Talk Think Do

Legacy Systems Are Costing Your Business' Growth

A guide to innovating mission-critical applications in the cloud

Contents

Legacy Systems Are Costing Your Business' Growth

## A guide to innovating mission-critical applications in the cloud

One of the major barriers to growth identified for the UK government digital services is 'unaddressed legacy systems and technical debt.'[1] This isn't necessarily surprising — business leaders have long been aware of the inherent harm that legacy technology brings to their organisations. But many still struggle to identify their legacy systems in the first place, let alone how they can effectively progress past them to start achieving growth at scale.

Legacy technology is commonly associated with clunky in-house systems, with the assumption that they can be easily fixed through introducing SaaS solutions. However, the agility that the cloud offers means that companies that are heavily reliant on third party SaaS solutions should take a long, hard look at how fit-for-purpose these external solutions really are. The cloud is now often the means to re-internalise customisation and control.

Cloud computing has evolved tremendously, making it among the biggest technology innovations of the last two decades. The cloud no longer just facilitates streamlined and efficient infrastructures, but has also become a key enabler of business-centric innovation and growth.

As the capabilities of the cloud continue to expand and advance, business leaders must revise how they take advantage of the growth opportunities it provides. Critically, they need to recognise that not utilising them can actively be holding them back from competitors that are already up to speed.

In this eBook, we're going to take you through how your business may not be achieving the growth it deserves due to unrealised legacy technology — and more broadly, how supported cloud computing is the key to securing constant, enduring success.
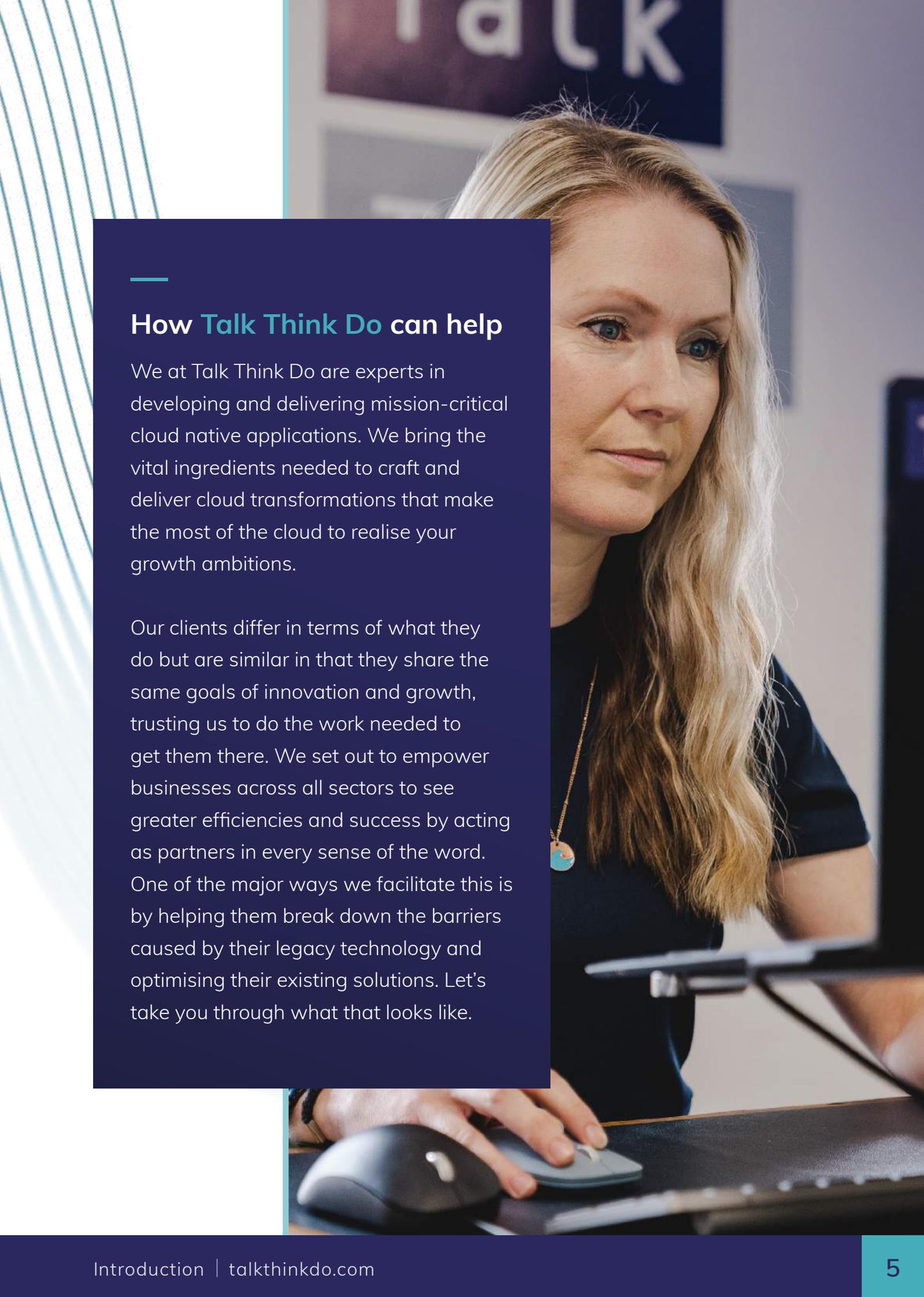
How **Talk Think Do** can help

We at Talk Think Do are experts in developing and delivering mission-critical cloud native applications. We bring the vital ingredients needed to craft and deliver cloud transformations that make the most of the cloud to realise your growth ambitions.

Our clients differ in terms of what they do but are similar in that they share the same goals of innovation and growth, trusting us to do the work needed to get them there. We set out to empower businesses across all sectors to see greater efficiencies and success by acting as partners in every sense of the word. One of the major ways we facilitate this is by helping them break down the barriers caused by their legacy technology and optimising their existing solutions. Let's take you through what that looks like.

Recognising your legacy system

Recognising legacy technology is no longer as straightforward of a process for businesses as it used to be. Many of the problems brought on by legacy technology are commonly misattributed to other gaps in efficiencies, when really a whole host of issues could be solved by simply advancing your systems. Here are the major signs that legacy technology is either preventing you from reaching your business goals — or soon will be — that you need to look out for.

Poor performance and counterproductive maintenance

These adjoining issues are probably the easiest to recognise. They refer to systems that:

1 Operate unreliably and/or are performing poorly.

2 Are nearing end-of-life, making it increasingly challenging to maintain continued support.

3 Have updates and upgrades that are costly, slow, or require multiple workarounds.

These warning signs may already be visible — or they may be starting to reveal themselves as potential risks that will come about from updating your technology systems. Either way, implementing cloud computing is critical to both offsetting and preventing this kind of damage.

Data analytics constraints

The use of advanced data analytics has fast become an established element of business management.[2] Legacy technology is often the root cause for companies that are unable to routinely collate and integrate the internal and external data sources needed to underpin analytic insight. As artificial intelligence (AI) and machine learning become more widely adopted across the enterprise – whether that is to launch new customer propositions, enhance operational performance or for process automation – the opportunity costs of legacy constraints are growing.
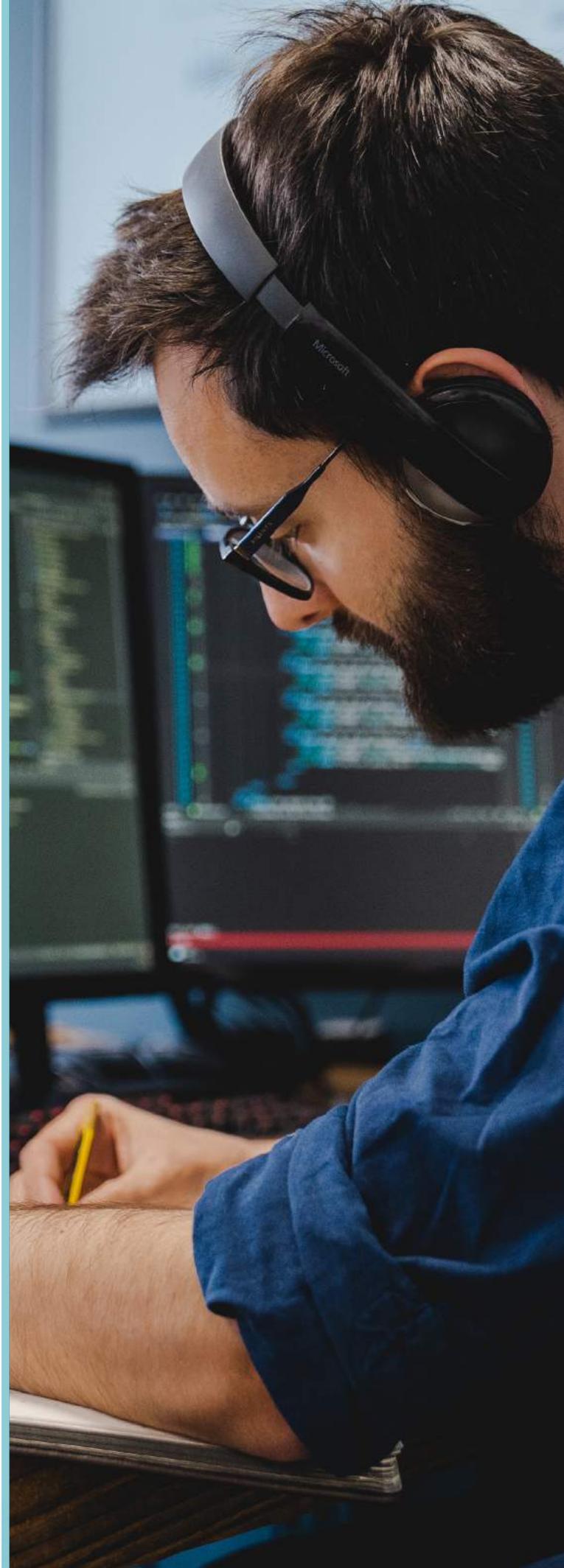
Rising costs of security and compliance

The number of corporate data breaches and cyber attacks continues to grow year on year with no sign of abating.[3] Equally, the risk landscape of cybersecurity threats is evolving and now includes not only the more traditional threats of phishing and ransomware but also more novel threats such as social engineering, crypto-jacking and the compromising of IoT devices. Regulatory expectations of operational resilience, data security and data privacy are rising commensurately.

If you're finding that the costs of maintaining a safe, secure and compliant IT environment are escalating fast, it's likely due to having a complex, legacy on-premise system that's gone unnoticed.

Lacklustre speed to market and CX

Though the above signs point to how legacy systems prevent efficient internal workflows, it's worth noting that the damage they bring extends well beyond that. The ability to effectively and quickly get to market has always been key to business success. But in today's fast-moving, digital landscape, it's more crucial than ever to stand out from a growing crowd of competitors. So if you can't ensure that your organisation is putting its best foot forward in regards to its place in the sector and how your audience interacts with it, you're in trouble.

The ability to personalise and provide business functions to the customer experience is yet another important factor organisations need to see success — but ultimately can't if they have outdated systems holding them back.

We mustn't forget another other key set of "customers" whose experience you need to prioritise — your employees. In the wake of the pandemic, employee expectations of enterprise apps for flexibility, mobility, and remote collaborative working have risen dramatically. Satisfying them with legacy, on-premise enterprise solutions is just not possible.

Customer experience is key in the business of loyalty. We helped Avios — which provides the loyalty platform for all IAG airlines — build cloud-native mobile loyalty applications that released their customer experience aspirations from the constraints and unreliability of legacy back-end systems. If your customer or employee experiences or rate of release of new propositions is falling behind competitive parity, it may well be that legacy technology is to blame.

Past migrations are not enough

The benefits of cloud computing and the drawbacks of legacy technology are both topics that have been addressed long enough that many businesses have taken at least some form of cloud migration within the last few decades. But the capabilities of the cloud continue to expand so quickly, and so extensively, that previous migration efforts will inevitably give way to legacy systems.

Early migrations were often executed on a "lift and shift" basis — migrating applications and the associated data to cloud hosting with minimal or no redesign or modification. This may have achieved the goal of moving capital expenditure (CapEx) to pay-for-use operational expenditure (OpEx) and will have reduced the amount of time managing backend infrastructure. The problem is that this doesn't give businesses the full scope of efficiency that a full paradigm shift to a more agile, flexible and secure IT environment would. Businesses need to realise that this kind of shift not only spells out notable success and profits for the long term, but is crucial to revisit every so often to ensure growth and stability.

The cloud, revisited

The core rationale for moving to the cloud has evolved from being about cost to also factoring in greater enablement of growth. This growth essentially comes down to seeing faster speed to market, asset-light scaling, and the accessing of data management, analytics and cybersecurity capabilities that would otherwise be cost prohibitive for many.

The long-lasting
benefits of the cloud

A survey of 200 UK executives found that 36% are already using the cloud in at least one business area, with a further 50% using it to identify business cases and run pilots.[5]

PwC's recent cloud survey revealed executives' top business objectives for the cloud to be improving resilience and agility, improving decision-making through better data analytics, innovating products and services and creating better customer experiences. The ambition of reducing costs was down at eighth on the list.[4]

Use of the cloud is moving from merely being a means of controlling today's costs and accessing infrastructure resources, to becoming an essential enabler of tomorrow's business ambitions.

How? There are two main ways: cloud's enablement of faster, more agile deployment along with the ability to access the latest data, analytics and cyber capabilities in a cost-effective way.

Let's take a closer look at why cloud computing has deservedly endured.

1

Faster, more agile deployment:

Rearchitecting applications to the cloud allows growth-oriented companies to experiment and deploy new products and services into production much faster. Basic products are deployed into production at pace and then improved upon by adding new features iteratively in response to customer usage and feedback.

With the self-service architecture of the cloud, cross-functional teams can break complex new ideas and projects down into manageable sub-components. Different teams can then focus and specialise on working on their own component, leading to greater productivity for engineers on the road to deployment. The cognitive overhead for engineers is effectively reduced from the use of internally shared libraries and dashboards that provide helpful insights into deployment performance.

Enterprises that have fully embraced cloud architecture are experiencing much higher rates of innovation whilst reducing risk by building and deploying smaller, isolated, iterative changes. The API-based extensibility of microservices makes it easier to plug-in new third party services meaning they're also better set up to add new capabilities through partnerships rather than having to build everything themselves.

2

Accessing cloud-strength capabilities:

The public cloud brings a rich set of middleware services that fewer and fewer businesses are able to replicate on-premise. These capabilities being:

A. Data management, AI, and machine learning:

Organisations now interact with their customers through a huge variety of touchpoints: websites, apps, customer services, physical stores, email, loyalty programmes, social media marketing, and search advertising are all crucial to retrieving customer data. But organising and integrating all of this data so that businesses can derive actionable customer insights from them is a huge challenge to do in an on-premise environment. Separate and distinct product and distribution systems lead to overwhelming data silos. Cloud computing on the other hand offers world-class data integration, storage, and management capabilities off-the-shelf.

Plus, enterprises are not only adopting AI and machine learning to generate insights from these vast customer datasets, but also to enable entirely new customer-facing propositions and automate internal processes.

With that said, we know that the space of AI and machine learning (ML) can seem tremendously complex and daunting. There are a raft of technology choices, expertise challenges, complex model pipelines and operational and risk management considerations. Up until recently, AI and machine learning was highly specialised and prohibitively expensive, making it exclusive to a very small portion of businesses.

Public cloud providers, however, are democratising access to these tools. Through the cloud, businesses can now access API-based services for a wide range of AI/ML solutions: from document processing to language translation, image and video analysis, recommendation engines and anomaly detection. More importantly, cloud providers offer standardised AI/ML workbenches and operations tools to enable organisations to robustly develop and deploy their own models. The security afforded by the cloud means that businesses can see greater growth and creativity in their work without risk.

B. Cybersecurity:

The wide access and availability of the cloud used to give way to scepticism around its security. But as the scale and sophistication of cybersecurity threats have grown, this has evolved into recognising that the cloud is the most holistic way to accessing advanced cyber defence capabilities. With threat detection services, enterprise security monitoring, device management, and a team of licensed cybersecurity experts, cloud providers are building incredibly secure IT environments. This is particularly essential for small to medium-sized businesses, as cloud vendors can offer a far more secure environment than they would realistically be able to achieve for themselves. Every organisation deserves a secure foundation to work off of and grow from — the cloud makes that possible.

Our client Explore Learning – a leading private tutoring provider with over 100 centres across the UK – was one major company that used the cloud to fully access this wide range of growth-oriented gains.

We helped Explore Learning replace an inflexible SaaS membership application with a cloud native solution designed around their unique requirements. Working with us, Explore Learning used the cloud to build a sophisticated, market-leading online learning platform that provides interactive tuition to children at home – allowing the tutor to see and control the child's learning experience unlike any off-the-shelf SaaS video platform. Adaptive machine learning analyses the millions of questions being answered by children every week to optimally tailor the learning path for each child.

Beyond this, Explore Learning was able to better manage the demand spikes for their tutoring services, automate semi-manual billing and payment processes, and regain ownership of their IP. Member retention has increased from 65% to 95% and through the platform 40,000+ tutoring sessions are being delivered, and the numbers continue to grow. With this foundational platform, Explore Learning now has the potential to expand their business on a global scale, using cloud-based technology to set themselves up for future growth.

Just as was the case for Explore Learning, embracers of the cloud are developing new services and driving benefits across a wide range of business areas — from new proposition development, to customer operations, to back-office functions such as finance. The cloud offers tremendous upsides to those organisations that know how to fully capitalise on its capabilities.

The **five common challenges** of moving to cloud

By now it should be clear that you can only benefit from the full possibilities of the cloud by taking it on as a fully supported strategy. The challenges that can come with attempting to undertake cloud migrations and developing cloud-native applications single-handedly — let alone failing to — can spell out even further damage to your business operations than a legacy system could.

This doesn't mean that you should now be sceptical or even afraid of pursuing a cloud migration. If anything, what you stand to gain from doing so makes the task worth it. All that you need to remember is that businesses should not make the mistake of assuming that they will ever fully grasp what cloud computing has to offer.

To put it in context, we've outlined five challenges you should be aware of that make cloud migrations easier said than done.

Strategy

Scoping

Governance

Rearchitecting

Ways of working

Strategy

The Deloitte cloud survey found that "clarity of vision and ambition" was one of the most common barriers to cloud adoption. The PwC survey adds colour to this and reveals that amongst C-suite executives there is often no clear alignment on the main sources of value for moving to the cloud. Some equate it with faster innovation, some with improved resilience, some increased revenue. The reality is that the primary benefits of the cloud will depend on the specific circumstances of your business. Gaining clarity and alignment on these at the C-suite is critical to successful execution of your cloud strategy.

Scoping

The choice of which systems and applications should be migrated and when should directly reflect your strategic ambitions for the cloud. Still, businesses must carefully take into account a number of other considerations when scoping their move. Your level of experience with the cloud may lead you to prioritise moving lower risk ancillary services and specific, contained applications before moving core systems. Interoperability considerations between public cloud and on-premise environments may be a factor. Control and security considerations are another. Getting the scoping and phasing of data and application migration right is critical to both manage migration complexity and realise the hoped-for benefits.

Governance

We will put our hands up and acknowledge that cloud transformation projects can never technically be done alone. They are bound to be endeavours that will require and involve a lot of input from key stakeholders and internal teams. This is especially true for businesses that are a part of a larger group. The problem is that critical factors around how the new system adheres to cybersecurity and compliance best practice can easily be left on the wayside — or just not given the kind of expertise and focus that's needed.

Rearchitecting

The most highly prized benefits of moving to the cloud — increased flexibility and speed to market by moving to more agile development and deployment approaches — can only be fully accessed by rearchitecting legacy applications to take advantage of the modular, iterative development gains that microservice-based architectures bring. Other approaches like lift and shift, rehosting, and refactoring are often too simple to enact real, effective change. Rearchitecting for the cloud goes hand-in-hand with breaking an application down and redesigning it in a truly service-oriented, scalable way. Other cloud migration approaches simply don't hold up.

Ways of working

Cloud transformation is no longer about technology – it's about moving to a much more customer-centric, growth-oriented delivery approach. Increasing the pace of delivery of new products and services for customers and employees goes hand-in-hand with having much more streamlined business approaches. That means multidisciplinary team structures, agile disciplines, and equipping developers with the tools and workflows needed to efficiently build and deploy products. Transforming ways of working to this agile paradigm has to happen in parallel with the technical migration of data and applications to the cloud.

For some, addressing these common challenges may seem daunting, but with access to appropriately experienced support, it won't have to be.

Department for Education

In the case of our client the Department of Education, their on-premise systems used to design, prototype, and allocate critical funding to schools were no longer coping with the demand load. While moving to the cloud was a natural solution, the partnership was taken a step further by securing internal growth through upskilling their support teams — all to guarantee that their immediate developments could be sustained.

The business case for a **cloud migration partner**

For organisations that are beginning their cloud transformation journey — or for those that have thus far only rehosted to the cloud — working with a cloud migration partner can make a lot of sense. Businesses should expect to access multiple sources of gains from working with the right partner.

Experience and best practice

The right partner will bring to bear learnings and perspectives gained from a wide range of experiences across multiple clients in multiple industries. They will shed new light on how, why, and whether or not your existing technology may be falling short relative to best-in-class. They will have their fingers on the pulse of the latest developments in cloud capabilities. They will have built multiple cloud transformation business cases that have demonstrably realised both short-term gains and longer-term strategic benefits. This kind of expertise and experience is what enables them to inevitably improve your design choices and delivery practices.

Objectivity and independence

Cloud transformation is a strategic undertaking requiring careful and proactive internal stakeholder management. Achieving and maintaining executive buy-in and alignment throughout is key. Working with an independent partner that brings objective, external credibility can be an essential element in cutting through any internal inertia and predisposition.

Access to talent and swift pace of growth

The rapid growth in the adoption of cloud and agile is creating a new talent challenge. Access to talent — such as skills in cloud architecture, DevOps, and cybersecurity — is becoming a real barrier to cloud adoption. Working with a partner alleviates this both by addressing expertise gaps in the short-term and through coaching, guiding, and upskilling your in-house teams. However, it's not just about skills access but also about mindset. The right partner should help introduce and clear the way for an orientation towards customer-centric pace and growth.

Overall, the right cloud migration partner will accelerate your path to realising the benefits of the cloud while reducing, or even eliminating, the risks of delivery.

Our work with Transport for London on their Mobile Programme is a great example of this. The programme was struggling to deliver applications that required integration with legacy backend systems and was often being blocked by existing IT governance processes. TfL needed newly designed mobile apps that could improve efficiencies, enhance the working life of staff, and deliver better customer experiences.[6]

Talk Think Do played a pivotal role in accelerating this programme not only by bringing cloud solution architecture expertise to design the backend systems for the new mobile apps, but also by bringing independence and objectivity to bear in working closely with IT enterprise architecture, security governance, and IT change control to deliver solutions that worked for all parties involved.

A partner you can rely on.

So what makes Talk Think Do different? We bring the critical ingredients needed to craft and deliver cloud transformations so that you can not only achieve your business-critical goals and objectives, but have the space to develop and see greater growth strategies.

We understand the cloud and know how to utilise it to meet (and go beyond) your business goals. Whether that be to facilitate more resilient infrastructure, more agile product growth or to tap into the cloud's advanced data management and analytics services.

We are a Microsoft Gold Partner and are veritable experts on the Azure platform. As the fastest growing public cloud platform, Azure brings an unparalleled suite of cloud products and services, delivered with a high and proven commitment to security and compliance.

We tailor our support to each and every client. We invest time upfront to understand your business priorities and ambitions, your approach to innovation and your appetite for risk. We help you understand how to use the cloud to further your specific business ambitions and often find ourselves suggesting more ambitious approaches made feasible by cloud opportunities our clients were unaware of.

We inject best practice and technical expertise. One example is our proprietary assessment of legacy — reviewing your application against its ability to support 12 technical practices proven to improve delivery. Our expertise encompasses not only cloud-based solution design, but also the agile delivery practices needed to fully realise the cloud's potential.

We balance pace with a measured, risk-managed approach. Our work often comprises a series of discrete, gated phases – from an initial discovery phase through to analysis, design and delivery. When appropriate we build a proof of concept to prove technical feasibility, end user value and assist in gaining stakeholder buy-in.

We take care of governance, compliance, and security concerns from the get-go. We have helped many clients overcome the barriers they have encountered in addressing the concerns of governance, compliance, and security stakeholders. For others, we avoid these potential roadblocks by ensuring that the corresponding technical considerations and stakeholder management are part and parcel of cloud transformation from day one.

We offer managed application support for organisations with limited in-house IT resources. We ensure that your mission-critical applications are proactively monitored for availability, security, and performance. An expert team is on-hand to deal with any incidents and to support technical requests.

We understand cloud computing inside and out and believe all ambitious, growth-minded businesses deserve that kind of expertise. More than anything, we know that being told about a problem and developing then applying a short-term solution is not enough to facilitate growth. We set out to be partners in every sense of the word by fully integrating ourselves within your business so that each and every solution we provide is personalised, sophisticated, and well-informed.

To see growth for your business today — from legacy systems and beyond — get in touch with us today.

Contact Us

References

[1] [Organising for Digital Delivery - GOV.UK](#)

[2] [Thriving in an AI world | KPMG](#)

[3] [Data breaches and cyber attacks in 2021](#)

[4] [Cloud Business Survey - How to maximize cloud ROI | PwC](#)

[5] [Cloud Survey 2021 | Deloitte UK](#)

[6] [Transport for London Case Study | Talk Think Do](#)