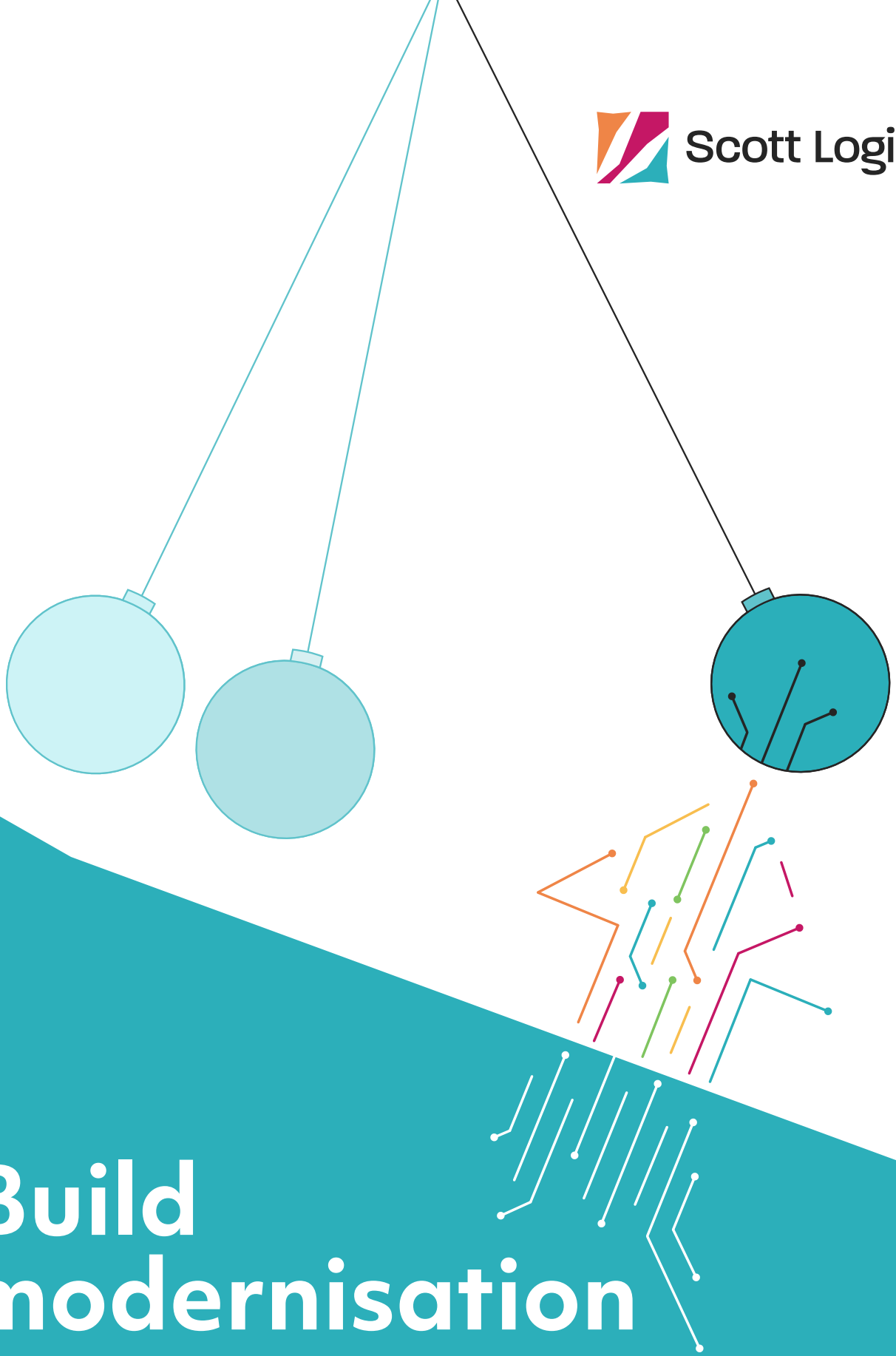
Scott Logic



Build modernisation momentum

How to harness pragmatic, affordable strategies that bypass blockers and build momentum in your legacy modernisation

Contents

Access more content

Throughout this document, we'll connect you to thought leadership material and other relevant content. To view this document online and access the additional content, follow this link or scan the QR code.

go.scottlogic.com/modernisation-momentum

We need to redefine legacy technology

A system should not be defined as 'legacy tech' due to age alone. A new definition is needed. At Scott Logic, we define a legacy system as one that is slowing your business down or reducing its responsiveness to change. A 20-year-old system that delivers value isn't legacy, but a five-year-old system that blocks innovation is.

We also need to rethink legacy modernisation; it should be a strategic capability rather than an epoch-making, capex-intensive transformation programme. By keeping your systems under regular review using pragmatic metrics, you can modernise systems only when it becomes the right business decision to do so.

When you view legacy from this perspective, it becomes clear that there are several reasons **not** to modernise a legacy system (yet), regardless of its age. Chief among these:

- **Ongoing value:** The system is still delivering consistent value and is not holding your business back.
- **Low risk and low cost:** The system is not a security concern and can still be maintained at a cost that's significantly lower than the cost of modernisation.
- **No competitive advantage:** The system is useful and secure, but it is not business-critical and changing it will not give you a competitive advantage.

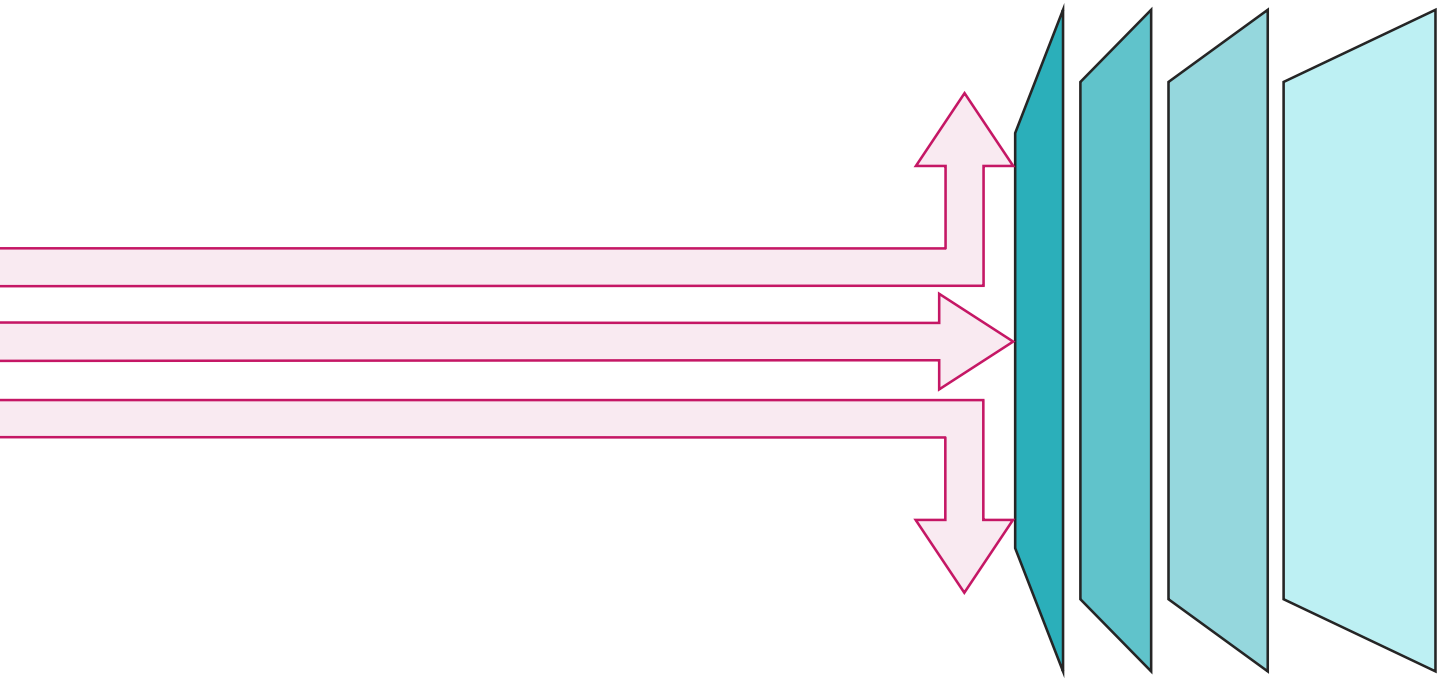
Even when your system meets this new definition of legacy, there may still be good reasons to defer modernisation for **now**:

- **No return on investment at present**.
- **Risk of disruption:** Your business is going through a particularly busy period and so it can't risk introducing disruption into operations at this point.
- **Regulatory or security compliance:** Your business must comply imminently with new regulations or meet new security standards, and it's lower risk to do this first with the as-is system before modernising.

When we redefine legacy technology in this way, the legacy challenge stops being monolithic, and you can target your efforts at systems that are having the strongest inertial effect. What's more, you can break the challenge down further; by avoiding 'Big Bang' replacements, you can instead pursue an incremental strategy that delivers early value, accelerates your operations, and increases your responsiveness to change.

Which, given the period of rapid change the energy trading sector is going through, is of critical importance.

This publication aims to outline in non-technical terms some modern strategic approaches your energy trading firm can take to bypass blockers and build momentum in your legacy modernisation initiatives. Throughout, it connects you to related insights from Scott Logic's expert consultants, allowing you to dig deeper into areas of interest. To get started, we outline the inertial influences in the sector that hold back modernisation...



Inertia in a time of dynamic change

While there are many forces of change compelling energy trading firms to modernise their technology, there are also sizeable obstacles that stand in the way and impede progress, as we describe below. However, in the next section we'll explain that there are ways forward – strategies that will allow you to bypass blockers and build momentum.

Forces of change

The energy sector is being disrupted by market changes that are forcing firms to modify systems at rates not previously seen. The introduction of decreased trading intervals and additional products is requiring systems to adapt. The energy transition, and the increase of renewable generation, has increased volatility and resulted in the need for enhanced data to produce smarter analytics. As a result, firms are reacting to forced changes rather than pursuing innovation aligned to their business goals.

Firms understand the challenges they're facing but are constrained on multiple fronts.

Inertial influences in energy trading

Some constraints on modernisation are specific to the energy trading sector:

Legacy technology challenges

Legacy technology in energy trading is deeply embedded in complex workflows, which makes modernisation a difficult challenge. When systems start to become a hindrance, they can disrupt critical functions and hinder agility. Firms often rely on overlapping, fragmented systems that can't support modern trading needs or real-time data.

Resistance to cloud adoption

Cloud adoption in energy trading is held back by security concerns, regulatory hurdles, integration challenges, and data gravity. Core components such as pricing and prediction are often tightly guarded and excluded from migration plans. Meanwhile, firms must navigate complex infrastructure and compliance issues. Larger energy traders lean heavily on established in-house systems and are reluctant to adopt cloud platforms, despite mounting pressure.

Cultural factors

Energy sector transformation requires organisational transformation, including the adoption of new structures, new processes, and new ways of working. Frequent system changes cause fatigue, while long-serving staff often struggle with market volatility and modern practices that newer entrants accept.

Constraints inherent in traditional approaches

Some constraints on modernisation are specific to the traditional approach to legacy projects, in which the system to be modernised is regarded as a monolith:

Misguided strategic approaches

The 'Big Bang' fallacy persists, with many deeming a full system replacement to be the only solution to legacy technology challenges. Institutional knowledge of the high cost and high failure rate of this approach (and institutional ignorance of better approaches) exerts a high inertial influence on proposed legacy modernisation initiatives.

Technical complexity

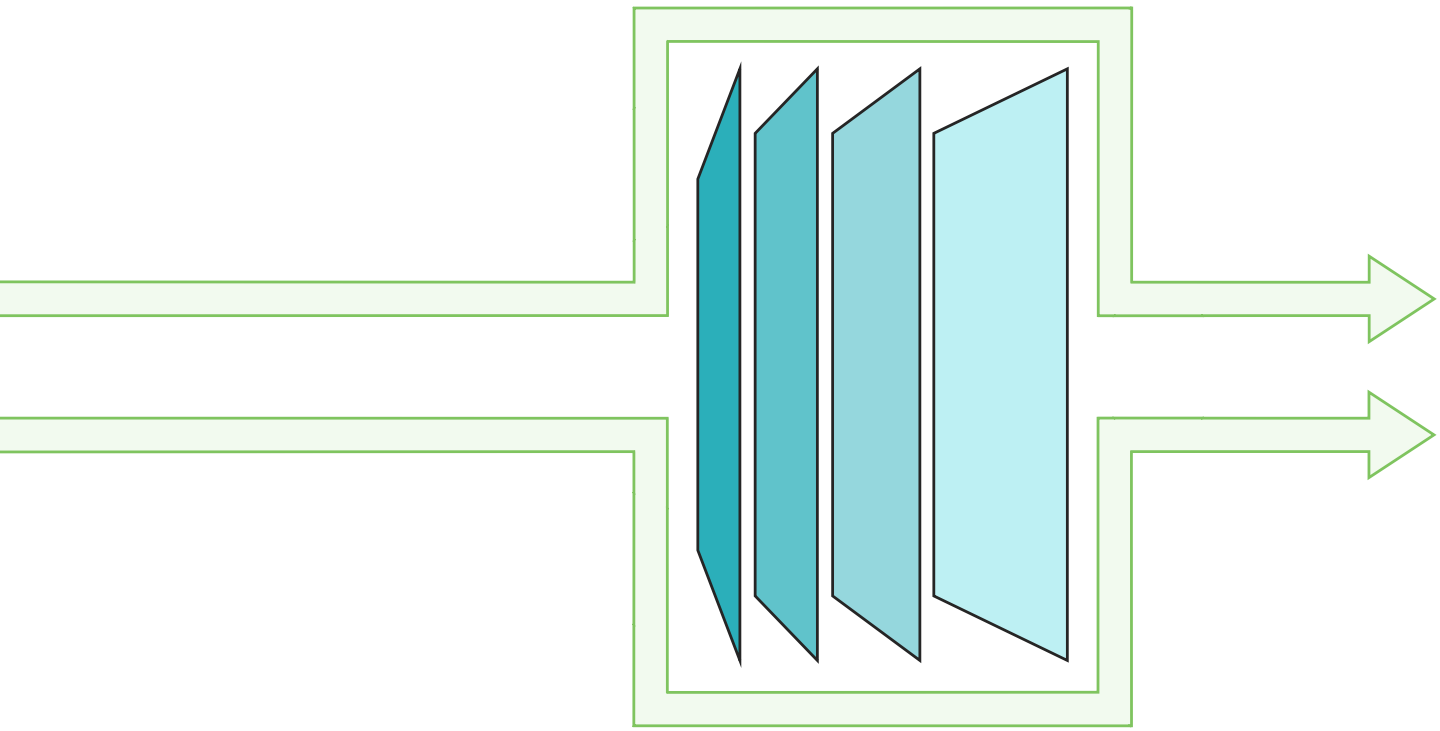
Legacy systems are often poorly documented and tightly coupled to other systems. This means that any changes to a legacy system are fraught with risk and can have unpredictable consequences that ripple into other systems. This additional complexity relative to greenfield projects also makes testing much more difficult, slowing things down. Tracing issues can be painful, and debugging often involves navigating tangled, monolithic workflows.

Financial constraints

With 'Big Bang' as the default, there's a lack of awareness of affordable approaches to legacy modernisation, making it difficult to secure investment in what's seen as an expensive, high-risk enterprise. Ironically, the large and growing cost of maintaining the legacy technology estate also reduces the budgets available to invest in modernisation; inaction only makes this worse.

Organisational and 'political' barriers

Leaders are often reluctant to champion and be the face of monolithic, high-risk, low-visibility modernisation programmes. Lack of committed and visible leadership does nothing to overcome cultural resistance to modernisation programmes within an organisation.

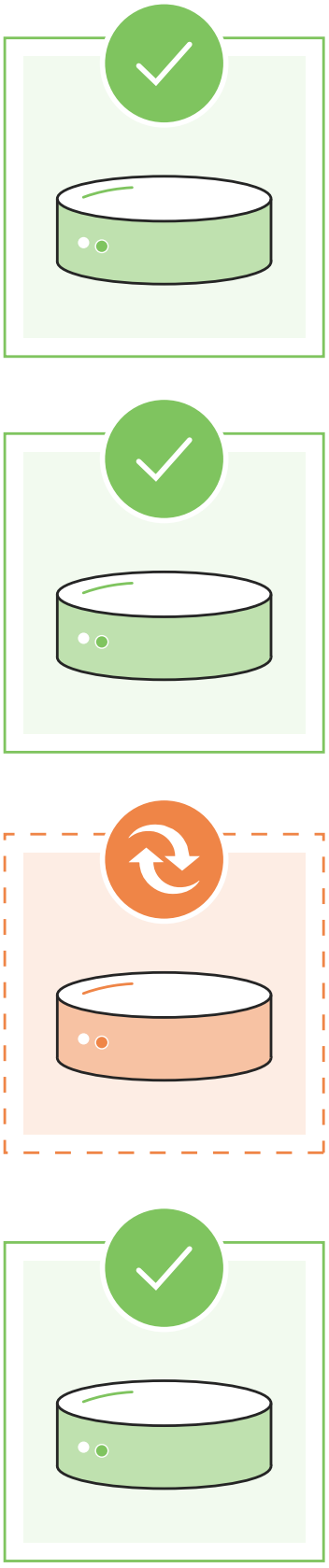


How to bypass blockers and build momentum

At Scott Logic, we have two decades of experience in supporting clients with their legacy challenges. In our experience, it's a fool's errand to try to budge the large, immovable objects that impede traditional approaches to legacy modernisation. However, it's eminently possible to go around them.

Pragmatic approaches...

We advocate the use of **co-existence strategies** and hybrid architectures. A co-existence strategy is an approach that allows legacy and modern systems to operate side by side, letting you unlock value from legacy technology without having to replace everything at once. This supports incremental transformation, allowing you to modernise at your own pace, reduce risk, and maintain business continuity. These approaches are not just technical solutions; they're strategic enablers of agility in complex environments and enable you to take your people on a journey.

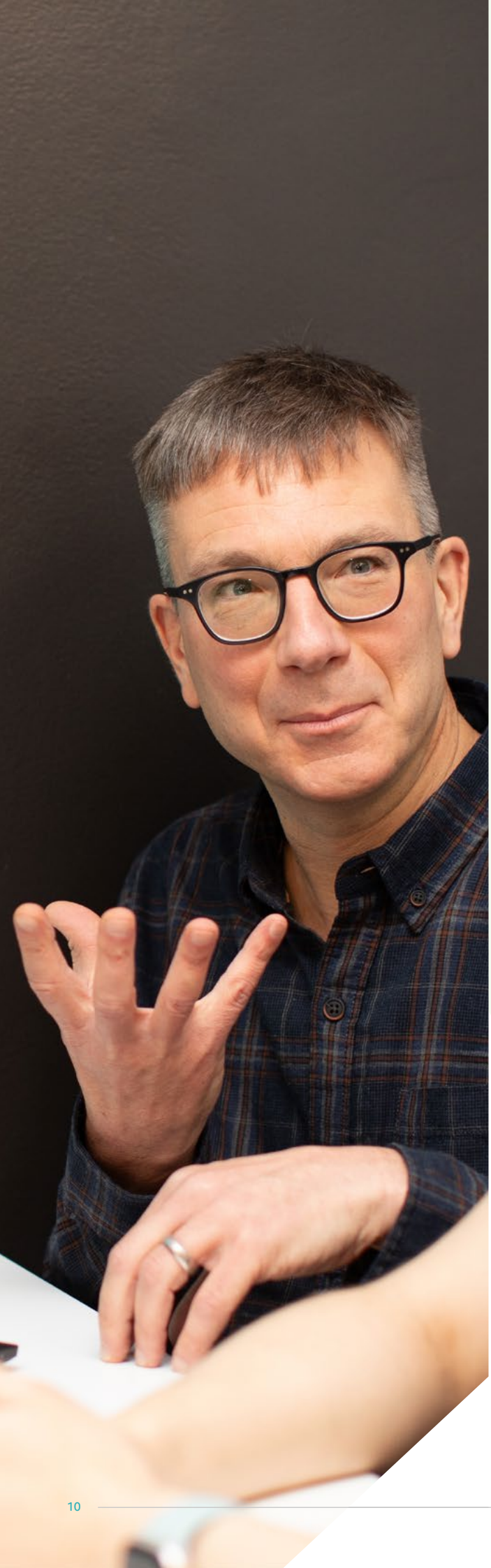


...that make modernisation affordable

Crucially, co-existence strategies help reduce the cost of modernisation. Rather than seeing a system as a monolithic whole, these strategies encourage you to conceptually decompose systems into functional slices tied to distinct business domains. This means that you can prioritise investment into modernising specific capabilities required to meet current business needs, rather than overhauling entire systems.

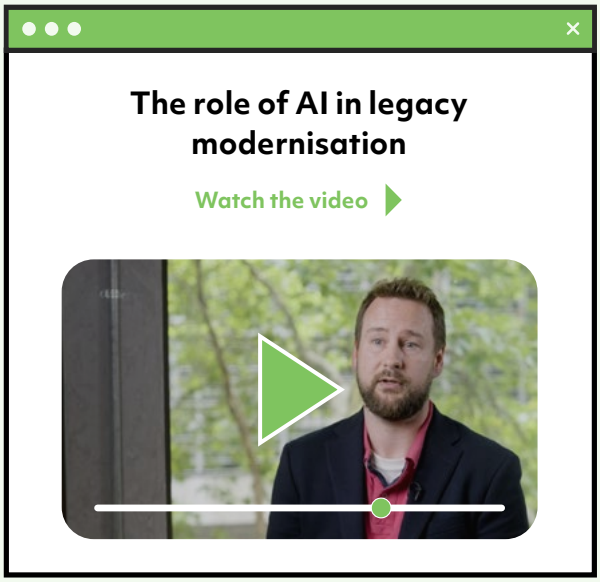
That's not the only way you can make modernisation more affordable. As mentioned earlier, by auditing your systems regularly, you can identify those that have reached the inflection point after which they will become a drain on resources and a drag on business operations. Once these systems are on your radar, you can target modernisation resources at them while leaving other systems alone for the time being.

At Scott Logic, we are richly experienced in designing and implementing co-existence strategies that bring fresh momentum to legacy modernisation programmes. After rapidly gaining a deep understanding of your business context, challenges, and goals, we advise you on the right modernisation strategy to unlock business value quickly and affordably, with the least disruption to your operations.



AI can help, but it's not a silver bullet

In what follows, you might be surprised to see that Artificial Intelligence (AI) doesn't really feature. To be clear, AI can help with legacy modernisation, such as by analysing and transforming legacy codebases, and by supporting the strategies we outline later on.



However, we intentionally left AI out to emphasise the tailored and holistic approach firms should take with legacy modernisation. 'One-size-fits-all' has no place here, and there are no silver bullets.

In the next couple of sections, we'll provide an overview of some of the most impactful co-existence strategies, followed by some important considerations for setting up and running a successful legacy modernisation project. Throughout, we'll share insights from our expert consultants, enabling you to explore each topic further.

Low-risk, high-value modernisation strategies

Numerous co-existence strategies are available, and the ones best suited to you will be determined by your business goals and technical context. In this section, we will look at some of the most common ones to give you a flavour of their potential.

Event-Driven Architecture

Legacy systems are often tightly coupled and poorly documented, making it difficult and risky to make changes to them. They also typically rely on synchronous communication and linear workflows. This makes it difficult for organisations to scale, respond in real time, or adapt quickly to change.

With Event-Driven Architecture, modern services listen to 'events' emitted by the legacy system – for example, 'OrderPlaced' – and then execute processes in response to those events. These new services are not directly coupled to the legacy system, which allows them to be iterated without any modification of the legacy code and with no impact on the system's stability. This enables you to introduce scalable, resilient and performant new functionality incrementally, with the strategic aim to retire the legacy system at the appropriate time.

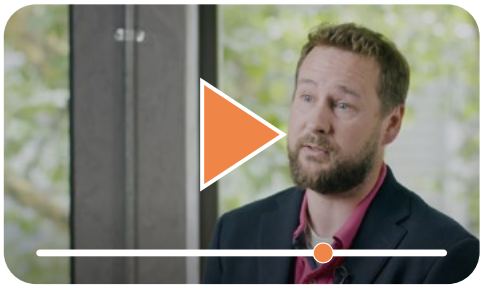
Why you should rethink legacy and consider Event-Driven Architecture

Read the blog post

Scott Logic's expert engineers can safely unlock value from your legacy systems using Event-Driven Architecture, bringing to bear experience of doing so in highly regulated environments such as energy trading, government departments, and investment banks.

Where to start with assessing your legacy estate

Watch the video



Event-Driven Architecture – The only data integration approach you need?

Listen to the podcast

Desktop Interoperability

In many energy trading firms, users must navigate multiple standalone applications that don't communicate with each other, leading to fragmented workflows, manual data re-entry, and slower decision-making. This lack of integration across the desktop creates inefficiency, user frustration, and operational risk.

Desktop interoperability platforms connect an ecosystem of web and desktop applications on a user's desktop, allowing them to communicate and work together seamlessly – sharing data, triggering actions, and streamlining workflows – with minimal modification of the underlying systems. They provide a high degree of personalisation, with the potential to boost your traders' productivity significantly. And they can unlock additional value by allowing you to share functionality between different areas of the business in a way that traditionally would have required a whole other application.

At Scott Logic, we supported capital markets firms and investment banks to be early adopters of this technology in the late 2010s, and we are already applying that experience in support of energy trading firms like yours.

A proven approach to legacy modernisation that delivers early value

Read the blog post

Low-risk legacy modernisation strategies

Watch the video

API Wrapping and API Modernisation

Legacy systems often operate in isolation, with outdated interfaces that make integration with modern platforms difficult and slow. This limits agility and scalability, and creates bottlenecks for innovation. Teams must rely on manual processes or complex workarounds to access or share data.

API Wrapping places a modern Application Programming Interface (API) around your legacy system, acting as a translation layer that converts modern requests into formats the legacy system understands, and vice versa. This approach allows you to connect your legacy system to newer platforms and services, supporting automation and unlocking legacy data for use in modern applications – all without needing to rewrite the legacy code.

APIs sometimes require modernisation themselves. For example, your business trades on power exchanges. If an exchange modernises its trading API, you need to be capable of adapting to that change with minimal disruption to your business. It's easy to get this wrong, so if you get it right, it can be a source of competitive advantage.

Advice on transitioning from a legacy API

Read the blog post

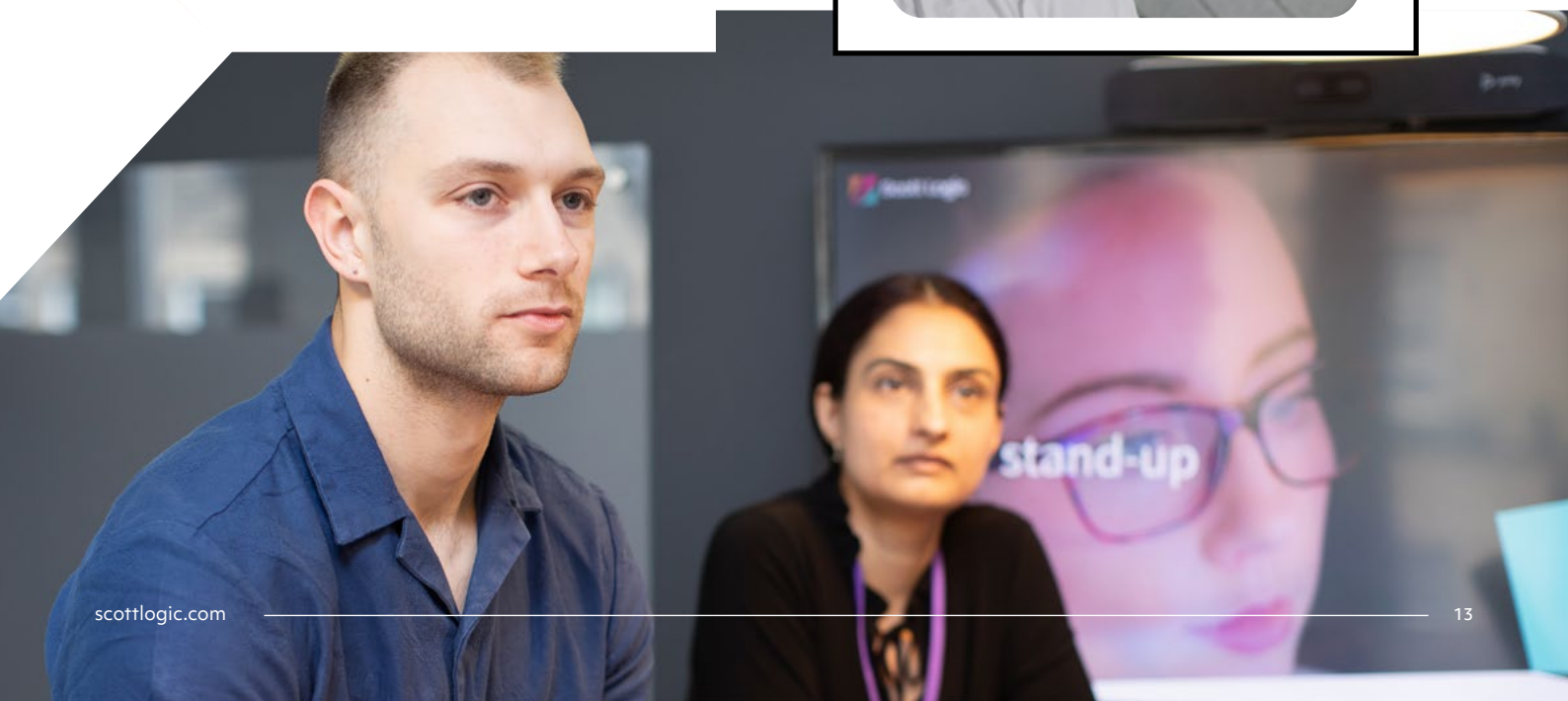
At Scott Logic, we have long championed the strategic use of the humble API to facilitate legacy modernisation, support innovation, and enhance business responsiveness. Our engineers can help you gain all the benefits of treating APIs as first-class citizens in your digital estate.

Harnessing the cloud in Energy Trading

Watch the video

Open your eyes to APIs

Read the white paper



Data Extraction and Integration

Energy trading firms often struggle with fragmented data architectures. Much data may reside in legacy systems that are difficult to access, integrate, or analyse at scale. Even where there has been some cloud adoption, structured data lives in data warehouses and unstructured data in data lakes, which creates silos, duplication, and inconsistent analytics.

By pursuing a data extraction and integration strategy, you can liberate data from legacy systems before integrating it into a centralised environment. This opens up modern data architectural solutions such as data lakehouses, which combine the scalability and flexibility of data lakes with the structure and performance of data warehouses. This reduces duplication and supports advanced analytics and AI by making both structured and unstructured data accessible and queryable in real time.

We pride ourselves on providing sound and unbiased advice by remaining technology agnostic, so the recommendations we provide to unlock the full potential of your data will be determined by what's best for your business.

What is a Data Lakehouse?

Read the blog post

De-risking delivery and ensuring quality

Moving away from 'Big Bang' modernisation doesn't magically de-risk legacy projects. They still carry unique risks due to system complexity and user impact, and the fact that the system remains in use throughout the modernisation initiative. However, by tailoring strategies around people, processes, and quality assurance, your business can de-risk delivery, optimise flow, and accelerate value realisation.

Setting your project up for success

By their very nature, legacy modernisation projects require more up-front analysis than greenfield projects. Leaders who put pressure on teams to curtail discovery and commence delivery jeopardise long-term success for short-term momentum. The consequences can include a failure to achieve business goals, an erosion of stakeholder trust, and a squandering of investment.

Regardless of the scale of your legacy modernisation project, it should begin with a discovery phase that intentionally steps back from a focus on the legacy technology. Instead, the discovery should work towards a holistic view that encompasses business goals, business processes, user journeys, and current systems, among other key elements. This should involve close collaboration between architects, business analysts and UX designers. Doing sufficient up-front design to resolve key uncertainties will reduce risk, support smarter prioritisation, and build a foundation for sustainable modernisation.

As well as priding ourselves on our engineering excellence, we at Scott Logic pride ourselves on our delivery excellence. Our delivery experts oversee collaborative, multidisciplinary discoveries that shape robust, transparent plans for a de-risked delivery.

Why a holistic approach is the key to a successful legacy modernisation project

Read the blog post

How we manage the delivery of legacy modernisation projects

Watch the video

Shaping a people-centred strategy

By their very nature, legacy modernisation projects are focused on systems that people are accustomed to using and which are woven into the fabric of business as usual. As such, they often involve more emotion than greenfield projects, prompting anxieties about the unknown, about learning new skills, or even about potential job losses.

It's crucial to place people at the centre of your legacy modernisation project from the beginning, and not just in terms of an effective communications strategy, vital though that is. All relevant stakeholders with deep knowledge of the as-is state should help shape the to-be processes. Care should be taken over delivery team composition to foster a collaborative culture of people motivated to achieve the business goals.

As a people-focused business ourselves, we help your business in placing people at the heart of successful delivery by cultivating high-performing teams, supporting effective stakeholder management, and strengthening in-house capabilities.

How to avoid 'cultural rework' on a legacy modernisation project

Read the blog post

Ensuring a user-focused outcome

Just as the people/cultural dimension is often neglected in legacy modernisation projects, so too is the user. These initiatives are not simply an opportunity to upgrade the technology; they are an opportunity to reimagine how it performs its function for its users. If you simply replicate outdated workflows in new systems, the result could be just a legacy system on a new tech stack.

Whether the user is a colleague or a customer, UX plays a transformative role in software development, including legacy modernisation. Involving users at the earliest stages allows you to understand what they need from the system and their frustrations with the "as-is" solution. This enables you to think through how to streamline business processes and address the same user needs with today's technology, such as automation and AI.

Born out of the worlds of capital markets and investment banking, Scott Logic has two decades' experience in working with clients to simplify complexity in creating tailored and intuitive interfaces that streamline effective decision-making.

Client Story
EDF Trading

What they aimed to do
Modernise energy trading by replacing legacy systems, improving user experience, and enhancing delivery capabilities.

How we helped
We helped EDF Trading decommission legacy systems incrementally by redesigning key applications with a user-centred approach, automating processes, and enhancing the user experience. We also strengthened agile delivery through mentoring, pair programming, and continuous integration.

Business outcomes
Productivity and efficiency improvements through process automation and streamlined user workflows, along with reduced maintenance costs and improved team capability across the business.

Read the case study

Elevating Software – The Indispensable Role of UX

Read the blog post

De-risking delivery through a tailored approach

Much more so than on greenfield projects, testing on legacy modernisation initiatives requires careful handling due to the likely complexity and fragility of the as-is system, and its integral role in critical business workflows. The application of rigid testing approaches or a one-size-fits-all mindset is liable to lead to wasted effort, higher costs, and reduced quality.

A tailored, pragmatic, and adaptive approach is called for, one that is aligned with business and user goals. By understanding the system context, prioritising risk-based testing, and incrementally building automation, you can maintain quality and continuity in a way that is responsive to the evolving needs of the project.

Our specialist test engineers can advise you on a holistic, risk-based test strategy that takes in the system, the project, and the wider business, and support you to implement it in a way that de-risks project delivery and yields high-quality outputs.

How is de-risking a legacy modernisation project different?

Read the blog post

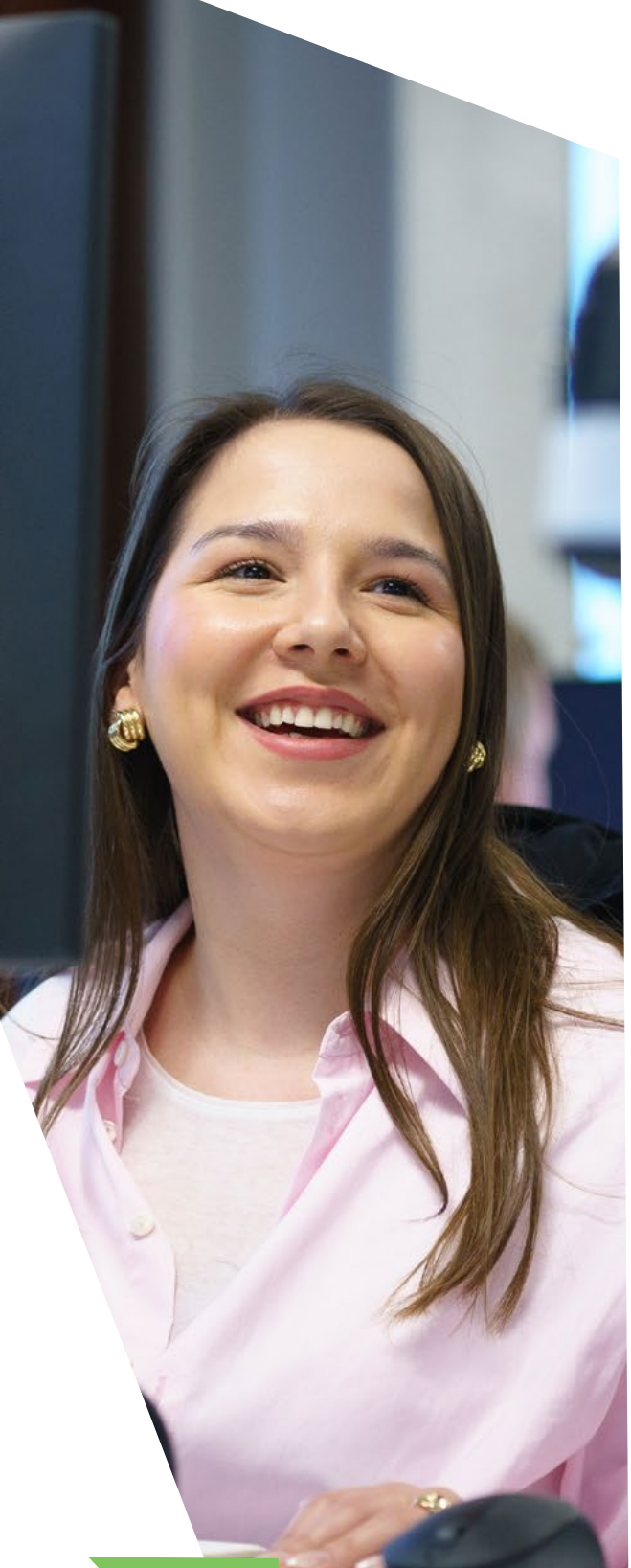
Client Story
Nord Pool

What they aimed to do
Overhaul their trading systems so as to set a new standard for usability in the power market, and transform the way its energy clients could trade online.

How we helped
We managed the end-to-end delivery of a range of products, from day-ahead and intraday trading to the extranet, a mobile app and the Urgent Market Messages application. As well as daily standup meetings, work was split into short iterations in which Nord Pool was able to review progress and influence future direction.

Business outcomes
The modernisation set a new standard for user experience and enabled Nord Pool to deliver a white-labelled version of the day-ahead application to other power exchanges.

Read the case study



Optimising flow to deliver value

Software delivery teams are no more intrinsically efficient than any other team – and working in the complex domain of software engineering, there is ample opportunity for inefficiencies to creep in. Poorly defined tasks, shifting priorities, and too much concurrency are just a few of the factors that can increase friction and delay value realisation.

Optimising flow is the key to successful delivery. Teams should be given the time and freedom to review their practices and constructively challenge the status quo, if required, to improve their efficiency. Through planning and a commitment to continuous improvement, teams can streamline delivery, build stakeholder confidence, and release value frequently.

Whether working as a standalone team or augmenting your engineering teams, our consultants bring a passion for improving ways of working to optimise flow and realise value.

Want to deliver value? Focus on flow

Read the blog post

Ready to get your modernisation moving?

For two decades, we've helped companies in highly regulated industries take a pragmatic approach in leveraging technology to achieve their business goals. With our support, you can turn legacy modernisation into a strategic capability that not only prevents technology from slowing down your business, but also accelerates innovation and increases productivity.

If you'd like to discuss your legacy modernisation challenges and where our expert support could help, we're always happy to chat.

Contact Sam Perridge, Energy, Commodities and Utilities Director:

+44 333 101 0020

sperridge@scottlogic.com

Scott Logic

6th Floor, The Lumen
St James Boulevard
Newcastle Helix
Newcastle upon Tyne
NE4 5BZ

+44 333 101 0020

scottlogic.com