

EXPANDING POSSIBILITIES IN THE CLOUD

EXPLORE NEW HORIZONS

Modernise IT deployments by leveraging the Cloud and emerging software services.



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INTRODUCTION

Build competitive advantage in an increasingly software-dominated world

Legacy investments can inhibit growth and innovation, limiting the ability to meet current and future business needs or integrate with new technologies. Backed by proven experience of complex Cloud deployments, BJSS can support your modernisation agenda, building and delivering modern managed services to help accelerate competitive advantage and drive profitability.

We'll answer three key questions that are dominating today's CIO agenda

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Q1 What's the best approach to modernise legacy applications and platforms?

Q2 How are new and future business requirements captured and delivered?

Q3 How should new Cloud services be operated and supported?

Achieve business potential with an optimum approach to IT service modernisation.

Legacy technology is the biggest barrier to digital transformation. While investment in aging platforms and applications continue to drive the day-to-day business processes of many organisations, they can be expensive to maintain and difficult to modify.

The Cloud provides a secure platform for modernisation. Together with maturing and open-source software technologies such as serverless computing, microservices and containers, Agile and scalable alternatives are now available to replace the monolithic applications that hold business back.

These advances create the potential for IT teams to develop a fresh approach to operations and service management. Underpinned by a collaborative culture, new skills, capabilities and modern service management techniques ensure the integrity of the new services. More enterprises are adopting and developing DevOps structures to support these modern, Agile software platforms.

In this eBook, we examine each of these areas, providing practical insight and advice based on our experience of delivering modernisation services to leading organisations in the public and private sectors.

THE CASE FOR IT MODERNISATION

42% of CIOs rank IT modernisation as a Top 3 benefit of public Cloud.¹

Modernisation is often associated with digital business initiatives, which many organisations are pursuing. Cloud computing is a key enabler for digital business, thanks to its specific benefits and as a foundation for other digital business technologies.

The use of public Cloud services will grow as a result of organisations modernisation and digital business initiatives. For example, IaaS is essential for Big Data initiatives because only Cloud can bring the scale and volume needed for meaningful data analysis.

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Understanding the strategic intent of the business is key to defining the modernisation approach.

Strategies are shaped by both external and internal forces. External drivers include competition, markets, laws, taxes, customer needs and technological change. Internal drivers include profit goals, strategic mission and office politics.

In a software-dominated world, flexible IT systems are critical to the delivery of new business initiatives. A clear understanding of future business strategy and organisational goals

are critical in determining the best approach to modernisation.

Experience with some of the world's largest retailers, financial services and healthcare organisations has helped us create a more flexible approach to modernisation that can be customised for your unique business challenges.

BJSS can support an initial needs assessment or help build and deliver a complete IT modernisation plan, from requirements through to implementation.

¹ Forecast Overview: Public Cloud Services, Worldwide, 2017 Update, Gartner Inc.

Q1. WHAT'S THE BEST APPROACH TO MODERNISE LEGACY APPLICATIONS?

Target modernisation with the 80/20 rule.

Whilst there are clear benefits in undertaking the journey to the Cloud, more complex applications may not suit the 'lift and shift' approach, requiring deeper consideration. We find the Pareto principle applies to many organisations, in which 20% of applications typically produce 80% of real business value.

These applications are often the lifeblood of the business and, when part of a monolithic deployment with multiple dependencies, are likely to have been left alone during the initial experimentation phase of Cloud development and migration.

There may be a need to completely refactor the application completely - especially if there are new business requirements to be integrated, or a desire to take advantage of new platforms, Cloud-native services or containers.

APPLICATION REFACTORING

Refactoring: Choose an Agile partner with a history of delivery excellence

Choosing to refactor a legacy application is a major business decision and requires a partner with the capability and experience of efficient, cost-effective delivery. It can be a perfect time to introduce new features demanded by customers and deprecate old or unused processes.

Take advantage of Agile development to re-introduce the most popular features, retire those that are not used, and launch innovative new features for competitive advantage.

For example, a decision to replace an outdated, heavily-customised ecommerce platform with

a new, Cloud-native deployment is no simple undertaking. Delivering enhanced functionality and flexibility requires a proven methodology and capability to deliver results.

Choosing a partner with a history of delivery excellence is an essential first step to success.

OUR APPROACH

The BJSS approach to software delivery: a 'No surprises end-game'

With over 25 years' experience in delivering and deploying software services, BJSS offers the benefit of deep experience and proven methodology to deliver a "No surprises end-game".

Where large capital investments are required to replace legacy applications, it makes good business-sense to seek out expert, experienced partners that can deliver predictable results.

FUNCTION ACCEPTANCE



NFR ACCEPTANCE

BJSS advocates a Feasibility-Discovery-Delivery pattern to de-risk delivery.

However, this should not be confused with traditional 'predictive' lifecycles such as Waterfall. A balance between upfront and deferred discovery must be struck. Charting a clear and steady course is vital during early project phases, but progress must be evidenced throughout delivery, through a process of incremental acceptance.

This is achieved by reviewing delivery at regular intervals and validating the content and quality of the product at each stage. Acceptance is contingent on user needs being met (functional acceptance), that the product performs adequately and can be operated effectively (non-functional acceptance).

APPLICATION MODERNISATION: 5 KEY POINTS TO CONSIDER

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- 1** DevOps and Continuous Delivery techniques enable a unified delivery lifecycle, covering both change and service.
- 2** Where possible, change should be released to users regularly and in small chunks.
- 3** Introducing large-scale change, such as replacing an existing system, requires a risk-reduction pattern, supporting delivery of a Minimum Viable Product.
- 4** The Enterprise Agile® approach incorporates Feasibility, Discovery and Delivery phases, ensuring efficient, predictable delivery.
- 5** Adopting Continuous Delivery via an automated pipeline puts change into the hands of users as required, supporting incremental acceptance.

Payment Cloud Technologies (PCT) offers an innovative product that allows its clients to deliver banking services via the Cloud.

The platform delivers rapid market entry for reliable and robust banking-grade financial services which support any digital portal, including iOS and Android. As PCT's delivery partner, BJSS designed and built the product.

BJSS was selected based on its Queen's Award-winning Enterprise Agile® delivery approach, and its platform agnostic-experience of Cloud services.

A Microsoft Azure-based technology stack was chosen based on PCT's specific requirements. The product includes several WCF-based Microservices that implement business logic and provide access to third-party systems.

Combined with a customer-facing website and over-the-counter APIs, these services are packaged in Microsoft's Cloud Service product and benefit from load balancing along with auto-scaling and self-healing facilities.

A collection of data storage technologies underpin the system. Microsoft SQL Azure stores account records while Microsoft's CosmosDB stores high volume

transactional data leveraging its low latency properties with guaranteed high-availability. A collection of Microsoft Storage Queues connects the Microservices and third-party systems, enabling the system to smooth out peaks in load while remaining responsive. This multi-tenant Cloud-based solution is scalable, secure and flexible, allowing PCT to provide an offering that can grow with its clients' needs.

“BJSS’ understanding of Cloud technology, and the benefits it can bring, were crucial to the successful delivery of our exciting new consumer banking project.”

Rob Liddell
Projects Director, PCT

CONTAINERS: AN ALTERNATIVE APPROACH TO REFACTORIZING

The agility, elasticity and automation needs of the next wave of digital applications are fundamentally changing how, where and by whom enterprise computing is being consumed and managed.

Virtual machines (VMs) and containers serve different enterprise needs, with containers gaining adoption for the Agile development of Cloud-native applications, while VMs remain the mainstay of traditional, monolithic applications.

Containers can help to modernise legacy applications and create scalable Cloud-native applications. Adoption has increased due to their application-oriented method of scaling. Other benefits include being both portable and lightweight.

Container frameworks such as Docker are gaining popularity for software deployment in the Cloud and onto “bare metal”. Like virtual machines, they

guarantee software will run regardless of the host environment but are far more lightweight and resource-efficient in deployment and operation.

While the principles and core technologies supporting containers are straightforward, there are complex challenges in choosing and implementing an appropriate ecosystem for a Production deployment.

KEY CONSIDERATIONS FOR CONTAINER ADOPTION

Our approach to container adoption follows some key principles

- Understand the business strategy and the urgency of the need to modernise.
- Undertake an application review and decide the most appropriate sentence for your application's modernisation agenda.
- For 'harder to move' applications, decide on the most appropriate next step - refactor or replatform?
- For replatform, consider using containers and start with a simple use case as the focus for Proof of Concept development.
- Ensure you capture baseline requirements for security, monitoring, logging and orchestration to avoid lock-in.

- Create a container landing zone and integrate with your existing operations infrastructure.
- Make sure your operations teams are skilled-up or can rely on a support partner while undergoing container adoption.

BJSS has extensive knowledge and experience with containers. As a Docker-authorized partner, we can help in the decision-making process to determine the optimal use of containers and definition of the supporting ecosystem, when moving to full production.

Q2. HOW ARE NEW AND FUTURE BUSINESS REQUIREMENTS CAPTURED AND DELIVERED?

Business demands do not stop while modernisation is underway, so it is vital to define a process to capture any new and future application requirements. One option is to use Cloud-native or serverless computing services.

Serverless computing is actually a misnomer, because servers are employed. However, the provisioning and management of the server infrastructure is fundamentally abstracted from the consumer of the services.

The key benefits of serverless computing are:

- It supports running code without having to operate the underlying infrastructure (e.g. servers, storage and network resources).
- It enables developers to focus on code rather than infrastructure management.
- It can enable easier horizontal scaling, due to the auto-scaling properties of back-end resources.

- It lowers total cost of ownership by drastically reducing infrastructure management costs.

We have seen a rise in adoption of serverless computing for business situations such as the capture of new business requirements, or as a follow up from an initial lift and shift approach, to take advantage of the agility and scalability of the Cloud.

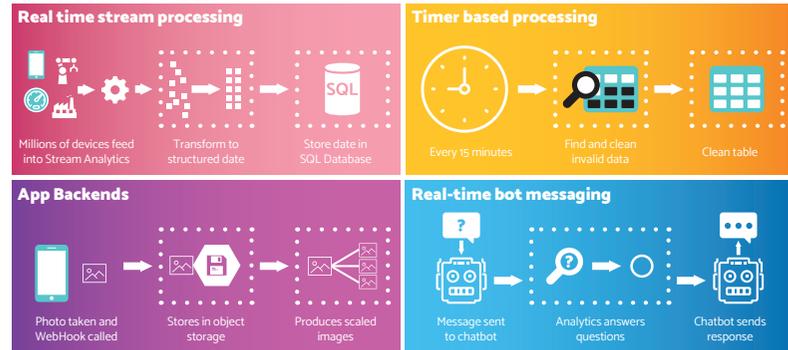
Serverless use cases are ideally suited to any scenario where a process needs to respond to an event.

CAPTURING BUSINESS REQUIREMENTS

How are new and future business requirements captured and delivered?

Common real time stream processing, time-based processing, real time bot messaging and backend processing for web, mobile and IoT events.

Serverless can pose a potential “lock-in” issue, so we recommend building an exit plan at the outset. Identify and quantify the exit costs of proprietary solutions and prioritise services that allow you to swap out proprietary management frameworks and operational tooling.



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The approach for the development of serverless environments is the same as proposed for refactoring. When combined with a highly automated DevOps approach, serverless will also enhance the journey to modern service management. Contrary to popular belief, substantial operational know-how is required to support these environments. It's therefore important to train and empower teams using

DevOps principles and in the intricacies of managing and operating serverless environments at scale.

With our roots firmly in software engineering and with a deep understanding of the capabilities offered by hyperscale Cloud providers, BJSS is perfectly positioned to help organisations modernise using serverless functions.

Q3. HOW SHOULD NEW CLOUD SERVICES BE OPERATED AND SUPPORTED?

Successful digital service provision requires proficient operations support, combined with Agile development and continuous delivery techniques.

Modern Managed Services

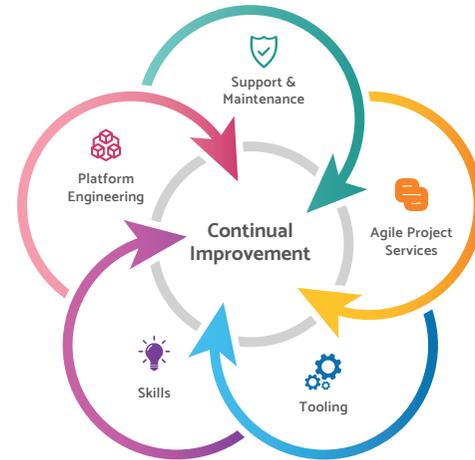
Large organisations have complex IT estates. With significant investments in legacy infrastructure and applications, they often find that their IT services cannot scale to meet business need. Additionally, with the cost and difficulty of retaining skilled staff, and with poorly defined internal SLAs, resourcing requirements often supersede the ambitions to modernise.

BJSS' UK-based Modern Managed Service combines best practice service management with Agile and DevOps delivery techniques to deliver business outcomes. This full end-to-end offering includes service design and take-on, to service management and platform engineering, support and maintenance and future transformation.

MODERN MANAGED SERVICES

Enhance service
management with aligned
development and operations

BJSS Modern Managed Services makes ITSM relevant in a Cloud world. It combines best practice service management with Agile delivery techniques to deliver business outcomes.



Service Management Wrapper

This full, end-to-end offering includes service design and take on, to service management and platform engineering, support and maintenance and future transformation. Development is aligned with Operations to ensure that the service continues to deliver value and return on investment, whilst tailored service management provides the SLA, assurance and governance required for live services.

BJSS has developed a hybrid capability and approach based on existing ITIL principles and helping clients to migrate complex applications to a Cloud platform, often transitioning from ITIL based principles to embed more DevOps and automation to deliver the required agility without degrading the service experience.

EMBRACING DEVOPS CULTURE AND PRACTICE

Embrace the culture and practice of DevOps for enhanced business agility

In the Agile Cloud world, new techniques, skills and operating models are available to support and enhance service team delivery. At some point in your journey, DevOps should be discussed. DevOps is a software engineering culture and practice that unifies software development (Dev) and software operations (Ops).

The main characteristic of the DevOps movement is to strongly advocate automation and monitoring at all steps of software construction, from integration, testing and release to deployment and infrastructure management. A blend of culture, working practices and tooling, its rise in popularity has been matched by accelerated adoption of the Cloud.

BJSS has been at the forefront of the DevOps movement for several years and has rich experience in real-world deployment, at some of the world's largest organisations. We use these principles in our own projects and are skilled coaches in Agile Delivery, Automation and DevOps.

DevOps has matured greatly over the last five years, helping organisations to remove the traditional infrastructure constraints associated with development projects. Platform Automation, Platform as a Service offerings and supplier quick-starts have all contributed to major time and cost savings for application development. But DevOps

and the Cloud have so much more to offer. Increased agility ensures you can get your ideas to customers more quickly, improve product quality through rapid feedback and harness the benefits of a working environment that encourages innovation. Cloud empowers business owners to fundamentally rethink Service Management and Service Operations. Your Configuration Management Database (CMDB) is now Cloud-hosted and updated instantly, your run-book can be fully automated and become part of the Delivery Pipeline, while Product Owners are able to obtain detailed information about who is using their application, where they are and how they are using it.

Serverless and Open Source Technology in Retail

How BJSS helped a leading UK retailer move from a monolithic ecommerce platform to a new, Cloud-based platform.

A leading UK retailer needed to upgrade its ecommerce platform, with the goal of improving the end-user experience and delivering enhanced features. In addition, it wanted to implement future change on a continuous delivery basis, keeping its website fresh and appealing to customers.

At the time, the retailer was running an older, heavily-customised version of IBM® WebSphere® 6.1, which required a substantial upgrade investment. Consideration was given to upgrading to IBM WebSphere Commerce – however, the cost benefit case was challenging.

BJSS was engaged to deliver and prove an alternative, open source solution using serverless functionality. The program from initial Proof of Concept to Go Live took an initial two months for validation, with an additional six months to develop the required features.

Following a successful launch, website improvements are now made on a continuous basis. Today, the website is more responsive for users and operating costs have reduced by a factor of ten.

More importantly, the time taken to deliver improvements has decreased significantly. The ecommerce channel is more responsive and flexible in accommodating change, with the reliance on IBM WebSphere reducing with each incremental delivery.

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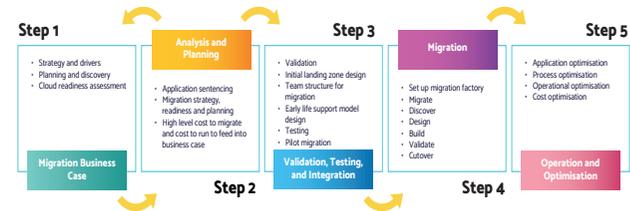
Cloud Readiness

- Cloud Readiness Assessment
- Well Architected Framework Review
- Cloud Proof of Concepts



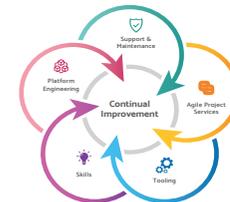
Migration Services

- Application Discovery and Sentencing
- Migration Strategy and Validation
- Migration Readiness
- Operating model design
- Migration Factory



Modernisation Services

- Cloud Native Development
- Refactoring and Containers
- DevOps
- Modern Managed Services
- OpenSource development

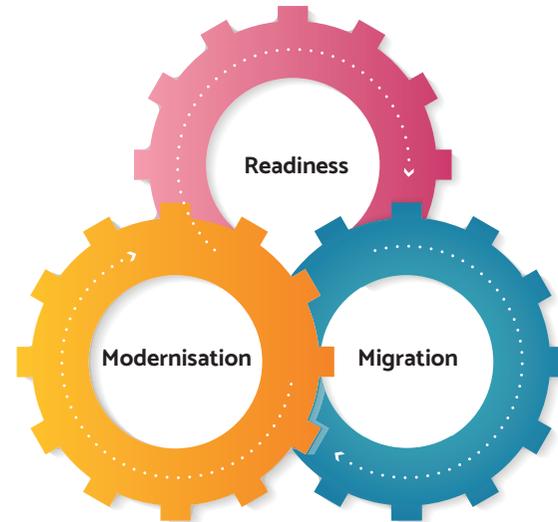


Service Management Wrapper

CONTACT US

BJSS is the UK's largest privately-owned IT and business consultancy.

We work with the world's largest organisations, delivering the IT solutions that millions of people use every day.



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With extensive experience in hyper-scale Cloud deployment, and a suite of enterprise Cloud consulting services, BJSS can assess, develop, optimise, manage and innovate your Cloud platform to deliver business value.

Contact us at cloud@bjss.com to discover how we can support and accelerate your organisation's journey to the Cloud.

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