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ENGINEERING RESILIENT SYSTEMS IN CHANGING CONDITIONS

Insights Report

This report brings together observations and perspectives shared by participants at a private roundtable hosted by Accessa in London. It captures the range of perspectives shared during the exclusive session.



Resilience has become one of the defining challenges of our era, not merely as a technical problem to be solved, but as an organisational, cultural, and strategic imperative.

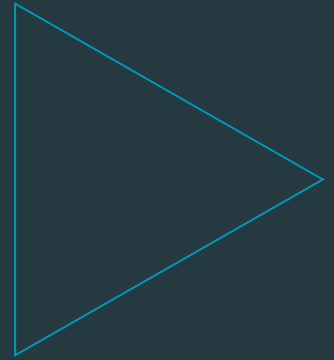
In **March 2026, Accessa organised a private roundtable in London**, bringing together senior leaders from Financial Services, Retail, digital transformation, and related industries. The session explored **what it means to build and sustain resilient systems** when the conditions in which those systems operate are themselves in constant flux.

In our experience across multiple European markets, these challenges are most visible in environments where systems have evolved and where reliability is critical. Supporting these environments typically involves a combination of system modernisation, integration, and long-term operational responsibility rather than isolated transformation efforts.

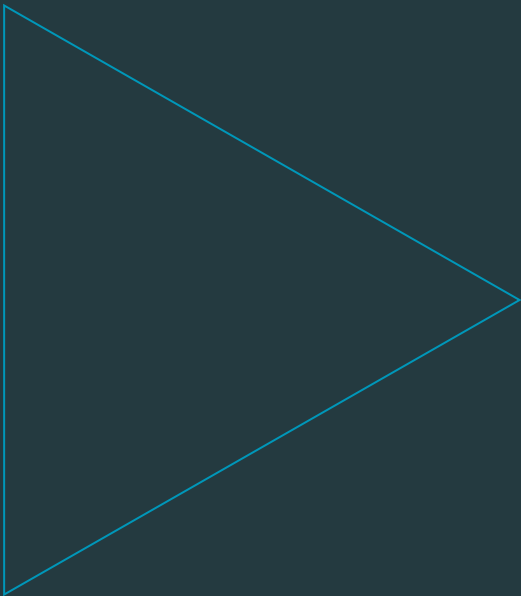
The conversation ranged widely, across engineering practice, organisational design, regulation, the human dimension of transformation, and the emerging pressures of artificial intelligence and agentic automation. What emerged was not a single, tidy answer, but a rich set of tensions: between speed and stability, innovation and control, adaptability and consistency, short-term performance and long-term durability.

This report highlights the **principal themes and perspectives shared during the session**. It does not seek to resolve the tensions discussed; in many cases, those tensions are precisely the point. Managing them intelligently, rather than eliminating them, is the work of resilient organisations.

We hope these insights prove useful to you, whether you were present on the day or are joining the conversation now.



INSIGHTS DEEP DIVE



Defining resilience

What does resilience actually mean in practice? Before examining how to build it, the group explored what it is and what it is not.



Resilience is not a fixed end goal. It is a by-product of how an organisation operates every day.

In practice, this is rarely addressed directly. In many of the environments we work in, **resilience emerges gradually** from how systems are structured, maintained, and adapted over extended periods of time. This often requires working alongside organisations over time, rather than addressing resilience through one-off initiatives.

Several definitions surfaced during the session, each illuminating a different facet of the concept. At its most fundamental, resilience was described as the **capacity to keep going, to continue operating and delivering value despite disruption, uncertainty, and change**. Survival comes first; everything else depends on it.

Beyond just survival, participants distinguished between two further qualities.



Serviceability

The ability to remain reliable and perform under unexpected conditions.



Adaptability

The capacity to adjust to an evolving environment rather than resisting it.

Together, these form a more complete picture of what resilience demands.

A recurring theme was the **importance of mindset**. Resilience is not solely an engineering property; it requires an operating orientation that combines agility, clear-headedness, and the ability to respond quickly. Technology is an enabler in this regard, allowing organisations to react, resolve issues, and refine their offerings, but it is not the whole story.

One participant introduced the **concept of exaptation**: the reuse of existing capabilities for new purposes as circumstances change. This framed resilience not as a defensive posture, but as something closer to creative resourcefulness: the ability to find new uses for what already exists when the landscape shifts.

The group was also willing to challenge its own assumptions. One observation noted that some organisations have maintained dominance without significant adaptation, suggesting that the relationship between resilience and change is more nuanced than straightforward narratives allow.

The scope of resilience

Resilience cannot be confined to IT infrastructure. The discussion underscored just how wide its true boundaries extend.

One of the clearest points of consensus was that resilience must be considered holistically, across people, processes, technology, infrastructure, and external dependencies. The conversation moved fluidly from software architecture to supply chains, from cloud services to financial instruments, and from embedded AI to human workflows.

Participants proposed **three contemporary lenses through which to assess resilience.** Each of these represents both a challenge and a potential lever.

01

weight of legacy systems

02

pressure of constrained budgets and cost optimisation

03

disruptive potential of artificial intelligence

The conversation also addressed **external pressures that frequently undermine resilience.** Shareholder expectations, a structural bias towards adding features rather than improving foundations, and the persistent tension between short-term delivery and long-term system health were all cited as factors that erode resilience over time, often invisibly.

One contribution drew a pointed distinction: **organisations can innovate aggressively without caring about the human and societal consequences of that innovation,** but this should not be confused with genuine resilience. Sustainable systems must account for their broader impact.



Engineering for failure

The most consistent engineering principle to emerge was this: **do not design for success. Design for failure.**

Resilient technical systems are not those that assume stable conditions; they are those built with the expectation that things will go wrong and structured accordingly. This orientation, **treating failure as a certainty rather than an exception**, was presented as a foundational engineering discipline.

Simplicity was repeatedly cited as a core principle. Simpler systems are easier to understand, maintain, and recover from when something breaks. The group echoed the idea that simplicity is not the absence of sophistication but its highest expression. A system with fewer moving parts has less that can fail, and more focus can be directed at making it work well.

In practice, complexity is often introduced incrementally, through integration, regulatory requirements, and successive change initiatives, rather than by design, making deliberate simplification an ongoing discipline.

Addressing this typically involves reworking critical system components while maintaining continuity of operations.



Simple systems are often more resilient precisely because there is more focus on making them go right, and less that can go wrong.

Practical techniques discussed included **containerisation and compartmentalisation** as means of containing failure and preventing it from propagating across a system. Netflix was cited as an illustration of resilience built through aggressive experimentation, including chaos engineering, which deliberately introduces failures in production environments to surface weaknesses before they cause genuine harm.

Technical resilience encompasses backup and failover provision, acceptable response times under load, security, maintainability, and scalability, the disciplines associated with site reliability engineering. Critically, these must be built in from the outset rather than retrofitted.

The group also noted the **risks of optimisation** taken too far. Just-in-time models reduce overhead and inventory cost but introduce fragility: when supply or distribution is disrupted, systems with no buffer capacity are the first to break. Resilience requires a degree of slack, redundancy that may appear wasteful until it is suddenly essential.

Organisational design and operating models

How an organisation is structured matters as much as how its systems are engineered. Rigidity, it was argued, is itself a form of fragility.

This is especially evident in long-running delivery environments, where **operating models must evolve alongside systems** to sustain both change and continuity over time.

Maintaining this balance often requires consistent collaboration between



business



technology



delivery teams

The central argument here was that organisations designed for stability in a slower-moving world are ill-equipped for the demands of the present. The pace and nature of change have fundamentally shifted, so organisations need to adjust how they structure themselves and allocate decision-making authority.

Resilient organisations were characterised as loosely coupled and self-organising, less like fixed hierarchies and more like dynamic systems capable of absorbing shocks without breaking. One participant used the image of a tree in the wind: resilience lies in the capacity to sway and absorb force, not in rigid resistance to it.



Organisations must retain enough energy, capacity, and slack to absorb impact and still find room to innovate.

A related point concerned **transparency and legibility**. Resilience planning, it was argued, must show its reasoning clearly, in the same way that a mathematical proof requires visible working. Processes and methods that cannot be explained clearly cannot be executed reliably, and what cannot be executed reliably cannot be resilient.

The group also noted a **structural shift in commercial models**: contracts are moving from time-and-materials arrangements towards outcome-based frameworks. This was interpreted as a broader signal that clients increasingly expect the adaptability and responsiveness associated with more resilient operating models.

Risk, speed, and measurement

How do you know if you are resilient? And what are the **real costs of resilience, or of its absence?**

Measurement surfaced as a recurring challenge. One contributor reframed risk in a way that sharpened the discussion: risk is not only the probability of failure, but also the failure to deliver value quickly enough. Speed, in other words, is not simply a commercially desirable attribute; it is a resilience metric.

Meantime to restore (MTTR), drawn from the DORA framework, was cited as a practical indicator of how effectively an organisation recovers from disruption. Alongside this, participants described a rough working relationship: resilience is inversely proportional to risk, and risk is inversely proportional to performance. Where risk is deliberately accepted, there should be a clear and quantifiable return for the exposure being carried.



In many markets, it is not the large that outlasts the small, it is the fast that outlasts the slow.

The **2008 financial crisis was referenced as a real-world stress test**: institutions with stronger resilience capabilities survived systemic pressure markedly better than those without. The lesson drawn was that resilience is not merely a good-practice aspiration but a survival variable under conditions of genuine stress.

In sectors such as Financial Services and Aviation, regulation plays a reinforcing role; compliance frameworks create a floor of resilience that organisations must meet. But participants noted that **regulatory compliance is a baseline, not a destination**. It establishes minimum requirements; it does not build the adaptive capacity that genuine resilience demands.



Regulation, data governance, and sovereignty

The regulatory environment is itself changing and doing so in ways that **create new resilience pressures** well beyond the sectors directly in scope.

Discussion in this area was prompted in part by the **implementation of AMLD6**, which introduces materially more stringent requirements around data management, transparency, and governance.

Whilst the directive targets the Financial sector directly, its indirect effects are already being felt across similar industries: energy, real estate, technology, and professional services, among them, through elevated compliance and governance expectations.

Practical uncertainty remains. How user consent will be obtained, recorded, and managed in a way that is both compliant and scalable remains an open question. The group noted a pointed tension here: data is already shared routinely in everyday contexts (using a public wi-fi network, for instance), yet the **regulatory framework assumes a level of control and deliberate consent that rarely corresponds to how data actually moves through the world.**



There is a genuine tension between how data actually flows in practice and the level of control that regulation presupposes.

The **concept of sovereignty** was raised as a broader frame, encompassing data sovereignty, economic sovereignty, and technological sovereignty. As geopolitical pressures reshape supply chains, investment decisions, and infrastructure dependencies, these questions are becoming increasingly material to how organisations plan for resilience.

Energy systems were also discussed in this context. The economics of renewable investment, the efficiency of solar generation, and the influence of the current geopolitical climate on infrastructure decisions were all noted as factors that intersect directly with organisational resilience, particularly for businesses with significant physical or operational footprints.

Automation, agentic AI, and the pace of change

Artificial intelligence, and in particular the emergence of agentic AI, was **a persistent thread throughout the day**, raising questions about pace, control, and what resilience means when systems begin to act autonomously.

The direction of travel is clear

Automation is accelerating, and agentic AI, systems capable of taking actions and making decisions with varying degrees of autonomy, is moving from the experimental to the operational.

Applications in payments processing and financial workflows were noted as areas where this shift is already visible.

This acceleration carries a specific resilience risk that the group articulated with some care: the danger of moving faster than the structural foundations can support. Guardrails, the mechanisms that maintain stability, auditability, and accountability in automated systems, must keep pace with the capabilities being deployed. When they do not, the systems designed to improve resilience can themselves become sources of fragility.



There is a risk in accelerating initiatives before the structures behind them are solid. Speed without foundations erodes the very mechanisms that ensure stability.

The **human factor** was **emphasised as essential**, not peripheral. Automation does not replace the need for human judgment; it changes its character and location within a system. As more routine operations are delegated to automated processes, the importance of human oversight at critical junctures increases rather than diminishes. Maintaining that balance, between what machines can do efficiently and what requires human attention, is itself a resilience discipline.

Participants noted that this conversation is far from settled. The pace of development in agentic AI means that assumptions made today about appropriate controls, governance frameworks, and operational boundaries may need to be revised within relatively short timeframes. Resilience in this domain requires not only good initial design but the institutional capacity to revisit and adjust that design as capabilities evolve.

Learning, feedback, and continuous adaptation

Resilience is not a property that organisations acquire and then possess. It **must be actively maintained**, and that **requires learning**.

The fire service was offered as a useful structural model: prevention, detection, response, recovery, and learning. The final stage, learning, is frequently the one that receives least attention under operational pressure, yet it is the mechanism by which organisations translate experience into improved resilience. Without it, the same failures recur.

Several participants drew on the **concept of the black swan**, the inherently unpredictable event that falls outside the range of normal expectation. The lesson is not that organisations should attempt to predict the unpredictable, but that processes and systems must be designed with sufficient robustness to absorb shocks that fall outside the anticipated range. Predictability is a useful heuristic; it is not a safe assumption.

In long-term partnerships, this feedback loop becomes critical, allowing systems and operating models to adjust continuously rather than through periodic transformation efforts.

This continuous adjustment is often **more effective than large-scale, episodic change programs**.



Feedback is essential. Organisations need a genuine response to change, not just an acknowledgement of it. Feedback is what enables evolution.

Innovation was discussed as an **important contributor to resilience**, though the group was careful to distinguish between different kinds. In heavily regulated environments such as **Financial Services and Aviation**, constraint itself tends to drive a particular form of innovation, necessity-driven, compliance-shaped, and often directly focused on improving stability and reliability. In more open contexts, innovation is driven by possibility rather than necessity and serves a different function in building resilience.

Retail organisations were held up as an example of a sector that develops resilience through direct, continuous exposure to operational reality, learning from customers, from failures, and from the feedback loops that come with operating at scale in a competitive market.

Core tensions

The discussion returned repeatedly to a **set of productive tensions**, areas where competing priorities resist easy resolution and require active, ongoing management rather than permanent settlement.

▶ Speed versus stability

The pressure to move quickly, to deploy, iterate, and adapt, exists in constant tension with the need to maintain systems that are stable, auditable, and predictable. The risk is not simply moving too fast in the abstract but moving faster than the underlying architecture and governance can support. Resilient organisations find ways to hold both imperatives simultaneously, rather than trading one against the other.

▶ Short-term performance versus long-term durability

Shareholder expectations, quarterly reporting cycles, and the structural incentive to prioritise visible output over systemic health all exert pressure on organisations to deplete the reserves of capacity, technical quality, and institutional knowledge on which long-term resilience depends. This tension was described as pervasive and difficult to resolve within conventional governance structures.

▶ Optimisation versus redundancy

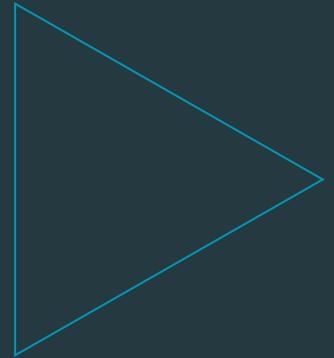
Highly optimised systems are often efficient until they are not. Just-in-time models, tightly coupled architectures, and lean operating structures reduce waste in stable conditions but leave little capacity to absorb unexpected disruption. Resilience frequently requires retaining apparent inefficiencies, slack, redundancy, and buffers that prove their value precisely when they are needed most.

▶ Innovation versus sustainability

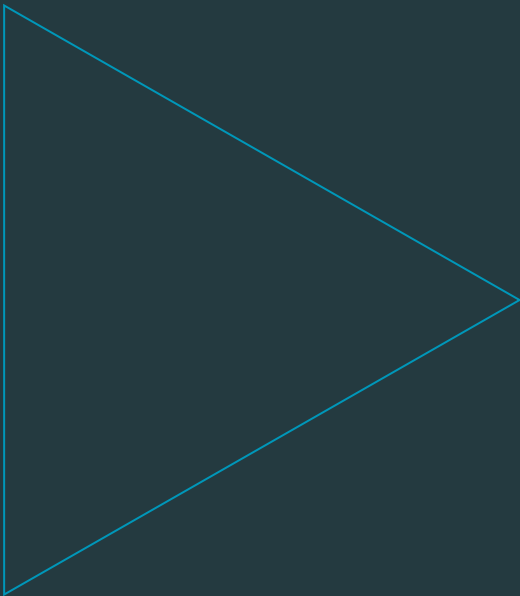
Innovation is frequently celebrated as a proxy for organisational health. But innovation pursued without regard for its human, societal, or operational consequences does not constitute resilience; it merely reconfigures risk. Truly resilient organisations build the capacity to innovate within constraints that preserve long-term sustainability.

▶ Regulation as floor, not ceiling

Regulatory compliance establishes a baseline. Meeting it is necessary but insufficient. The organisations most prepared for systemic stress are typically those that have invested in resilience well beyond what regulation requires, treating compliance as a starting point rather than a destination.



CLOSING OBSERVATIONS





The conversation that took place in London in March 2026 did not arrive at a single, consolidated definition of resilience, and that was not the aim.

What emerged instead was a more useful recognition: that **resilience is a property produced by an interplay of design choices, cultural orientations, governance structures, and continuous learning**, operating across the full breadth of an organisation and its environment.

Several observations merit particular emphasis as the industry continues to work through the challenges discussed:

Resilience is socio-technical

and it cannot be achieved through engineering alone, nor through cultural change alone. Both are necessary, and they must be developed in concert.

The tensions identified

between speed and stability, innovation and constraint, short-term and long-term, are not problems to be solved once. They are conditions to be managed continuously, with clear-eyed awareness of the trade-offs being made.

Artificial intelligence and agentic automation

are reshaping the resilience challenge. The question is not whether to adopt these capabilities, but how to do so without outrunning the governance and structural foundations required to keep them operating safely.

Learning matters as much as design

The organisations best equipped for the next disruption are those that extract genuine insight from the current one and build the institutional mechanisms to act on what they learn.

Accesa will continue to develop these themes, and we look forward to further conversations that bring forward the challenges, insights, and solutions shaping the UK and European business environments.

Our focus remains on **supporting long-term system evolution through a combination of engineering, delivery, and operational partnership**, and we look forward to continuing the conversation with participants and partners who contributed to this session.



This report was prepared by Accessa based on discussions held at a private roundtable in London in March 2026. The views expressed are those of participants and do not represent the positions of their respective organisations.

Stay in touch with us for more insights

For any general questions
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