IT leaders should evaluate CI/CD automation tools according to their ability to shorten the development cycle, accelerate time to release for new services, and support broader business agility.

Recommendation #4: Embrace and enable DevOps

Automated provisioning and application release automation are critical enablers of enterprise DevOps; but DevOps is more than a technology movement. It is a holistic culture and practice that demands a governance model, skills, and ways of working that differ radically from those associated with waterfall development.

IT leaders need to drive behavioral and cultural changes to achieve a DevOps culture. This means that alignment of the IT delivery process through behavioral and cultural standardization should be a higher priority than standardizing tools. It is important for the team to embrace baseline DevOps best practices irrespective of the underlying toolset or technologies.

The behavioral and functional aspects of embracing a DevOps culture should be defined as a maturity model backed by a roadmap. Tools and technologies can then help automate and standardize these processes and outcomes, in line with your clear vision for a more flexible development culture.

To support this transition, IT leaders will need to lay the foundations of their cloud operating model and map out an agile and people-centric transformation plan. Detailed design of the operating model should show what DevOps practices will mean in the enterprise, with new roles and KPIs for both IT and business teams.

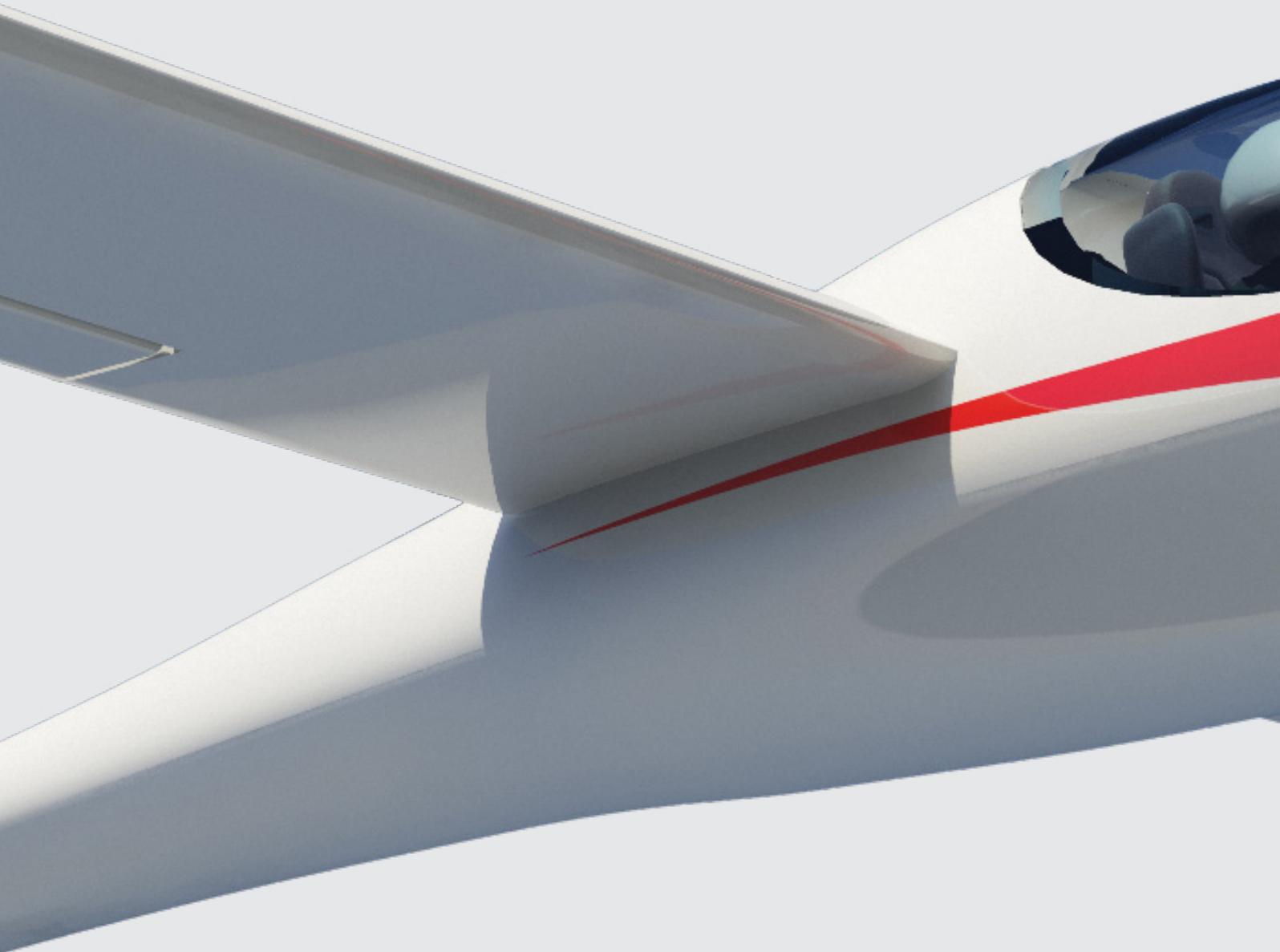


Get the full research report

See how the CPR sector compares to other industries as companies pursue the automation advantage – and get a closer look at how successful businesses are achieving their cloud automation dreams without abandoning their legacy IT.

[Download the report](#)

[Take the automation survey](#)







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