




# AGILITY AND RESILIENCE: THE PERFECT BALANCE?

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— A PURE STORAGE PERSPECTIVE PAPER | 2020 —



Without doubt, 2020 and the impacts of the Coronavirus outbreak have placed unprecedented pressure on national and subnational public sector organisations right across Europe. Whether developing economic and disease prevention responses at a policy level, or supporting affected citizens on the frontline, the virus has made its presence well and truly felt throughout health, social care, education, policing, local government, tax and many other functions.





## Overwhelmed by demand. Underwhelmed by data infrastructure.

Not only has demand for public services and resources risen sharply, the virus has delivered major blows of disruption internally, both operationally and fiscally, in the following ways. Supply chains have bowed, processes have cracked, and workforces have been halted. In France, for example, a six-week lockdown saw millions of public sector employees unable to either go to work or perform their jobs from home.<sup>1</sup>

Since the virus first hit pandemic levels, technology leaders have been heavily leant on to help solve many of these impacts. However, the Coronavirus has struck at a time when governments – both national and local – are also under pressure to accelerate digital transformation. Why? It's largely being pushed by digital citizens who have incredibly high expectations about the speed, quality and seamlessness of the 'customer experience' they want. For public sector leaders, this digital transformation is largely about efficiencies, savings and the acceleration of citizen-centric services to deliver high-quality outcomes for citizens.

**IT leader respondents, 511 of them in total, were drawn from public sector organisations across the UK, Germany, France, Spain, Italy, the Netherlands and Switzerland.**

Both these factors – transformation for the delivery of more digital services and the disruption of the Coronavirus – have become powerful stressors on public sector organisations. In future, these stressors could be replaced by others that may be political, economic, technological or even environmental. But what's important is that whatever shape or form those factors come in, technology, and specifically data infrastructures, are able to deliver the agility and resilience that help create a stress-tested public sector. Why data? Because it is the fuel of all knowledge, decision-making and operations – and no public sector organisation can work without it. Therefore, data infrastructures must be capable of withstanding whatever the latest disruption might be, and from there, supporting ongoing improvements in citizen centricity and the quality of outcomes, long after major disruptions have dissipated.

To better understand the state of data infrastructures, Pure Storage has partnered with Insight Avenue to undertake an annual pan-European research study of IT leaders within the public sector. The survey looks at leaders' perceptions concerning how well data and specifically the infrastructures that enable seamless data provision can support organisational objectives. In this point of view paper, we'll explore some of the key themes of the research through a lens of the overarching climate of the moment, and provide our opinion on how to address them. You'll find more technical details on the latter component in our companion 'how-to' guide called 'Taking the Next Steps – How to Build a Resilient and Agile Stress-tested Public Sector Organisation'. First, it's important to note that our IT leader respondents, 511 of them in total, were drawn from public sector organisations across the UK, Germany, France, Spain, Italy, the Netherlands and Switzerland. They were surveyed during the summer of 2020.

1. France set to close GDP gap on Germany with public sector rebound, The Financial Times <https://www.ft.com/content/a5614ed7-c4a8-445a-84b9-fe7c058370e7>

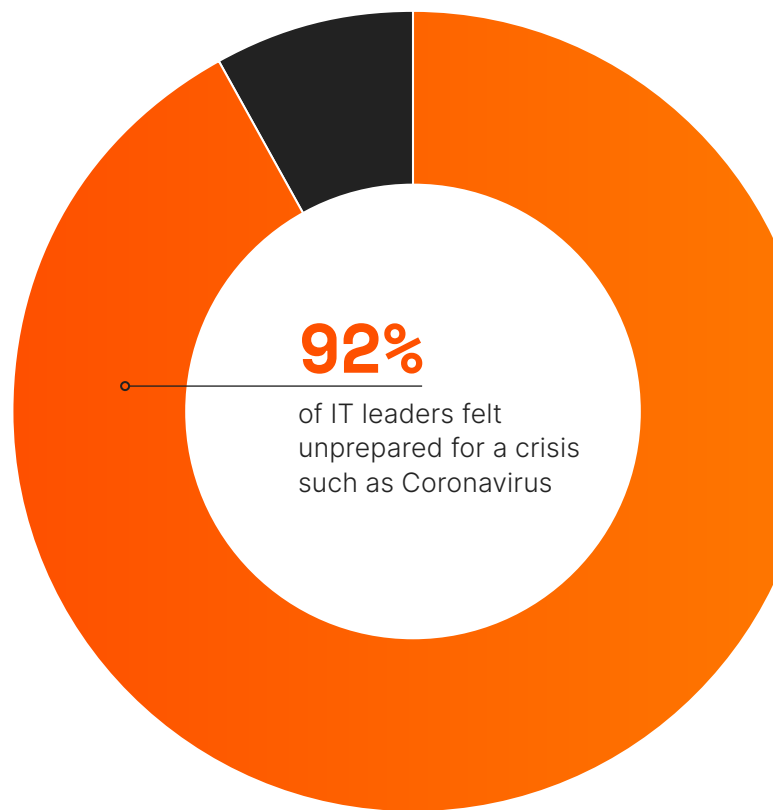
# The big European IT stress test

It's probably unsurprising to know that the majority of IT leaders felt unprepared for a crisis such as Coronavirus (**92%**), and that this phase in their careers has been personally stressful for them in their technology role (**72%**). Perhaps this is because of the breadth of the mandate that leaders have to deal with in their 'business as usual' (BAU) lives? Across Europe the transformation agenda prioritises the following over the next 12 months:

- › Improving citizen outcomes (**89%**)
- › Increasing the uptake of online government services (**90%**)
- › Improving the efficiency and speed of delivery (**90%**)
- › Empowering employees with digital skills and technologies (**90%**)
- › Managing security threats (**93%**)

That's a great deal to contend with. Yet, interestingly, there is also a feeling that organisations need to be more adaptable, with **92%** citing the need to improve agility as high on their list of priorities. This means that data infrastructures must support two agendas: **BAU** and **innovation**.

**IT leaders must build data infrastructures that deliver a seemingly dual capability: resilience and agility.**



At Pure Storage, **we believe that to become a fully stress-tested public sector organisation, IT leaders must build data infrastructures that deliver a seemingly dual capability: resilience and agility.**

To look at it another way, they must be able to both withstand disruption while also delivering adaptability and continuous innovation to move forward from periods of huge change and to accelerate digital transformation in smart, new ways.

**Is that just what we think, or is this perspective backed up by the research?**

Well, let's look at some of the overarching stats and see what they tell us in terms of the challenges that different countries have faced during this crisis.



## What have been the biggest challenges for central government IT during the Coronavirus outbreak?

Country	Challenge 1	Challenge 2	Challenge 3	Challenge 4
<b>UK</b>	Demands on remote access infrastructure – <b>90%</b>	IT performance issues – <b>89%</b>	Disruption to on-premise workloads – <b>84%</b>	
<b>Germany</b>	Demands on remote access infrastructure – <b>91%</b>	Delivery of new systems/apps to handle response to the pandemic and lockdown – <b>90%</b>	Performance issues or degraded IT experience – <b>83%</b>	
<b>France</b>	Delivery of new systems/apps to handle response to the pandemic and lockdown – <b>73%</b>	Demands on remote access infrastructure – <b>72%</b>	Reduced IT staff/ resourcing – <b>72%</b>	
<b>Spain</b>	Demands on remote access infrastructure – <b>90%</b>	Delivery of new systems/apps to handle response to the pandemic and lockdown – <b>90%</b>	Disruption to on-premise workloads – <b>90%</b>	Maintaining security and data access controls – <b>90%</b>
<b>Italy</b>	Demands on remote access infrastructure – <b>86%</b>	Disruption to on-premise workloads – <b>84%</b>	Delivery of new systems/apps to handle response to the pandemic and lockdown – <b>84%</b>	
<b>Netherlands</b>	Demands on remote access infrastructure – <b>83%</b>	Maintaining service performance & availability – <b>83%</b>	Disruption to on-premise workloads – <b>79%</b>	
<b>Spain</b>	Demands on remote access infrastructure – <b>90%</b>	Delivery of new systems/apps to handle response to the pandemic and lockdown – <b>90%</b>	Disruption to on-premise workloads – <b>90%</b>	Maintaining security and data access controls – <b>90%</b>
<b>Switzerland</b>	Delivery of new systems/apps to handle response to the pandemic and lockdown – <b>73%</b>	IT performance issues – <b>73%</b>	Disruption to on-premise workloads – <b>71%</b>	Maintaining security and data access controls – <b>71%</b>

Most IT leaders across countries faced the same two challenges: delivering new capabilities to address the crisis and empowering remote working. This ability to move with the times is utterly critical to the lives of citizens. We can see this through just one example of stats collected by the Financial Times.

The UK government estimated how much time teachers were spending teaching during the height of lockdown than they were before – and there was a **35%** reduction in educational output in the second quarter. Whereas in Germany, teachers were able to deliver lessons remotely, meaning their output was largely unchanged.<sup>2</sup>

2. France set to close GDP gap on Germany with public sector rebound, The Financial Times <https://www.ft.com/content/a5614ed7-c4a8-445a-84b9-fe7c058370e7>

However, maintaining the status quo seems equally important as being agile and innovative. This is important because it's where resilience comes into play. All leaders in all countries experienced a mix of challenges around IT performance degradation, workload disruption and maintaining security/access controls. The latter challenge is especially important in light of a huge surge in cybercrime, particularly ransomware, given the volumes of structured and unstructured personal data that is held by public sector organisations.

The question is this: **If becoming a fully stress-tested public sector organisation means blending both the ability to be highly resilient with the ability to be rapidly agile – and therefore ready for anything – how can IT leaders bring those two capabilities together, seamlessly and simply?**

In our opinion, it cannot adequately be achieved using legacy data infrastructures that create data silos, data latency, generate huge cost in disaster recovery and business continuity, and don't enable the building of modern data hubs that serve a wide range of apps, processes, remote users and DevOps activities while keeping data secure.

## The legacy problem

In fact, legacy data infrastructures will not future-proof all the fundamental capabilities that will deliver a stress-tested organisation because they are designed to degrade performance over time and require costly and time-consuming upgrades every few years. Can it be achieved by migrating to the public cloud? Public cloud does offer almost limitless scalability, yet many of our customers complain that capacity isn't always there exactly when they need it and the costs of repatriation are exorbitant. Also, with personal data, public sector organisations must duly consider both the security and compliance issues associated with making wholesale moves to public cloud.

What public sector organisations really need are data infrastructures that are designed to secure ever-improving performance and to drive innovation. IT leaders are acutely aware of the limitations of their existing technology, with **90%** of respondents saying that data infrastructure is the area most in need of change – and that time is now.

### Why is greater resilience required?

- › **83%** say the impact of COVID-19 has accelerated the need to overhaul data infrastructure.
- › **83%** say improving citizen experience is important and **54%** say that involves reliable remote access.
- › **90%** say they need to rethink resilience/continuity in future.
- › **28%** have seen an increase in malicious cyber threats, with **36%** saying their confidence in managing them is due to legacy infrastructure and OS.

### What's the hold up with agility?

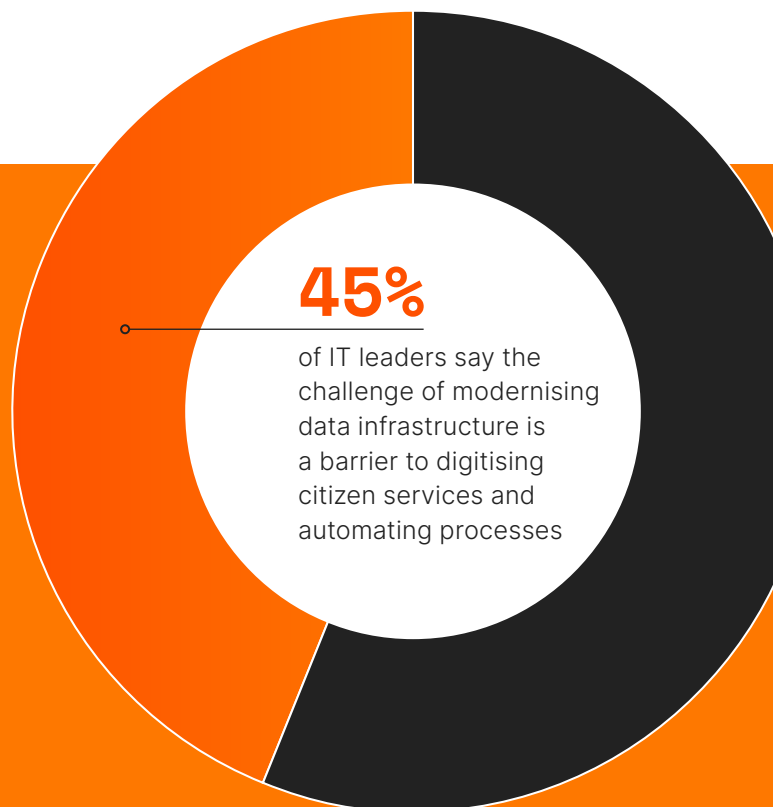
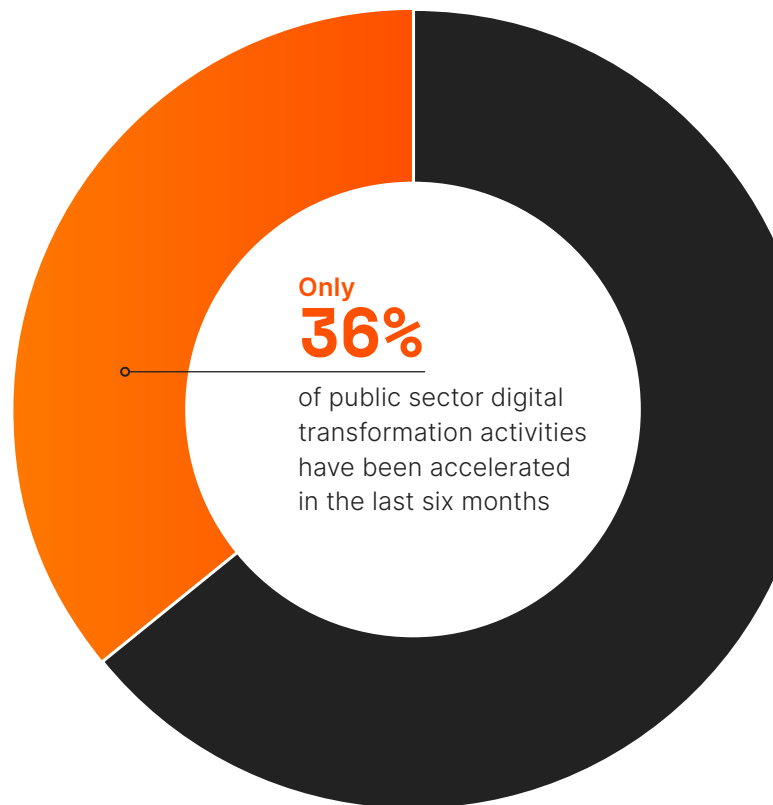
- › **67%** say legacy infrastructure is holding up digital transformation progress.
- › **83%** say legacy infrastructure is reducing operational agility.
- › **90%** say data infrastructure improvement is required to improve service delivery.
- › **58%** cite budget constraints as a key reason why tech projects are not delivering maximum value.

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# Taking zero action is not an option

Why? Because while many other industrial sectors, particularly those where demand and customer behaviour has radically shifted, have rapidly accelerated digital transformation, only **36%** of public sector digital transformation activities have been accelerated in the last six months. Clearly a large proportion of organisations feel they still have significant catching up to do.

The challenge of modernising data infrastructure seems to weigh heavily with IT leaders. **45%** say they know it is a barrier to digitising citizen services and automating processes. Now imagine the positive impact this would have had on the French scenario we outlined at the beginning. How many civil servants would have been able to remain productive? How much better would the customer experience have been for citizens during lockdown? **90%** of leaders say that data infrastructure is the number one area for improvement in service delivery. And they also know that data could be used in value generating ways, to improve citizen outcomes (**54%**), to deliver operational savings and get more value from limited budgets (**46%**), then finally, to inform real-time decision-making – again something that is essential, especially when dealing with fast-moving stressors and disruptions such as the Coronavirus.



**How much better would the customer experience have been for citizens during lockdown?**  
**90% of leaders say that data infrastructure is the number one area for improvement in service delivery.**

# Building a resilient data infrastructure to withstand future demand



For public sector organisations to consider themselves truly stress-tested by building resilience into their people, process, culture and technology, it is imperative that 4 key pillars of consideration are addressed. Not only will taking these steps allow you to embrace and accelerate your digital transformation journey, doing so will help IT teams position themselves to successfully navigate any future crises.

## 1. Double down on flexibility and scalability

The situation in which the public sector currently finds itself this year demonstrates the need for a robust, dynamic data infrastructure able to effectively cope with ever-changing demand, including unforeseen spikes in demand. This means implementing an architecture that can scale up or down as required. We expect the widespread move towards working

from home to continue, so temporary work-arounds from data availability and security standpoints will need to be properly resolved. Similarly, should governments mandate a 'return to office' policy when the time is right, or roll out a new tranche of citizen services, data infrastructures will once again need to be flexible and scalable enough to adapt in days.

## 2. Make security and compliance your first thought

Being able to continue concurrently with business as usual and innovation requires data to be readily available. Yet given the sensitive and personal nature of much public sector data, security and complying with stringent regulations must come first. Especially when you consider that **59%** of IT leaders claimed investment in infrastructure security is not keeping up with security threats – and that **93%** say security is a priority in their digital transformation plans over the next 6 months. However, enhanced availability does not mean forfeiting security standards. While it's indisputable that citizens today demand civil servants have instant access to their information, it's crucial to all parties that access is relevant and appropriately limited in order to remain secure.

Public sector organisations currently face a number of security threats coming from different directions.

As well as being negatively impacted by the rise in remote working and the network access point vulnerabilities this presents, confidence is being eroded by legacy infrastructure, outdated operating systems and a rapidly evolving cyber threat landscape.

Worryingly, in the last six months **40%** of government IT leaders have seen a rise in malicious data security threats, while **24%** reported an increase in non-malicious data security threats.

It is crucial that the sector invests in modernising data infrastructure, otherwise, IT leaders risk a negative feedback loop in which existing structural problems become worsened by a difficulty in accessing data and vice versa, creating a spiral of preventable inefficiencies.



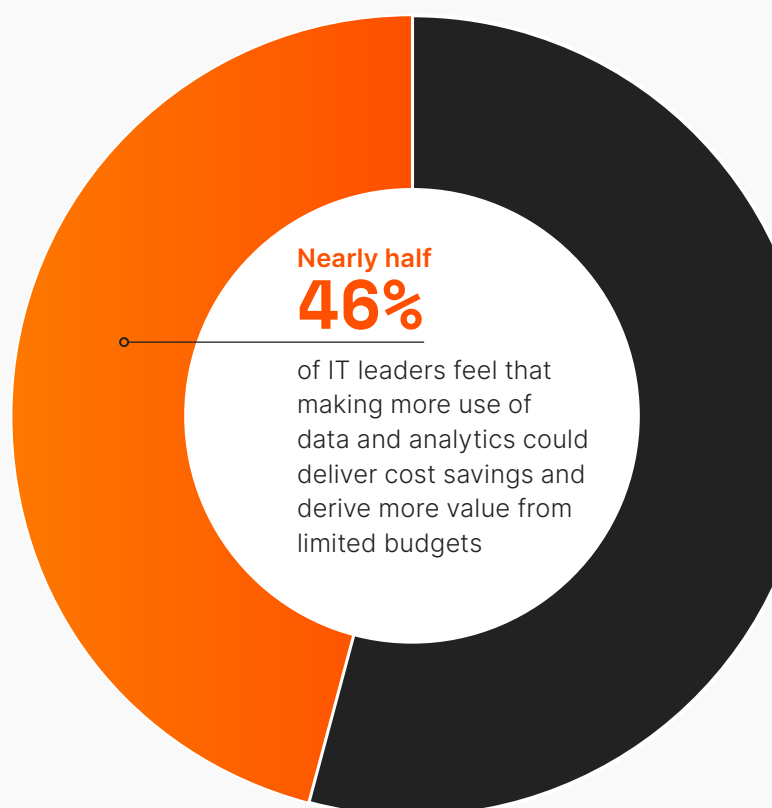
### 3. Eradicate data siloes and embrace new, connected data

It is obvious that legacy infrastructure technologies and their design are now outmoded due to the sheer volume of data available to organisations as well as the velocity at which it can be produced through IoT devices and social media feeds, for example. However, given the highly personal and increasingly sensitive nature of the data collected, it is also vital that organisations deploy modern technology solutions to manage the information they hold safely and responsibly.

In fact, as well as markedly improving citizen satisfaction, a move to modern data architecture would provide benefits across the board. Nearly half (**46%**) of IT leaders feel that making more use of data and analytics could deliver cost savings and derive more value from limited budgets, as well as better inform real-time decision making (**45%**).

Modern data infrastructures can work wonders in eradicating siloes and building connections, eliminating the traditional model of data storage where data is held only by the department that generated it for each specific citizen. As a result, departments that could be working together and sharing insights to deliver a more seamless user experience have been stuck in a siloed environment, not only limiting potential benefits to citizens, but often resulting in explicit frustration due to slow-moving processes and stunted communication.

Multiple instances of cross-over data, which is often stored for years, also increases storage costs and, most importantly, hinders an organisation's ability to create a single view of the citizen and understand their needs at a deeper level. This is a particularly key consideration given that **79%** of IT leaders say improving the citizen experience is important in building trust in government.



### 4. Drive up data performance

As the transformation to digital services continues to accelerate, and as more governments invest in IoT technologies right across the sphere of service provision from healthcare to transport and environment, data that is slow to be collected or unavailable when needed will lead to poor user experiences. Ultimately this will result in digital services not working, efficiencies not being realised and the quality of outcomes being undermined.

In today's 'always on' world of technology, it is imperative that downtimes are reduced and that sites, data and the people they are associated with remain constantly connected and available.

Consistent, efficient and intelligent data architecture performance must represent the foundation upon which these 4 pillars of a resilient, stress-tested public sector organisation rest. Legacy infrastructures by their nature will not deliver. Only modern data infrastructures designed to consistently push the boundaries of data performance can truly drive the next era of public sector tech innovation and data performance.

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## In conclusion

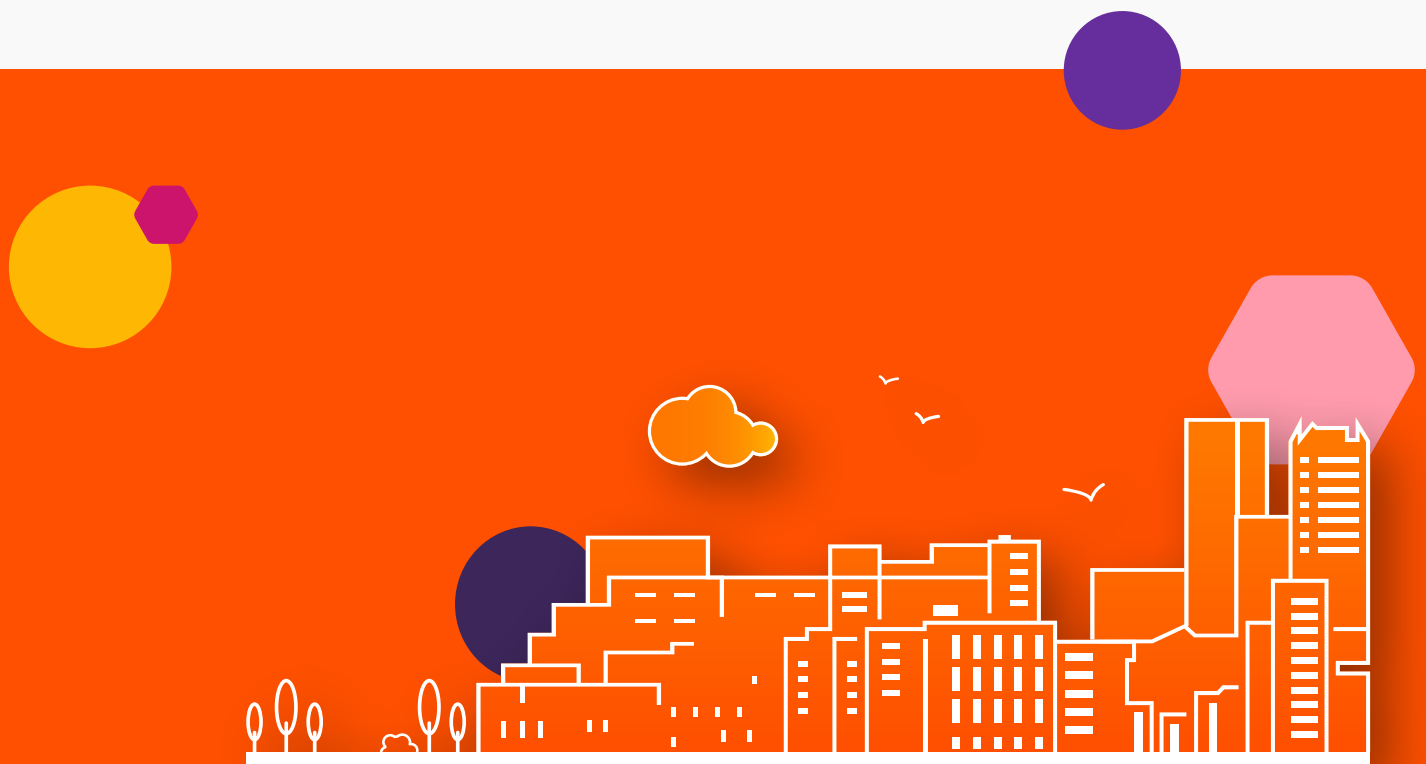
Aside from times of war, never have European governments been under the kind of intense pressure as they are currently. Demand for existing services and the need to roll out new ones to meet the needs of the present day are phenomenal – and IT leaders are feeling the heat. Of course, the reasons for this are many – budgets have been reduced in recent years, staff and skills shortages are difficult to resolve and the complexity of technology stacks seems to increase year on year. However, one thing is abundantly clear: data infrastructure needs a major overhaul.

Our research shows that legacy or inadequate systems that form the foundation of any organisation's tech environment are holding back the stated objective to drive digital transformation and use data to enhance the customer experience and drive operational efficiencies and decision-making. Yet when external stressors hit, and demands for data-driven services and processes escalate in hours, can that infrastructure cope? No. We've seen that IT leaders are struggling with disruption to workloads, and with performance issues relating to security and access, and to data application availability. And that's just for business as usual activities. Layer on the need to react quickly to new stressors – whatever they may be, whenever they may again arise – and it's very easy to see why your peers are so concerned.

Modernisation is far easier, far faster and far more affordable than you think. We have been working with organisations across public and commercial sectors, around the world, for many years to help them build stress-tested IT infrastructures ladder up to help create organisations that are ready for anything. Think banking, insurance, healthcare and retail. In our companion paper, 'Taking the Next Steps – How to Build a Resilient and Agile Stress-tested Public Sector Organisation', we show you exactly how Pure Storage can help you to create the modern data experience your organisation now surely needs.

Take this opportunity to lead the way at a time of otherwise near-universal uncertainty by embracing a new, citizen-centric model of data storage. We're ready to help.

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If you would like to learn more about how our vision, our technology and our experience is so perfectly aligned to help you further your digital transformation goals, please contact your Pure Storage team on

**0203 870 2633** or **email** us.

Alternatively download

**'Building a Stress-Tested Public Sector  
– EMEA Report 2020'**