

BAE SYSTEMS

INSPIRED WORK



Digital transformation

Key imperatives for the connected world

Digitisation is **transforming** how we live and work

Digitisation has ushered in a **connected world** characterised by four major disruptors – Social, Mobile, Analytics and Cloud – which, separately and in combination, are dramatically **impacting** how we live our lives.



Social

Digitisation enables hyperconnectivity: everything is connected. News travels fast and reputations matter.

Highly viral social campaigns amplify opinions whether they consist of great content and inspiring ideas or of ill-advised commentary and stories of poor customer service. Influence over opinions and buying-decisions is increasingly digitally fragmented and socially driven. As well as social channels like Facebook and Twitter, there are many social sites such as Mumsnet and Tripadvisor which consolidate opinions and give both the disaffected and the delighted an equal voice.

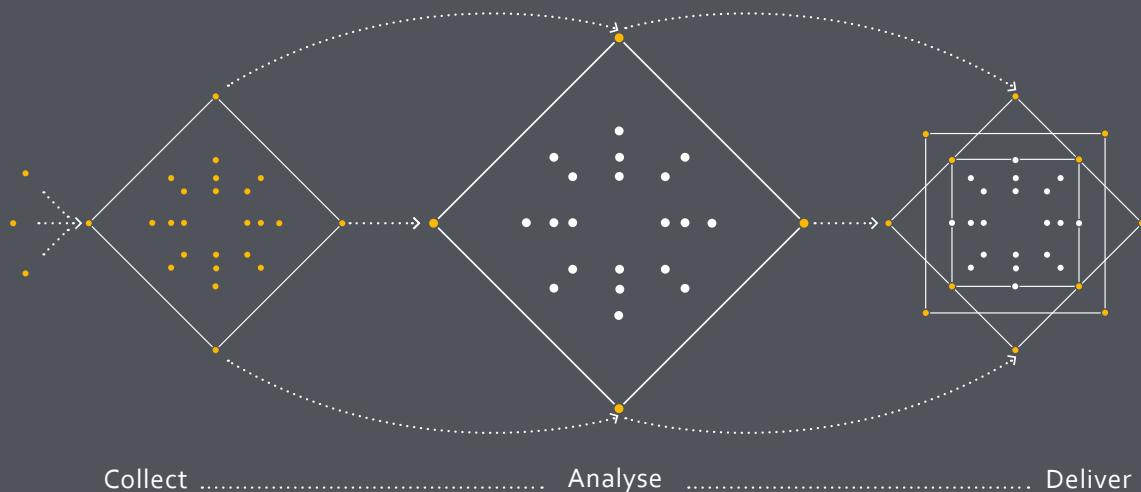
Digitisation is also opening up low cost social entertainment channels. PewDiePie, a YouTube channel showing videos of its creator playing computer games, attracted 27 million subscribers and over 5 billion views by mid-2014, making it the most visited channel and earning it \$4m revenue per year through advertising.

Mobile

Smartphones, led by the iPhone, have completely reset expectations on how we engage with the digital world. We are now used to having a simple, intuitive and powerful computer in our pocket, able to access content, functionality and interaction wherever we are, personalised and location-aware.

Mobility technology is also bringing the Internet of Things (IoT) into reality. Going beyond phones we now embed mobile sensors into objects to access remote status, location updates and control. This is happening everywhere from transportation, infrastructure and industrial machinery to personal and household objects.

The four **digital age disruptors**: Social. Mobile. Analytics. Cloud.



Analytics

While the number of digitally connected things in the IoT is increasing rapidly (4.9 billion 'things' in 2015, expected to be more than 25 billion by 2020), the acceleration in data creation is much greater, driven largely by the growth in embedded sensors and location data. IDC estimates that total data volumes are doubling every 2 years and will reach 44 trillion gigabytes by 2020.

But in 2015, less than 5% of the available data was actually analysed. This is a major opportunity gap. Increasingly, organisations are getting their act together on data analytics and particularly Big Data. By 2015, according to a worldwide Gartner survey of IT leaders, 83% of organizations are prioritizing structured data initiatives as critical or high priority in 2015, and 36% planning to increase their budgets for data-driven initiatives in 2015. By 2017, 73% of enterprises will have invested or have firm plans to

But the skills gap for making good use of the technologies and data still needs closing. According to the same Gartner survey, 30% of respondents called out skills and capabilities as top challenges for big data implementations.

Simply stated, the economic pressures and the competitive opportunities to derive data driven intelligence in near real time to understand preferences and behaviours, improve decision-making and reduce the costs of failure, is becoming overwhelming.



Cloud

Running services from the Cloud dramatically increases their scalability and reach. The cost and time required to stand up a service, make it widely available and grow its capacity in line with take-up, is greatly reduced through virtual commodity infrastructure and universal digital connectivity. Pinterest, a cloud-hosted application for photo sharing and collection, scaled from 50,000 to 17 million users in 9 months.

This capability has enabled an explosion in innovation and experimentation, as return on investment cases now require less upfront investment. With incumbents launching new digital ventures and new players unencumbered by expensive legacy infrastructures entering all markets, competitive landscapes in every industry are changing and becoming far more crowded and less predictable.

Keeping up with the pace of innovation while developing and delivering new services on commodity infrastructures, drawing on legacy architectures and data, is challenging. There are ever greater dependencies on effective systems and services integration and further pressures to adopt open source software and standards. We have been steadily building our experience in using Open Source technologies to help our client transition to the cloud. Our solution independence has enabled us to be really tailor cloud solutions to the client.

This capability
has enabled an
explosion in
innovation ...



The organisational impact is **profound**

Each of an organisation's three primary domains is profoundly affected by digital disruption: their business model, their engagement approach and their core operations. Organisations that are successful in this connected world are ahead of the curve in working out how to take advantage of the digital opportunity across these three domains. Those that fail to get to grips with digital are likely to flounder.

Business model

How any organisation – public or private sector – becomes successful for its stakeholders, such as delivering great services cost effectively, or generating profits.

The core concepts of value and monetisation have evolved. People and organisations' perceptions of what constitutes value or an equitable value exchange are now far more nuanced. Concepts such as privacy, insight, intimacy, trust, allegiance, ease of use, access as well as more tangible assets such as personal data, advice, points of view, can lead to more complex trades and new ways of delivering and realising value. New 2014 social networking service Ello has been winning 35,000 new joining requests per hour through its privacy proposition not to sell its users' information.

This ability to discover, explore and leverage new value trades requires that organisations harness and effectively manage the process of innovation and experimentation. Some organisations are achieving this through establishing separate business units, subsidiaries or innovation hubs that are unencumbered by their parent's legacy infrastructures and processes. They can develop capability using agile approaches and realise opportunities rapidly. Their legacy businesses transform in slower time following their standard release cycles. There are many examples, such as Telefonica, Telstra and NTT Docomo in the telecommunications industry, and Fidelity Investments and Deutsche Bank in financial services. In the public sector, the Government Digital Service is a distinct centre of excellence in UK government, focused on bringing the benefits of end-to-end digitisation to government departments.

Being able to offer innovative business models requires ever greater insight into your own products and services. Rolls Royce's pay-by-the-hour aero engine leasing proposition is enabled by their deep data-driven understanding of the engines' behaviours.



Engagement

How an organisation engages with its customers and users (e.g. citizens for public sector organisations) and other external stakeholders.

With the adoption of digital, there is a proliferation of channels and interfaces through which customers engage with organisations and their products and services, both in the physical world and online. Whether buying, browsing or accessing in-life services, customers expect a cross-channel experience that is consistent, coherent, personalised, intelligent, location- and status-aware and easy to engage with. Organisations that can realise this 'omni-channel' vision can gain a significant advantage over other less connected competitors.

Burberry is an example of how brands with primarily non-digital services can gain competitive advantage through integrating customer experience with the digital world. Their in-store experience is harmonised with their website, they are extremely active on social media, and they have integrated social engagement microsites for customers to post photos and listen to music.

Optimising the customer engagement also means integrating data-driven insight into all customer touchpoints. Effective decisioning determines what is the best possible messaging to display on each and every engagement, whether inbound or outbound, through digital or traditional channels. At that particular moment it may be an offer, some guidance, an apology or something of interest, but it should be informed by the context, experience, preferences and value of that particular customer.

Operations

How an organisation delivers its core functionality.

The pressure on operations to be ever more cost effective hasn't gone away. But there is now added pressure to be increasingly flexible and responsive, driven by the demands of new business models and new customer engagement models.

Operations need to provide the data-driven insight on user, system, network and asset behaviours and preferences to underpin effective decisions. Operations need to digitise processes and drive backend integration and automation to enable cross-channel engagement and cost effective servicing. Operations need to enable the workforce with knowledge management and collaboration tooling to drive up productivity. Operations need to provide the controls that meet the privacy and security demands on organisations' increasing stores of customer personal information.

All these benefits – many of them efficiency gains – still need to be delivered with a background of major investment constraint.

Only by operations being able to cost effectively embrace the challenges of the connected world can organisations realise their true digital potential.

“All industries in all geographies are being radically reshaped by digital disruption — a “digital dragon” that is potentially very powerful if tamed but a destructive force if not.”

Taming the Digital Dragon,
CIO Agenda, Gartner

A **new** approach

Organisations that take advantage of the digital opportunity, delivering impactful and lasting digital transformation, follow the five key imperatives for the connected world.

Inspired: communicate the digital vision

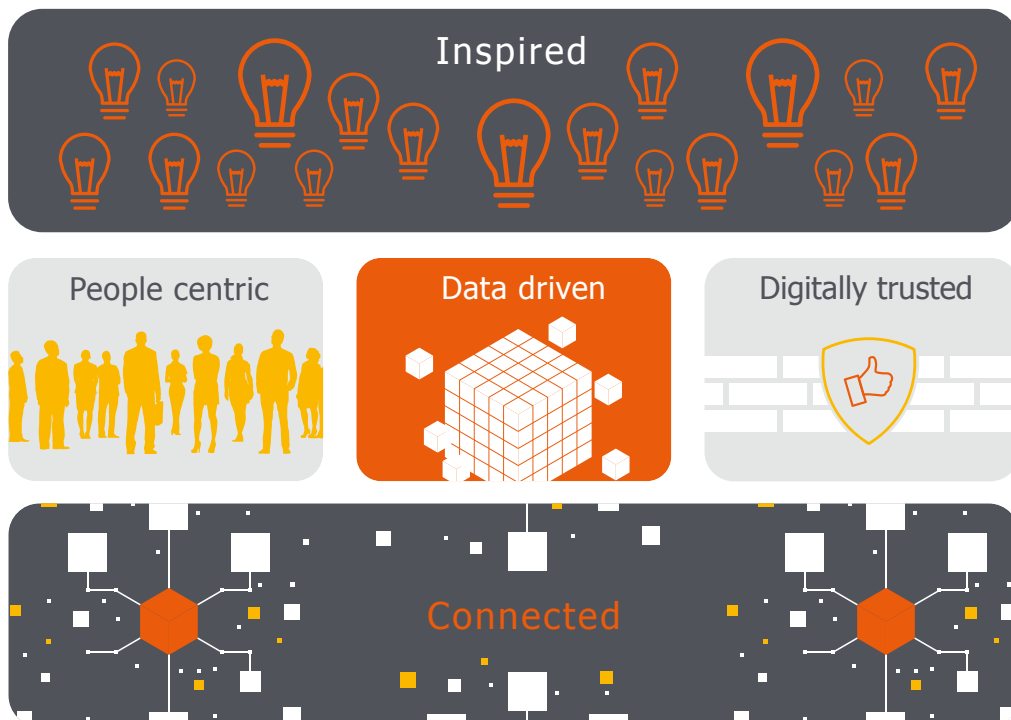
As we've seen, digital change takes place right across an organisation. A unifying vision is needed which enables each digital change to align itself to the organisation's common goal.

However in the connected world things move too fast for there to be a neat, persistent, single 'vision' of the future-state organisation. The digital vision must communicate the concept of constant change, of pace, innovation and experimentation, and how ultimately the customer will engage with this digital journey.

By relentlessly communicating this digital vision, an organisation can harness the capability of its people to achieve its common aim.



Key imperatives for the connected world



People-centric:

Lead with user experience

Interactions are the heart of the digital business, whether it is a customer receiving a service, employees collaborating or accessing information from a system to take a decision. Optimising the effectiveness of each interaction to be intuitive, simple and engaging, starts with understanding the user, their context, their wishes and their journey.

Organisations need to lead with user experience, adopting agile user-centric approaches at all stages of design, development, delivery and operation, to ensure efficient, easy to use systems and processes that maximise satisfaction, engagement and productivity.

Data-driven:

Drive the business with data

Digital actions and interactions create data, a vast strategic asset, holding and hiding new insight into behaviours and preferences of people and systems. Today's technology, skills and computer power enable us to:

- Extract insights and value
- Innovate and experiment through rapid test and learn cycles
- Integrate data sources for new insights
- Take better strategic, operational and front line decisions through contextual, relevant information and insight delivered at the right place and right time
- Derive real operational intelligence.

Drive the organisation with data, innovating and experimenting, to embed insight into decision making, personalisation, proposition development and operational improvement.

Digitally trusted:

Build and protect digital trust

Customers' trust that their data is secure and treated appropriately is critical for the embrace of digital services. Organisations need their customers to trust them, to let them derive insight from their data. But this trust is fragile. If customers withdraw this trust, and the permissions that come with this trust, then organisations can be severely hampered in their ambition to leverage the data they hold. Successful digital organisations build and sustain their customers' trust through:

- Providing effective controls for protecting, accessing and updating their customers' data
- Being transparent about how data is used and demonstrating the value that this brings to the customer
- Not invading customers' digital equivalent of their 'personal space' when leveraging their data
- Incorporating data protection into the customer proposition.

Build and protect digital trust to win the full support and engagement of your customers.

Connected:

Create connections

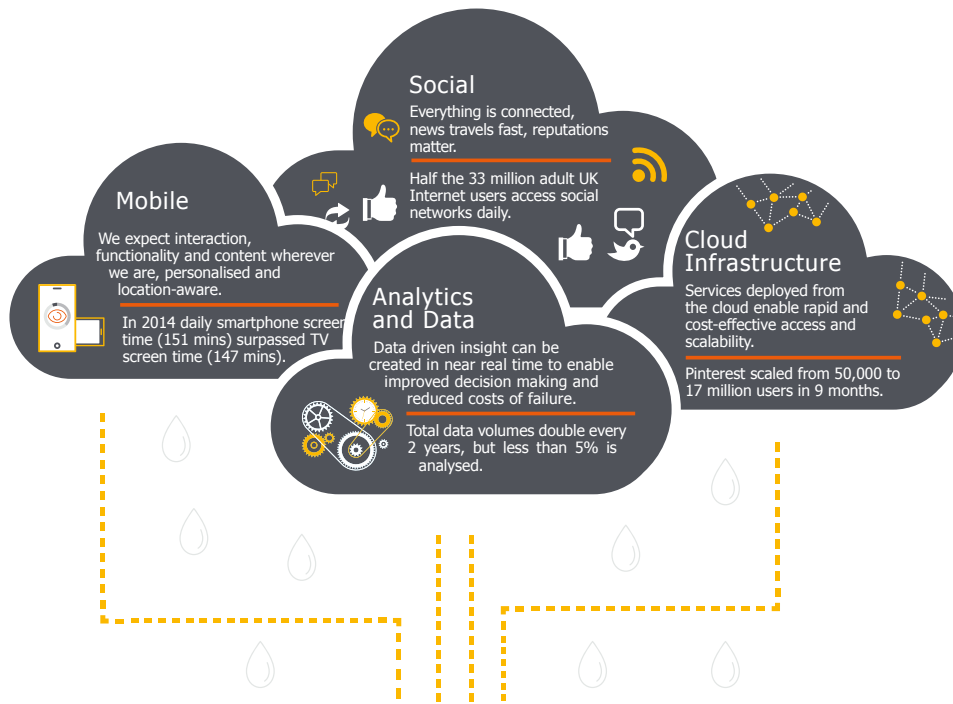
Digitisation leads to customer expectations that everything is joined up: knowledge of the customer, experience across channels, knowledge flowing across the business. However the dichotomy of digital is that digitisation can easily lead to fragmentation – siloed digital initiatives, fragmented supplier bases, standalone new propositions and so on.

Realising the potential of digital requires connection and integration, not fragmentation:

- Define the overarching ecosystem design to govern how connections are made (codes of connection) and how common requirements should be met
- Connect siloed data sources to build common profiles of people and systems, behaviours and preferences, to inform with common insight
- Once proven, ensure standalone initiatives are integrated back into the connected ecosystem and infrastructure to realise full potential and be cost effective.

Create connections across the organisation between data, technology, platforms, services and people to realise the true potential of digital.

Digital disruptors in the connected world



Key imperatives for the connected world

Inspired
Communicate the digital vision relentlessly to harness the whole organisation and embrace pace, experimentation, and change.



Data driven
Embed data driven insight into decision making, personalisation, proposition development and operational improvement.



Digitally trusted
Build and protect digital trust to earn the full support and engagement of your customers.

People centric
Lead with user experience at all stages of design, development and delivery to maximise user satisfaction, engagement and productivity.



Connected
Integrate the organisation, its data, technology, platforms, services and people, to realise the full potential of digital.

Engagement
Personalised, consistent, intuitive, omni-channel, location and status aware experiences for customers, citizens and users.

Operations
Cost effective, insight driven, high productivity, flexible and responsive, privacy and security controlled delivery.

Business model
Innovative, agile and adaptive value creation and exchange with customers, citizens, users and stakeholders.



Primary domains of a thriving digital organisation

Our digital transformation work

BAE Systems helps our clients thrive in the connected world, across all three primary digital transformation domains:

- Their business model, how they make and save money, and deliver successfully against their strategic objectives
- Their engagement model to attract, engage and retain customers and users cost effectively
- Their core operations and asset base to drive efficiency, productivity and effective decisions.

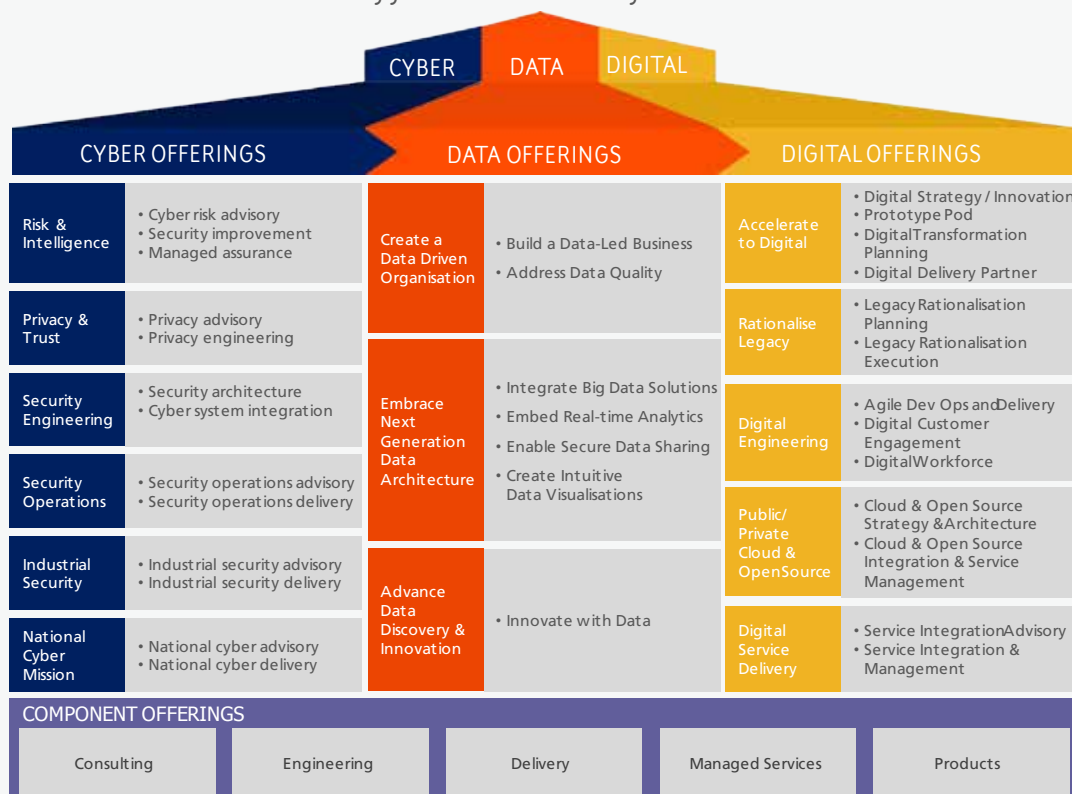
We do this by ensuring our solutions are inspired, people-centric, data-driven, digitally trusted and connected.

- We can reduce delivery lead times and improve speed to market through our prototyping service – delivering fast, accurate proofs of concept in a fraction of the time it would take an in-house development team
- We develop inspiring and evolving digital visions for our customers

- We have integrated leading edge data science solutions into commercial and government organisations for over 40 years. We were early pioneers in deploying big data techniques for our clients' benefit and have helped many organisations manage their data as a strategic asset with effective data governance and processes
- We integrated a multi-award winning digital media agency into the core of our proposition over 10 years ago enabling us to drive a truly people-centric approach
- We bring our deep understanding of security and privacy to help our clients build digital trust with their users
- We deliver complex programmes for our clients to connect and integrate people, data, technology and services.

Helping our clients follow the key imperatives for the connected world, we offer true digital leadership.

Strategy > Advice > Design > Deliver



We are BAE Systems

We help nations, governments and businesses around the world defend themselves against cyber crime, reduce their risk in the connected world, comply with regulation, and transform their operations.

We do this using our unique set of solutions, systems, experience and processes - often collecting and analyzing huge volumes of data. These, combined with our cyber special forces - some of the most skilled people in the world, enable us to defend against cyber attacks, fraud and financial crime, enable intelligence-led policing and solve complex data problems.

We employ over 4,000 people across 18 countries in the Americas, APAC, UK and EMEA.

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