


Optimize cost and agility

Maximizing cloud for
fluid efficiency



 FUJITSU

Optimizing cost and agility is essential to survive

In today's volatile and unpredictable business landscape, change is the only constant. Very few things have put as great a strain on organizations as COVID-19, particularly when it comes to financial pressure to save costs. Optimizing spend both from an IT and business operations perspective will continue to be a high priority, with some best practices and good lessons learned courtesy of the pandemic to carry forward, as we move into the next year.

However, looking beyond the need to optimize cost, the simultaneous need to enhance agility and service quality to respond faster to increasing and rapidly changing market demands is also putting organizations in a position where they must do 'more with less'.

While many have implemented cloud migration and modernization projects already, it's now time for organizations to really maximize the value of cloud technologies to become an adaptive, event-driven entity.

In theory, this means using cloud to act as the flexible, futureproof digital core that enables iterative yet holistic change. In practice, it will mean embarking on new modernization projects and revisiting previous ones, with the goal of ensuring that both cost and agility are optimized for an era that demands less 'big-bang digital transformation' and more continuous evolution at rapid speed.

Key initiatives for you to focus on

In our recent research, over 75% of IT and business leaders said they need to react faster to market disruption and change. The truth is, many are spending too much of their precious time, budget, and resource simply 'keeping the lights on' at a time when the need to stabilize for a reliable business as usual (BAU) has been superseded by the need for future-proof adaptability. Cloud will become even more key to serving this demand. While most organizations adopted cloud in some way a long time ago, its accelerated use throughout the pandemic has highlighted its importance in preparing and moving through times of change – as demonstrated by the pace and performance of cloud-first organizations throughout this time. Now it's about moving beyond the adoption of capacity and point-solutions and towards using cloud to drive the iterative, holistic transformation of infrastructure, applications, and services.

In this guide, we explore three key initiatives that you will need to address to optimize cost and agility for your organization. Scroll down to find out what these are.

Opening thoughts: Why cloud transformation strategy needs a re-think



Jason Daniels - Digital, Data & Cloud Leader at Fujitsu

The virtues of cloud are very well established, but I still feel that, even today, very few organizations are maximizing it for full benefit. Of course, there have been surges in adoption and migration in the past where cloud has really proven its value; the most recent one being during the COVID-19 outbreak when cloud's on-demand capacity was crucial for many organizations' remote-working and service scale-up/down. However, as a long-term strategic environment for driving business change, most organizations still have work to do in terms of getting their approach right; they need a strategic re-think to implement and use it more effectively.

The absence of a clear, 'future-fit' strategy is an issue that has got history. For example, if we look at the great lift-and-shift of several years ago, when organizations moved workloads to the cloud en masse without enough thought, they were often let down by the benefits it delivered compared to those expected. And the effects of this are still being felt today. Ironically, in a lot of cases, the tactical pursuit of reduced cost and reduced technical debt has created more problems, which have required complex and expensive remedies (including further migrations and repatriations) for the long-term.

In our view, all organizations need to focus on mastering three things to optimize cost and agility:



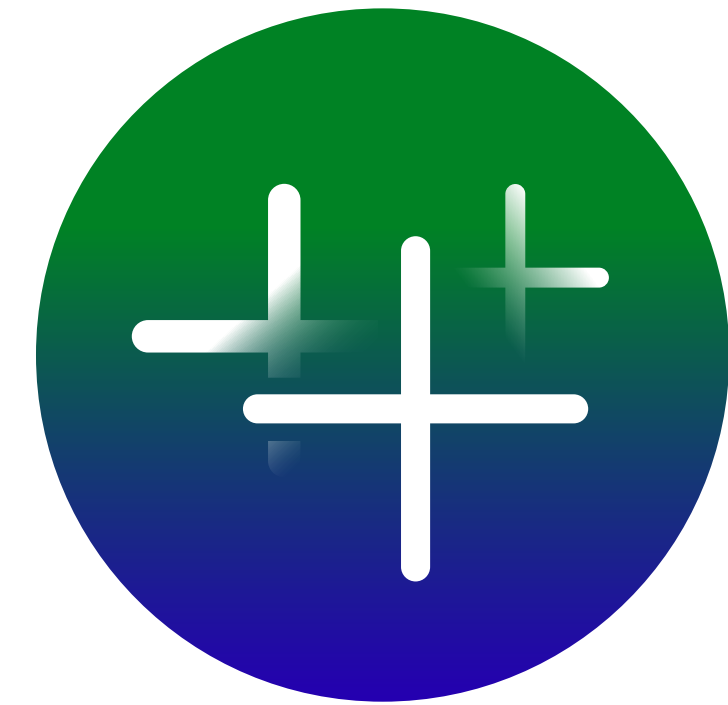
1. Cloud-enabled cost reduction

Mastering migration and continuous management for best ROI



2. Removing technical & organizational debt

Building agility through the right approaches and ecosystem



3. Seamless service enhancements

Utilizing self-service and automation to deliver better availability, reliability, and responsiveness

1. Cloud-enabled cost reduction

Cloud is well known for its cost efficiency compared with more traditional data centers or on-premises hosting environments. However, many organizations are still not realizing the full cost-saving potential of cloud - not only in terms of infrastructure running costs, but broader opportunities for business savings as well.

Pertinent examples are the Fujitsu customers who are achieving 'day 1' cost savings of up to 20%, purely due to flexible commercials and economies of scale; no transformation involved. As well as the additional cost-reduction benefits that cloud-driven rationalization can yield, there are the lesser appreciated financial benefits of cloud adoption - like sustaining lower energy, scale-out and management costs in the longer term. All of this said, many organizations need to accept that migrating and modernizing applications and data won't automatically result in cost savings. In fact, if not done selectively and correctly, it can have the opposite effect.



A plan to drive cost out

When it comes to migration, you need to have complete clarity about which workloads move to which platforms, as well as a thorough analysis of the work required vs. expected rewards. Cloud migration itself can be a costly and complex exercise, so you need to be sure that migration value is going to outweigh the initial spend. It all starts with a solid business case and, crucially, being able to project future value with confidence.

There are various facets to this. **The first** is to gain a robust understanding of your current infrastructure outlay which will help you understand the visible and less visible costs.

The second is to conduct a migration feasibility or cloud readiness evaluation on a system-by-system basis. This will allow you to establish which applications, data-sets and infrastructure components can go to the cloud, and which can't be explored, perhaps due to regulatory, performance, or security reasons.

The third stage is to calculate and project future value. A common misconception is that cost savings will be automatic and immediate, and while cloud's on-demand consumption pricing can enable rapid savings in some areas, this will often



not be the case at scale, or at least not straight away. Therefore, being able to project savings over time – and account for any additional costs of implementation that can sometimes be less visible initially – is vital for a complete picture of ROI.

The fourth stage is making the pace of implementation move fast enough to avoid incurring additional costs and running more infrastructure platforms than are needed at the same time. Rapid deployment, onboarding, and migration in the implementation phase are important steps that we support customers with, accelerated by our trusted **cloud migration methodology** and our *SpringBoard™* platform which uses Infrastructure as Code (IaC) and automation to accelerate these steps.

The fifth stage is making sure that you have continuous visibility of your infrastructure expenditure, and that your cloud-based services are easy to right-size and adjust over time. This can be done through a mixture of managed optimization services or self-service tooling, both of which proved crucial throughout the pandemic for organizations that needed to scale down as well as up. A key example of this in action could be seen in the agile adjustments made to platforms and applications that underpin the physical channels to market that needed to close during lockdown periods.

Cost-out:

Emerald saves thousands every month through cloud migration best-practice

Planned and implemented correctly, the cost-saving effect of cloud can be achieved rapidly and sustained over the long-term, as many of our customers have discovered.

Just one example is Emerald Performance Materials; an organization which saves \$20k per month due to migrating 40 critical business applications to the cloud, with our help.

We partnered together to assess various platform and migration options before moving the workloads and databases to Microsoft Azure, all without any disruption to day-to-day operations. Emerald's resulting hybrid IT environment is flexible and futureproof. It enables increased application performance, better service resilience, and enhanced user productivity, supported by the ability to scale up and down according to demand.

Business critical in the cloud?

The right cloud and right approach are key

To fully maximize and balance the cost, agility, and performance benefits of cloud, using the right platform for the right application is crucial.

As the amount of deployment options continues to increase, so too does the complexity in terms of workload placement and subsequent integration and management, as well as the potential for costly 'platform choice' oversights which can lead to excessive cost or vendor lock-in.

According to our research, around two-thirds of organizations are now looking to embrace a multi-cloud model, featuring a combination of platforms such as AWS and Microsoft Azure – and often within a hybrid IT environment – to avoid having to compromise on any of several conflicting requirements, such as cost vs. scale, flexibility vs. compliance and agility vs. control.

This overwhelming choice and the emergent complexity of platform features, benefits, and drawbacks means that making the right choice requires a clear assessment and roadmap, which must be undertaken before any moves are made.

Furthermore, platform choice should also be re-assessed on a regular basis. Cloud platforms will continue to evolve, but so too will business requirements. This means that they will need to be reprioritized or approached differently over time, which will require the make-up of your hybrid environment and workload placements to change in tandem.



For this reason, workload mobility will be even more important in the future as organizations look to perfect their hybrid IT and multi-cloud models. We are already seeing examples of flexible cloud-to-cloud migration for rapid extra capacity to meet surge in application demand, and even cloud to on-premises repatriation to meet shifts in regulation or cloud pricing structure.

Lastly, as well as the destination mapping and movement of your workloads and data, being clear on how (when and in which groups/sequence) these will be moved into your new environment — or between environments — is now a more complex task than ever. This is due to the extent of system distribution and interdependency, which itself will change as workloads become more mobile and platforms become more interoperable.

Not only can this be a more complex task, it can be a riskier one, too, if the systems and workloads in question underpin your day-to-day services. For this reason, complete visibility of all relationships and integration paths is needed at every stage of the lifecycle, to ensure the next phase of your migration or modernization does not negatively impact an interdependent component.

Expert view:

Getting the most out of migration... and existing investments



Jason Daniels - Digital, Data & Cloud Leader at Fujitsu

For organizations who have embarked on cloud transformation but not seen these projects deliver the results they might have expected, particularly from a financial point of view, we understand they might feel like they are at a dead-end or past the point of no return.

For those who are only just starting out with implementing their cloud-first strategy, they will be trying to learn the lessons of others who have fallen victim to the many pitfalls when taking systems, particularly business-critical ones, into the cloud. I can't stress how important it is to properly calculate the expected total economic impact of cloud migration, comparing not only cost against return with greater accuracy, but also to weigh up the cost benefit vs. other factors which may conflict or come as trade-offs, such as performance, latency, data compliance, and security, to name just a few.

Fujitsu Results Chain is helping customers to do this today, so they can build a robust business case for cloud transformation with the confidence that it will deliver the results they expect.

2. Removing technical and organizational debt

When it comes to building agility into business operations, there is a clear issue that every organization should tackle as a priority – and that is technical and organizational debt. Technical debt is the aggregate of systems, applications, and code that were created or implemented as the best or quickest option at a point in time, but that now act as a constraint or are no longer fit for purpose, meaning they now need to be addressed through modernization. If unaddressed, technical debt is not only extremely costly to the business; it is also resource-intensive, and, as operational processes are built around these old systems, this establishes and embeds outdated ways of working. This is what we call 'organizational debt'. It is these two types of debt that can increasingly act as the 'ball and chain' or set of brakes that slow most organizations down today, hindering their move to the more adaptive state they now require.



Understanding technical and organizational debt

Technical debt isn't a new concept, but in most organizations, it is in dire need of being addressed. To do that, first it needs to be understood.

For many organizations, their IT infrastructure is a sprawling mass of interconnected systems which have organically built up over time. Some aspects may have been put in place as strategic initiatives, with the intention of investing in the best solution available at the time.

Yet for many of these systems, which are usually monoliths implemented some time ago, there is now typically a hesitancy to address them due to their often 'business critical' nature.

In a lot of cases, this is exacerbated by a lack of continuity in the business, in terms of the people and skills required to understand these heritage implementations, mostly built by

people and code from a previous era.

Other manifestations of technical debt have been the result of deploying 'quick fixes'. Usually this is a scenario whereby people have implemented systems quickly to solve a problem, with the intention of improving these in future, only for them to become a long-term solution and a cornerstone of how the organization operates.

The result? Tied up with software and hardware quick fixes that have lingered too long, businesses are being held hostage by the very things that were supposed to help. As a result, reducing cost and building agility is out of reach.



Are you doing enough to pay back your debt?

Our recent research highlighted the scale of the challenge organizations face when it comes to technical debt. Respondents said that for every hour spent on initiatives that promote business growth, they spend nearly three times as many servicing technical debt. However, around half of the organizations involved said despite realizing the perils of technical debt, they thought it was too complex to even attempt to tackle and so it remains unaddressed, hampering the business.

The ripple effect of technical debt can be felt further, with processes, systems, and policies rendered as ineffective as the technology that they are 'hardwired' around. Our research found that over half of organizations said they experienced operational issues caused by the short-term fixes implemented to respond to the pace of today's market change and disruption. Furthermore, around two-thirds believe that eradicating or automating these long-established processes is integral to the success of their future business.

However, findings highlighted that this organizational debt was viewed by the majority of IT and business leaders as being the 'elephant in the room' that everyone knew needed addressing but that nobody wanted to broach.

All of this said, it is clear that most organizations need to do much more to tackle the debt issue, starting with the technology fabric that underpins their organization.

Tackling the 'debt issue': A scenario view

No matter how complex and fundamental to your BAU, old systems and ways of working can be modernized so that you can move faster, with reduced cost, and extract more value from your existing legacy investments.

There are various options available to achieve this. These are explored on the next page, and as they can be highly complex and involve modernization of business-critical functions, you should work with experienced experts in transforming legacy infrastructure, applications, and processes as a unified whole.



Four modernization scenarios

to help reduce technical and organizational debt

The first is A to B conversion, which involves taking your ageing application code and converting it into modern-day code to enable it to run cheaper, faster, and with the ability to flexibly scale. We are seeing this work really well for ageing legacy mainframe environments running old code in COBOL, RPG, or Transact. Here, we use our Progression solution to convert the code into modern languages, which enables it to run on agile platforms like Microsoft .NET, Microsoft Azure, or AWS.

The second is container-based modernization for applications that are too old or complex to convert into modern code. Here, the solution involves wrapping a facade around the application in the form of a container in order to abstract it, and then to run this on a modern platform while maintaining the current monolith application code. This gives the application an adaptive surrounding through

which a limited amount of cost-efficiency, agility, and scalability can be achieved.

A third option, and increasingly the most popular amongst large enterprises, is to implement a Strangler architecture pattern. This method takes the view of breaking down the broader collection of applications that comprise the digital service into its technical component parts and modernizing or re-building most of these, one-by-one, in an agile, cloud-native state. This method accepts that there is a monolith core which many organizations are either hesitant or unable to change, so this is left in-situ in its current form, but with its data exposed to the modernized edge via APIs.

And finally, if none of the above options are feasible, the fourth and final course of action is to focus on transformation of the monolith



core's data/database (not the application itself) and place a digital barrier around the application in the form of an API gateway and a set of tailored controls. This, too, allows the monolith to continue in its current state while enabling its data to be maximized. An example of this is a legacy application that uses an old SQL database, whereby cloud-like functionality (for example, SQL as a service running virtually in the cloud) can be implemented to scale the database, giving it 'cloud-like super-powers' but with a traditional application still accessing it.

Whichever option is best for you, it is vital to have the ecosystem needed to make it work. This includes the platforms and providers, the API management gateway solutions, and the methods against which developers build. Failure to do this will result in your organization unwittingly loading cost and technical debt that will come back to haunt you in years to come - and with the pace of change in technology and business today, this might be sooner than you expect.

Expert view: Removing organizational and technical debt



Jason Daniels - Digital, Data & Cloud Leader at Fujitsu

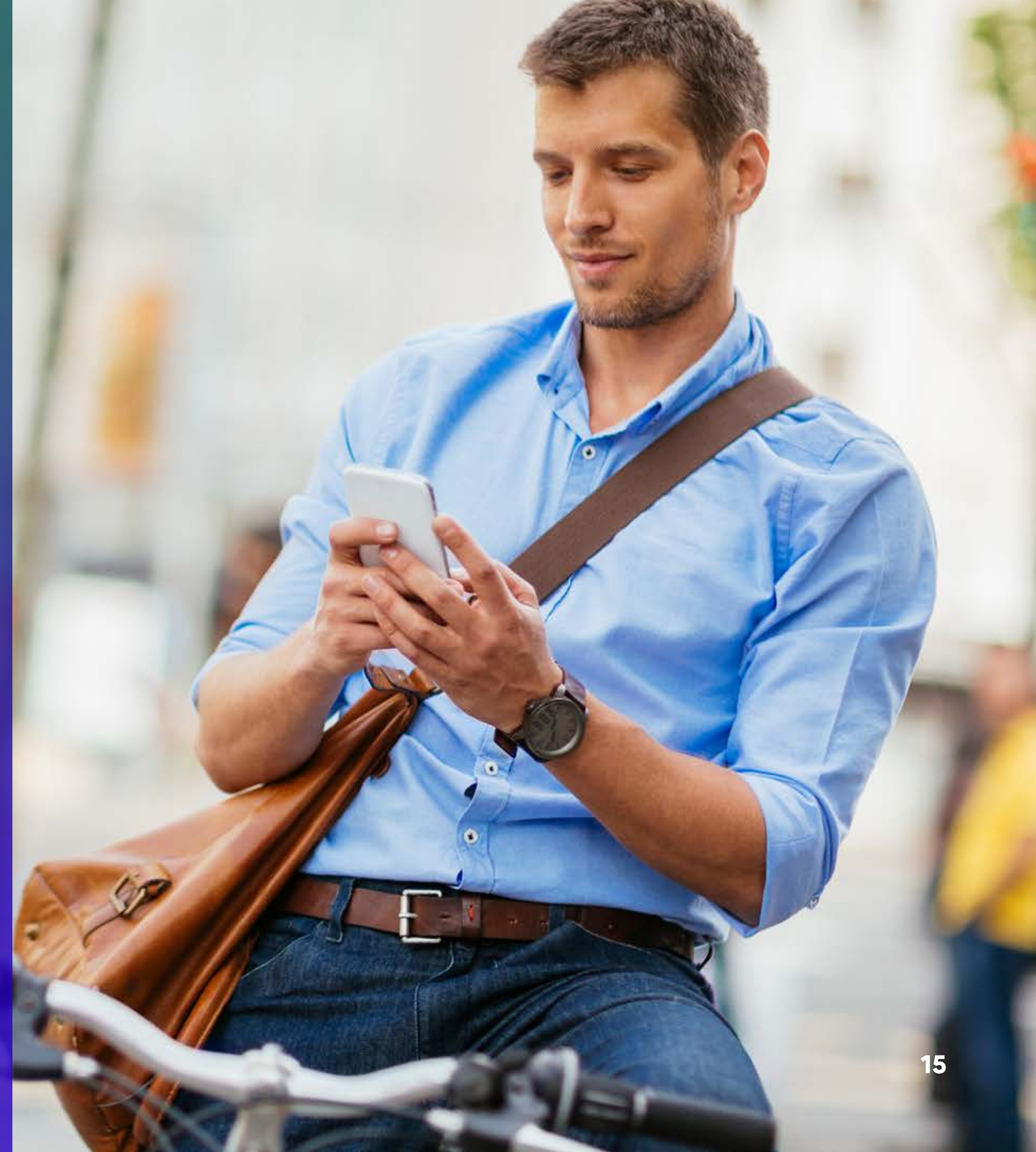
Collectively, technical and organizational debt is a major issue effecting many organizations. Although complex, it is possible to solve and bring greater value to your most legacy-bound systems. The long-term benefits of undertaking this together with a skilled partner like Fujitsu can have a huge impact. We've seen this first-hand with the customers we have supported, whether that has been through modernizing the core by converting legacy code into modern cloud-native languages, or modernizing around the core with help of the Strangler pattern, API services, and containers.

For example - with one customer, we reduced the cost associated with servicing technical debt from 75% of all engineering spend to just 25%, so the rest could be spent on innovation and growth initiatives. With another, we reduced the service risk of technical debt (lack of resilience, bottlenecks, and single points of failure) by 50%. So, there are benefits, options, and sources of help to support you. It's about time you looked at 'paying back your debt', as the problems it causes will only get worse if left unaddressed.

3. Seamless service enhancements

The key to being a cost efficient and agile organization is the ability to continuously optimize your technology consumption and everyday operations. With just some of the customers we have worked with, we have been able to continuously optimize cloud to drive total cost of ownership (TCO) reductions of up to 60%, and with others, we've accelerated time-to-market by 57% through replacing technical debt-ridden IT landscapes with an optimized digital core, running on modern platforms.

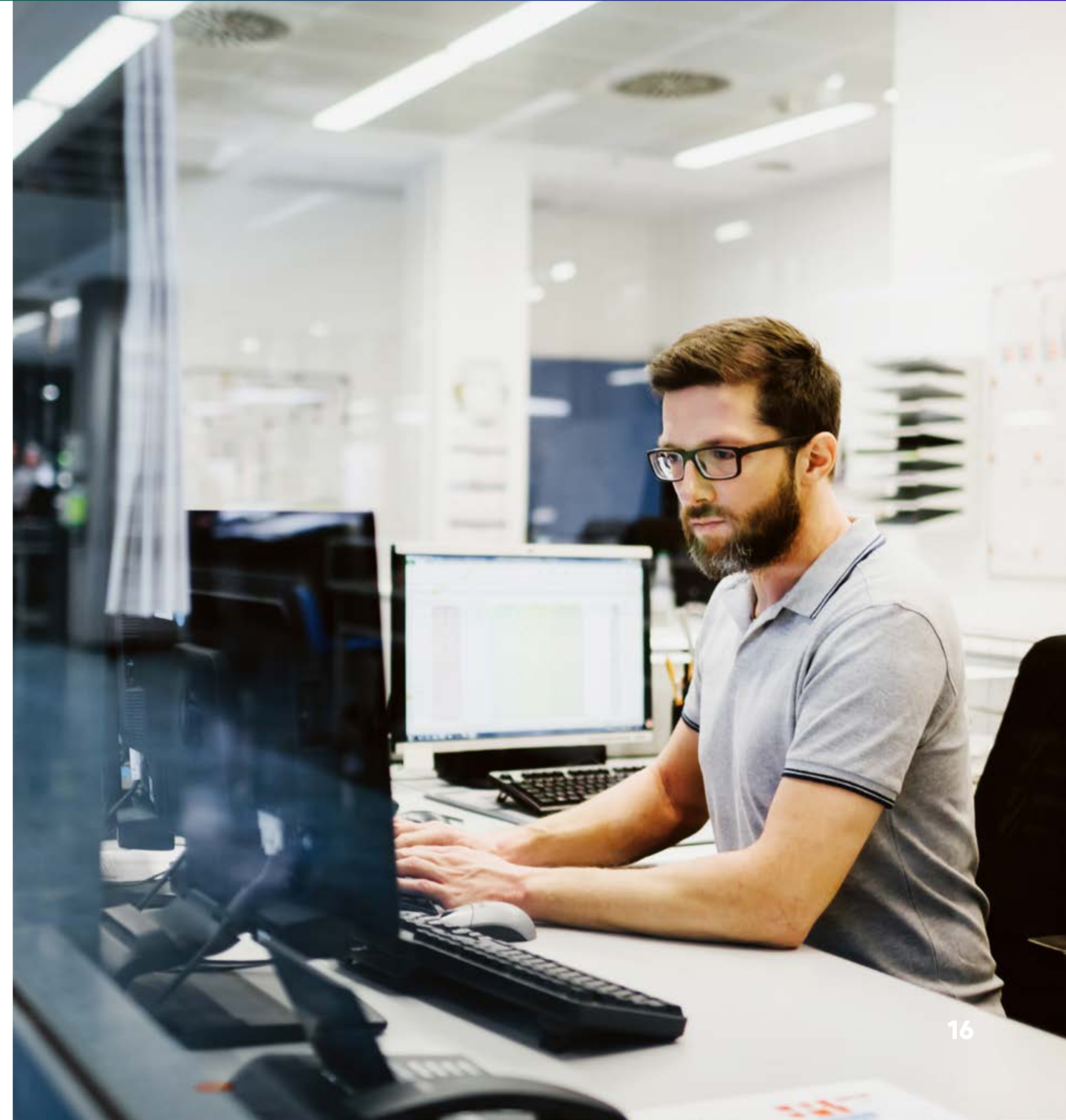
While cloud adoption is crucial to this, forward-thinking organizations should aim to leverage self-service and automation to a greater extent, to continuously optimize internal operations and in turn, enhance their external service quality. These are two key technological pillars that underpin the agile, responsive, and customer-focused business services of the future, but at this stage, they are not commonly being used to their full potential.



The power of self-service

Self-service management enables you to provide more value to the business by being responsive to its needs. Again, it was the COVID-19 crisis that demonstrated this better than anything. Organizations maximized 'single-pane of glass' management tools for complete visibility of their technology consumption, and were able to add, reduce, and shift resources to support the business in the most agile and cost-effective manner, in line with the latest external events and any associated fluctuations in customer demand.

In our recent research, two-thirds of organizations agreed that self-service portals are key to more effective service management and delivering a good user experience. The impact of self-service is apparent, with 40% of 'top-performing' organizations having already adopted self-service portals to some extent, as opposed to just one-in-eight of organizations in the lower-performing category. And the impact of self-service management stretches beyond the IT department too, with better service and easier portfolio management for line of business users enabled by on-demand management access to applications and services for the right users, in a common and easy-to-use presentation format.



Problem and incident management can also be made more efficient and direct, with the goal of quickly rectifying internal issues that may affect external service. And with continuous delivery now becoming more of a focus for many organizations, self-service can also be used to monitor and continuously improve technology deployments that support new or enhanced business services, as and when they are rolled out.

Lastly, self-service has a clear role to play in the consumption of external services by customers, with mobile platforms and web-based portals providing direct access to people and data, which enables improvements in user experience through greater convenience and responsiveness.

Crucially though, it is the integration between internal and external self-service platforms which will have an even bigger impact in future. Customers and partners being able to securely access and share information, to collaborate with transparency and respond to each others' needs in real-time, will only enhance the quality and speed of service delivery in years to come.

High quality, high impact:

How Bâloise Assurances boosts CX through integrated self-service

Self-service on the inside and outside of an organization is crucial to making the agile delivery of the future a reality, particularly when it comes to businesses that work in ecosystems or supply chains being able to respond to a multitude of customer requirements.

Bâloise Assurances worked with Fujitsu and partners to build an integrated set of self-service platforms and web portals which enable more direct customer interaction, effective partner collaboration, and optimized service management in the insurance industry.

Through the creation of two front-end platforms (one for brokers and one for customers) and the introduction of digital signature technology and robotic process automation, service quality has been enhanced - and it can now be continuously optimized, due to the introduction of new standardized processes that are flexible to customer demand.

The potential of automation

Automation played a vital role in ensuring business continuity during the last couple of years, as organizations strived to meet a surge in demand for digital customer support and rapidly fulfill business requirements by making their operations move faster.

Some of the most prevalent examples were in banking, retail, and the public sector, due to the need to deliver remote access to assistance, services, and products. Others were in the manufacturing and supply-chain industries, due to the need to fulfil a greater volume of online orders, through a wider range of channels, and at a faster pace than ever before.

The value of automation has really been recognized, not only in terms of its direct benefits to consumers but also its ability to free up resource, allowing people to spend their time on high-value (rather than manual, repetitive) tasks. We have reached the point where 60% of strategy leaders are now aiming to automate more than 10% of their processes

within the next two years, which would be more than double the current level.

Enhancing service quality is already reliant on automation, but we believe this will become even more fundamental in years to come. However, the question remains as to whether achieving hyper-automation (automating everything that can be automated), or even aiming for it, is realistic? While there are many areas where automation can be implemented, for a variety of technical, operational, and cultural reasons, it should be about small steps for most organizations.

With this in mind, there are three key areas where we think organizations can make quick and fundamental gains to enhance service quality.

The first is automation in failover to ensure service resilience and continuity during a disruptive event, with the most common scenario being a cloud or data center outage.



High-profile platform outages have caused service chaos and reputational damage to some of the biggest and most respected organizations in the recent past. One increasingly common remedy is to use an AIOps solution, which can enable the automatic and temporary 'switching' of services from one cloud to another, to ensure the outage does not result in service downtime.

The second scenario is automation in scalability for an agile response to changing needs. When services need extra capacity to meet sudden surges in demand, cloud automation can be leveraged to implement auto-scaling, which prevents infrastructure from being overrun and critical services from being unavailable. In turn, this helps organizations to avoid revenue-loss or reputational damage.

The third use case, which is experiencing a rapid rise, is embedding automation in 'application update' processes. This helps to accelerate time-to-market, while ensuring that increasing the pace of development does not come at the expense of precision. Automation in this area has a significant impact on quality, as it embeds and streamlines (into development pipelines) critical steps such as code-checking, quality checking, and end-user testing. As a result, when the application goes to market and is consumed by customers, it is going to work every time, functionally, and in line with customer expectations. It also ensures that any applications in development or production that contain manual errors are corrected and re-released faster to minimize negative impact.

Closing thoughts: Will hyper-automation drive the future?



Jason Daniels - Digital, Data & Cloud Leader at Fujitsu

Automation is fast becoming much more of a standard component of cost-efficient and effective IT services. In this paper, we have explored just some of the immediate use cases of 'baking automation in' to digital delivery, in support of driving business resilience, responsiveness and relevance. Looking further in to the future though, will we see the lesser deployed concept of hyper-automation gaining more traction and scale?

This idea of automating everything that can be automated may be a long way off for many organizations. However, the premise of moving past tactical efficiency gains, which are achieved by automating manual processes in only a bit-part fashion, is gathering momentum. Strategic, customer-focused implementations that integrate AI and machine learning alongside the more established RPA platforms are the growing trend. We are witnessing and co-creating more advanced and predictive solutions that extend far beyond following instructions; they learn and self-improve over time to help transform the way organizations operate. Introducing such change is often a complex and sensitive issue that requires both technology and business transformation expertise. This is where we see a lot of focus for us in future.

Five key actions for optimizing cost and agility now:

The initiatives required to optimize cost and agility are complex and you may be looking for a place to start or some key areas to focus on.

Fujitsu provides the technology, expertise, and implementation to help you continuously optimize cost and agility. We can support you at any stage of your journey, from initial cloud adoption to continuous improvement.

1

Take stock today:

Your technology estate will be more diverse after the recent digital acceleration, so we advise a thorough baseline assessment to identify, track and address areas of current and future inefficiency.

2

Complete cloud thinking:

Evaluate existing cloud investments beyond the scope of running costs. Continuously assess whether these are driving enough TCO impact, releasing enough resource and leveraging the latest vendor releases to optimize more effectively.

3

Monitor more, flex faster:

The initial cloud-enabled 'Capex to Opex shift' is only part of the equation. Explore monitoring, self-service and automation to regularly optimize workload placement, platform consumption, and process-flow.

4

Right cloud, right size:

Think short and long-term when placing workloads, with right-sizing a priority. Lean pay-per-use today and efficient economies of scale for future change should be guiding principles.

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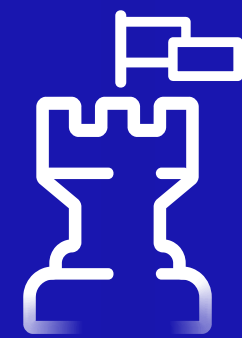
Co-create for success:

From removing technical debt to integrating and managing modern IT, the transitions needed for optimizing cost and agility are challenging. Work with change management experts to safely implement continuous improvement across your technologies and processes.

The bigger picture:

Creating your adaptive organization

Optimizing cost and agility is just one crucial component of creating your adaptive organization of the future. There are four other important areas for continuous transformation which allow you to build resilience, responsiveness, and relevance for the future:



Protected foundations

For a safe and secure digitally-enabled business



Optimize cost and agility

For efficiency today and flexibility for the future



Enhance effectiveness

For intelligent decisions and rapid action



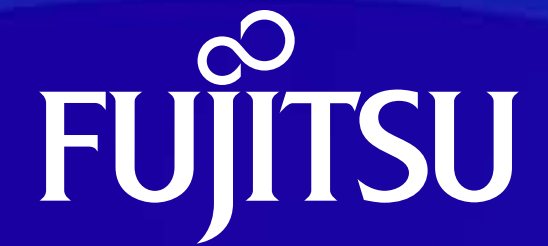
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For business, consumers, and societal good



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