Defining Digital: A Business Enabler for Local Government

Contents

Important notice

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1. The UK local government landscape

Recent times have been exceptionally challenging for local government, with a seemingly endless drive for efficiencies and savings. However, while operational excellence remains top of mind, there are signs of emerging optimism, with innovative approaches paving the way for change.

PwC's annual local government survey, 'The Local State We're In (2016)',[1] for example, discusses the opportunities associated with devolution and the potential for transformation built around digital services and collaboration with partners, communities, and citizens. In addition, public perception and falling acceptance of further cuts has led to more innovative thinking about new ways of working and delivering services.

Empowerment through devolution and regionalisation has opened doors to greater collaboration between local authorities and their counterparts in healthcare, education, police, and the third sector, leading to initiatives such as '**One Public Estate**',[2] which includes joint enterprises involving land, property, and jobs.

The health and social care landscape is also on the verge of fundamental change in response to an ageing population, the increasing burden of chronic disease, the 'worried well', and a predicted shortage of health and care professionals. In England, **Sustainability and Transformation Partnerships (STPs)** call for greater collaboration across health and care economies, and local authorities must be at the very centre of that planning.

We are also seeing innovative approaches to smart cities, with the joint benefits of cost reduction/avoidance and improved citizen services.

However, where digital drives closer alignment between business and technology domains, investment planning must also be reconsidered. Traditional approaches of project-oriented investment, typically funded through an annual capital budget, are no longer sustainable in a digital world. These investments naturally become disconnected as priorities change from year to year. Rather, technology must be led by the business, with investment plans either mapping very closely to or integrated with the business plan.

This paper explores the role digital technology can play when:

- Considered as an enabler
- Informed by the business
- Adopted as part of a platform approach

It also examines various use cases, presents an outline framework for business-technology alignment, and establishes Cisco as a key strategic partner for local authorities throughout the UK. It is relevant to both business and technical decision makers and draws a tighter alignment between the two.

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[1] PwC – 'The Local State We're In (2016)': http://www.pwc.co.uk/industries/government-public-sector/local-government/insights/local-state-were-in-2016.html.
[2] LGA/Cabinet Office – 'One Public Estate': https://www.local.gov.uk/topics/housing-and-planning/one-public-estate.

2. Defining digital: A business enabler

'Digital' is one of those words that become so well used within the technology industry that their meaning becomes confused or blurred. It is often associated with applications or interoperability; at worst, a simple, modern substitute for the term 'IT'.

To clarify, this paper uses 'digital' in the context of business enablement, thus elevating technology into the business conversation and indeed into business planning.

Figure 1.   Digital strategy defined

IT Strategy **responds to** business planning
Digital Strategy is **embedded in** business planning

It is difficult to imagine that any business plan today could be developed without considering the impact that technology can bring. Hence, it is most important to reconsider the strategic approach. Traditionally, a business plan is developed by the strategy or planning department and then passed to the IT team to create an IT strategy. At worst, the IT strategy is developed in total isolation from the business plan. A digital strategy, however, is intrinsic to business planning and effectively builds a bridge to the IT strategy, offering continuity and better realisation of business value (Figure 1).

Of course, many organisations now have a digital strategy, but beyond this important milestone is the process of mapping to the technology domain.
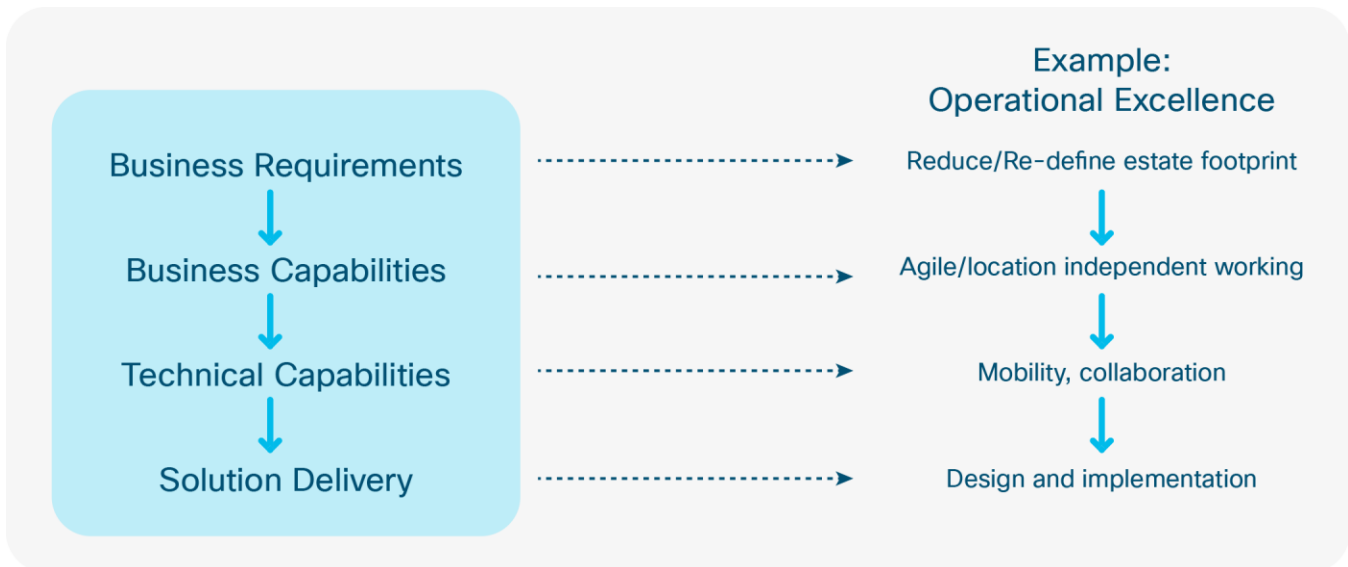
2.1 Capability mapping

Enterprise Architecture (EA) frameworks have been around for a long time. TOGAF[3] and Zachmann[4] are just two examples of popular frameworks and methodologies employed across many industries. Distributed areas of government, such as local authorities and NHS organisations, have been traditionally slower to adopt EA, but that is changing, with more organisations using at least the basic principles of EA in the development of their digital strategies and beyond. Indeed, there are good examples in which local authorities have employed EA principles in the development of digital and IT strategies.

One of the key components of any EA-based approach is the notion of capabilities, which can be seen as the glue between business and technology domains, enabling any use case to be clearly mapped from top to bottom (Figure 2).

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[3] TOGAF: https://www.opengroup.org/togaf.
[4] Zachmann: https://www.zachman.com/.

Figure 2.   Business capability mapping

By mapping multiple use cases across the organisation, one can identify common capabilities. For example, the collaboration tools needed for agile working may also be employed for social care service delivery, or for virtual meetings between agencies.

This approach helps identify platform requirements that can offer capability to multiple use cases, allowing reuse and re-exploitation, for a greater return on investment. In addition, whereas isolated projects often result in siloed technology, a platform approach is by default programmatic in nature, meaning all investments are inherently connected.

As outlined in the introduction, this platform approach requires a different way of budgeting for technology. Multi-year planning necessitates a similar investment plan.

3. A framework for digitisation

One of the key benefits of EA frameworks is the ability to offer a pictorial view. However, it is vital that such messages are relayed in a manner suited to the audience. For example, demonstrating the link between business and technology domains requires a very different explanation for an executive audience than for an IT audience.

In its simplest form, Cisco demonstrates this link with the concept of **plan down, build up**.

Determining business needs is time-consuming and often complex, requiring an understanding of national, regional, and local initiatives and a broad range of stakeholder views. However, with programmatic IT investment, where each step builds upon and exploits the previous one, it is critical.

Figure 3.   Plan down, build up
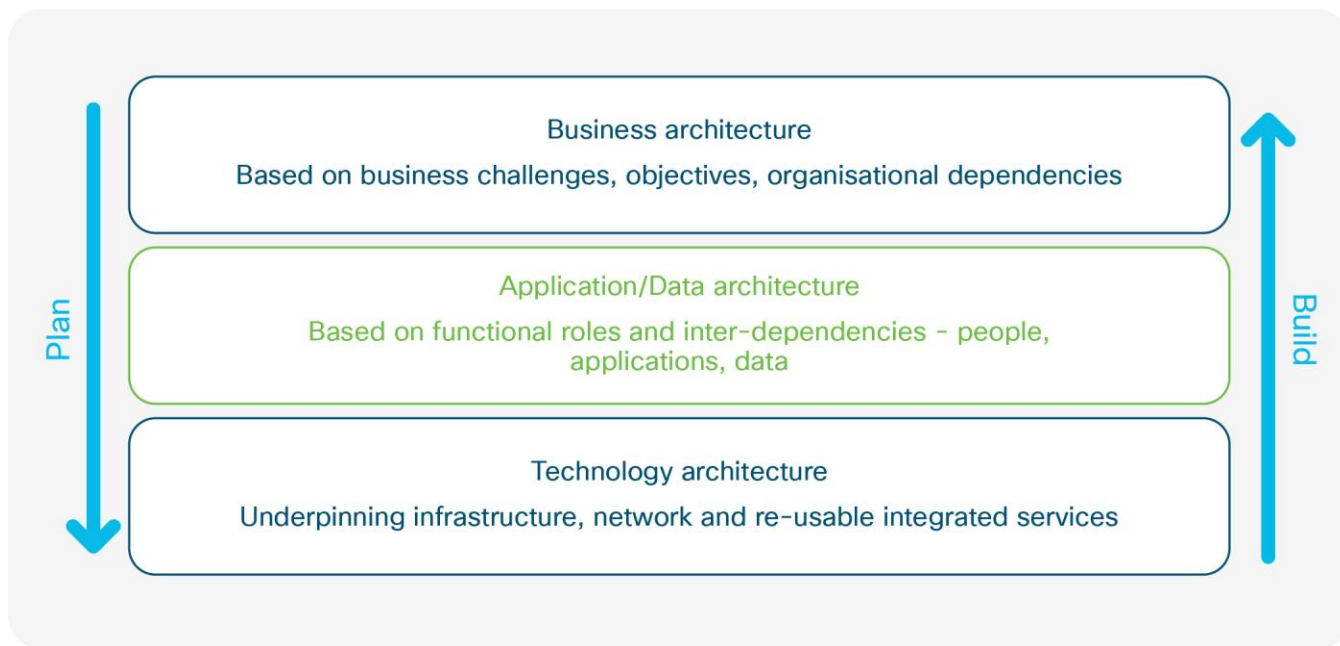
With this concept in mind, we recommend that strategic planning starts with the organisation's business needs and ambitions, together with an understanding of the capabilities needed. Although seemingly obvious, these can easily be forgotten in our highly reactive world.

The 'plan down' phase begins with establishing a comprehensive set of business requirements, from which capabilities can be identified, along with their applications and solution sets. This informs the technology platform, including infrastructure components on which everything else depends.

The 'build up' phase follows exactly the opposite path. It is vital to build a resilient, robust, secure, feature-rich platform for reliable support of applications and solution sets to return business value.

3.1 A layered platform: Underpinning citizen services

The principles of 'plan down, build up' apply to any organisation in any sector. Developing the approach for local government means positioning key business requirements and aligning these to sample use cases and technology solutions.

Figure 4.   A layered platform: Underpinning citizen services
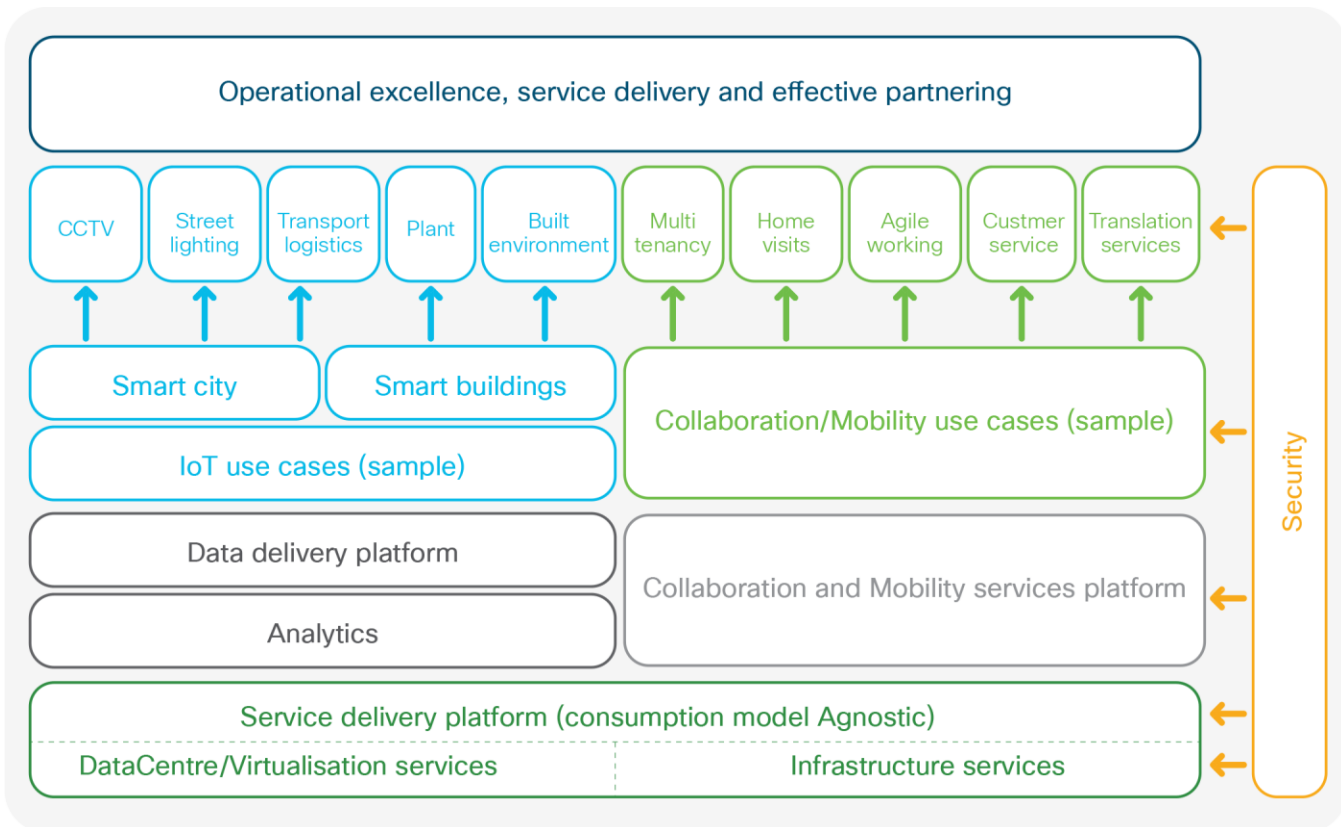
Business requirements are often too plentiful to represent in full. It therefore helps to categorise these findings into priority 'buckets' (Figure 4). For local authorities these will typically include:

- Operational excellence (inward facing)
- Citizen service delivery (outward facing)
- Effective partnering (collaboration within and between agencies).

Use cases are shown in two discrete areas, either user-facing or focused on buildings, cities, and communities.

Further down the stack, we indicate which technology domains or solution sets offer the required capabilities and ultimately show how everything is supported by a feature-rich, resilient infrastructure platform.

Finally, security is intrinsic to every layer of the model. This supports Cisco's premise that security should be considered in a systematic way, from policy and user adherence to the infrastructure's individual components.

Collectively, they should support a 'before, during, and after' approach to security breaches.

3.2 Consumption models

The biggest change in the technology sector over the last decade has been how services are consumed, with a steady shift towards more agile consumption models offered by cloud-based service providers. In addition to greater flexibility and on-demand services, this approach can be more cost-effective and can reduce management overhead as infrastructure is effectively moved off-premises.

Although this model works well, considerations such as service-level agreements and information governance can make some organisations reluctant to make the shift. As a result, the notions of a hybrid cloud environment or a private cloud have emerged, where the advantages of public cloud can be accrued whilst maintaining greater control over information and services.

For example, shared services across healthcare organisations, local authorities, and others would present greater economies of scale and integrated service offerings by default in the shift to regional models under the STPs in England.

Cisco is equipped to support any of these approaches, working with partners to deliver the best possible fit for any organisation and its broader economy.

3.3 Reuse and re-exploitation

Supporting technology in any organisation is often reactive, responding to immediate needs and fault conditions. As such, it can be difficult to step away, consider the broader multiyear business vision, and assess how best to support it. Along with restrictive planning and financing timelines (often fixed-term spending cycles), this often results in project-oriented IT investment.

Whilst these investments may well meet an immediate need or short-term project, unfortunately they become siloed and, by their very nature, disconnected.

Cisco advocates a programmatic approach – investment in a technology platform that is reusable for multiple business needs and use cases. Doing so enables each use case to become connected, as does the supporting technology.

3.4 Investing for the long term

Misalignment between multiyear business plans and, for example, annualised financing for IT is a significant challenge. As we have already stated, immediate needs can result in technology investment being deflected or, worse, siloed and disconnected. At the beginning of this document, we stated that digital should encompass business enablement, and it is clear that business planning and technology investment cycles need to be synchronised.

Investing in a platform requires larger up-front investment, but the re-exploitation of that platform offers not only a greater return on investment but also joined-up use cases. Figure 5 provides a simple representation of the differing investment approaches.

Figure 5.   Project-oriented versus programme-oriented
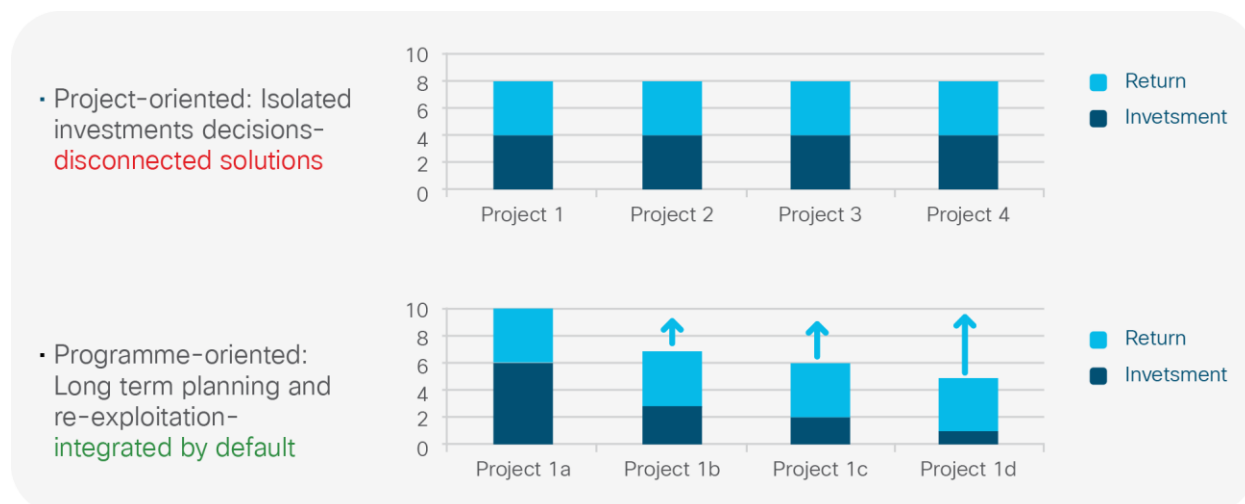
For example, referring back to Figure 4, we show that translation services, agile working, multi-tenancy community hubs, home visits, and customer service solutions can all be delivered from the same collaboration platform. Imagine the alternative, where each project was funded tactically, resulting in different technologies, different vendors, and different partners, with the associated multitude of support and maintenance contracts.

For many organisations, this approach represents a significant shift from traditional models, but if digital is truly to be defined as business enabling, business planning and technology investment lifecycles should be aligned.

4. Digital Network Architecture

So where does the platform begin?

Cisco® Digital Network Architecture (Cisco DNA™) is an open, extensible, software-driven approach that supports your roadmap to digitisation. Moving on from traditional and manual methods of network configuration, Cisco DNA supports a programmable or policy-based methodology. As such, it simplifies network configuration, offers greater agility, and provides new capabilities at the network layer, including:

- Insights and analytics
- Automation and assurance
- Security and compliance
- Virtualisation

Cisco DNA provides the platform for reliable end-to-end application delivery, enables links between policy controllers in the network and data centre, and offers simplified configuration for the collaboration environment (Figure 6).

Figure 6.   Cisco Digital Network Architecture
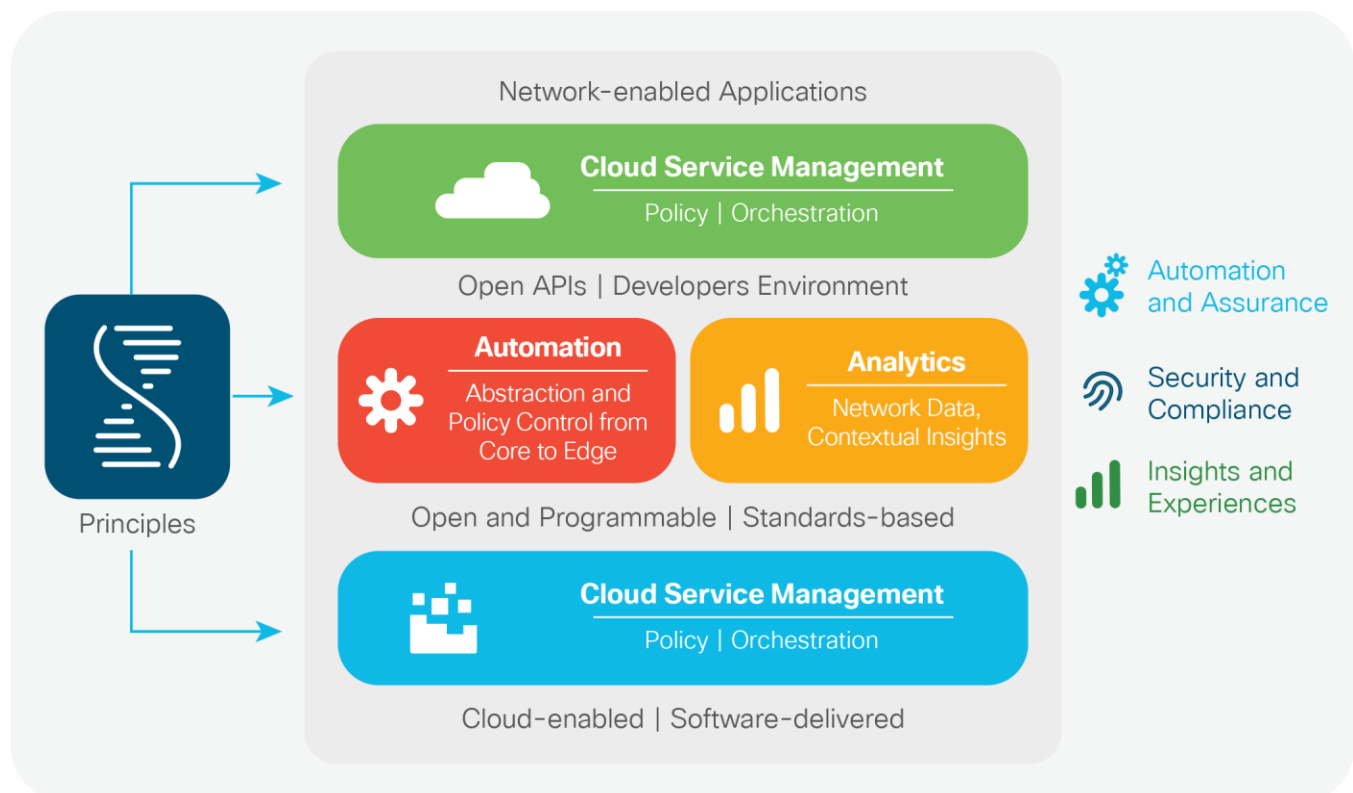
Underpinning all of this is a set of technology domains that collectively form the platform for the digital local authority.

4.1 Enterprise networks

Whilst there are always reactive operational pressures, any strategic technology investment should begin with the underpinning network. Cisco therefore recommends starting with a robust and feature-rich platform that supports the development of incremental capability over time, reviewing the very foundations of the IT environment, and considering networks, whether wired, wireless, or virtual.

Irrespective of the chosen consumption model, organisations will always need both wired and wireless endpoint connectivity to accommodate any device: desktops, laptops, tablets, phones, industrial devices, and Internet of Things (IoT) systems. The network must match requirements as well as applications, and may include local and wide area networks, wireless, mobile, and virtual.

Cisco recommends the following:

- **Simplicity:** Converge wired and wireless networks
- **Management:** Simplify and automate tasks across wired and wireless networks
- **Performance:** Remove bottlenecks with next-generation technologies
- **Branch connectivity:** Identify migration paths beyond PSN (Public Services Network), including the use of the Internet as a transport
- **Automation:** Create policy-based application profiles with automated network configuration
- **Software:** Choose from a range of flexible and portable licence options.

4.2 Cloud and data centre

The data centre has seen much change over the last decade, with the emergence of new consumption models in the cloud and more advanced capabilities. Cisco's architectural approach is based on unification, giving customers the option to run any of their traditional and cloud-native applications on converged and hyperconverged infrastructure solutions, deployed on their premises or in managed and public clouds. This ties Analytics, Simplicity, Automation, and Protection (ASAP)[5] tightly together, with a consistent policy across a hybrid cloud.

Cisco's ASAP components offer:

- **Analytics:** Application and operational performance with granular, real-time visibility, regardless of which data centre or cloud the workload resides on. Increase responsiveness to changes in application behaviours, and remediate anomalies and threats in real time.
- **Simplicity:** Streamline infrastructure with highly efficient compute, storage, network, and security solutions for agile programming, continuous application development, and deployment on hybrid-cloud architecture.
- **Automation:** Integrated analytics and open programmable interfaces that create opportunities for widespread automation, allowing IT and business to respond in real time to application change requirements.
- **Protection:** Mitigate security threats and maintain a compliance model. Create security policies and connectivity requirements that automatically translate into corresponding IT policies and are pushed to necessary devices. Monitor and analyse everything to reduce risk.

4.3 Security

A more connected world has brought many advantages, but it also introduces new threats as organisational boundaries become blurred. At the same time, exploits have become more sophisticated yet also easier to use. Therefore, while the priority in the past was to prevent attacks, a much more holistic and systematic approach is now needed.

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[5] Cisco ASAP for Data Centre: http://www.cisco.com/c/en/us/solutions/data-center/asap-data-center/index.html

To aid in the development of a robust security architecture, it is helpful to consider the progression of a cyber attack as a continuum containing a number of phases, which Cisco calls BDA – before, during, and after an attack.

- **Before:** This is the phase where most security investment is made, and it includes the deployment of defensive capabilities such as firewalls and anti-malware. Defensive controls are very important but are likely to be breached at some point, so investment should be more evenly spread across all phases.
- **During:** Controls deployed in this phase focus on improved visibility, so that an attack can be rapidly identified and mitigated. Network segmentation also helps manage attacks in the 'during' phase and, when implemented properly, can contain an attack to a smaller subset of the network and IT estate.
- **After:** The final phase concerns rapid remediation, together with forensic controls that can help identify how an attack occurred – and which systems may have been impacted.

Cisco's extensive security portfolio can act together to form an effective system during all phases of the BDA continuum.

4.4 Collaboration

The nature of public sector business means that collaboration is an intrinsic part of service delivery. However, collaboration methods are changing, driven in part by consumer experiences.

Cisco offers a range of solutions that deliver high-quality collaboration experiences with business-grade quality, security, and agility, in both cloud and on-premises formats including:

- **Unified communications:** Unified voice, video, data, and mobile applications
- **Customer care:** Personalised, omnichannel solutions for citizen contact and engagement
- **Conferencing:** Well-established tools such as Cisco WebEx®
- **Endpoints:** From IP phones to room-based video systems and mobile, desktop, and web clients;
- **Collaboration:** Internal teams, partner teams, secure persistent chat, online meetings, document sharing, and video conferencing

When considering collaboration, the benefits realised are directly proportional to the number of users. The benefits of application interoperability in health and social care, for example, are well known, but equally important is a consistent collaboration environment across the whole community – for example, the emerging STPs – allowing organisations to benefit from shared buildings, joint commissioning, and care planning.

These capabilities can be equally beneficial in other settings: collaboration with education partners, housing associations, the third sector, and other agencies.

5. Emerging solutions

Cisco can provide advice and guidance in emerging areas relevant to local authorities.

The **Internet of Things (IoT)** and **Internet of Everything (IoE)** are finally a reality and are delivering real benefits to citizens and communities.

Figure 7.   The new information continuum
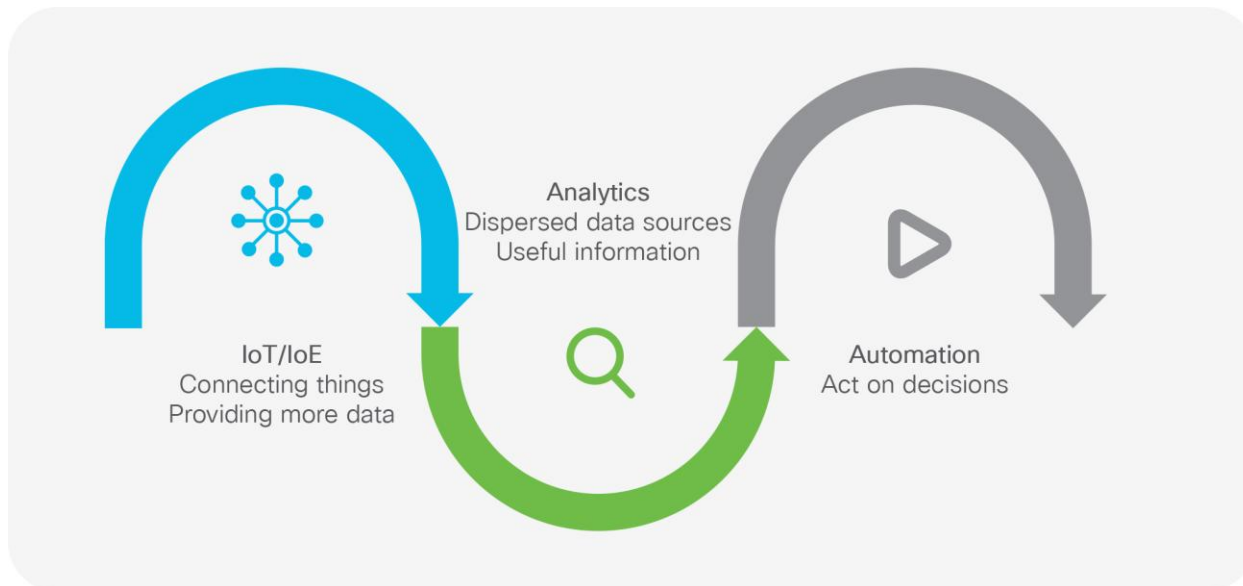
From connected building systems (heating, lighting, plant, etc.) to citizen-facing services such as telecare applications, the ability to connect 'things' results in a wealth of new information. Combined with data from traditional applications, this capability results in more informed decision-making, using **analytics** platforms. Although this is already happening in the IT environment, it is also taking place in other areas of business, such as in telemetry information that feeds into personal health records. These use cases will only increase in number, as will the need for underpinning data centre technology and analytics capability.

The third component is **automation**. As decisions are made, how can outputs be automated throughout the IT environment to deliver business benefits? This is already happening in the data centre, with indirect business impacts such as reduced costs and greater efficiency. It is not hard to imagine it evolving to have greater user-facing impact on staff and citizens.

The final area worthy of mention is **smart cities and communities**. Enabling anytime, anywhere network access encourages community participation, stimulates local commerce, and fosters innovation in city management.

Residents have greater access to city services, training, and job opportunities, while enhanced situational awareness, real-time collaboration, and decision making helps city administrators, first responders, and planners.

Other benefits include:

- Lower operating and capital costs through new efficiencies and smarter resource-allocation decision making
- Economic expansion by providing services that attract businesses and retain talent
- Money-saving innovations in transportation, education, public safety, healthcare, tourism, etc.

While innovation does exist, there are relatively few examples of smart cities at scale. Cisco is closely involved in Manchester CityVerve,[6] a project examining the integration of everyday objects and activities, including transport, healthcare, and energy – all connected by the network.

To discuss any of these emerging areas, contact your local account manager: lgovuk@cisco.com.

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[6] CityVerve: http://www.cityverve.org.uk/

6. Cisco: A strategic partner for local government

Cisco and our business partners have a wealth of knowledge and expertise, both in local government and in delivering innovative technology solutions, meaning we can provide you with reliable advice on how to:

- Develop a digital strategy for your local authority
- Create the right supporting policies
- Devise an IT strategy to define enabling digital technology – and source it

Cisco can, of course, also provide the technology components for your IT service delivery platform: networks, data centres, mobility solutions, and defence-in-depth security – together with a rich suite of communications and collaboration services that can help transform business processes and citizen engagement. Our technology is available through a range of consumption models – whether deployed on your premises or consumed as a cloud or managed service through one of our partners. We also support a range of financing options to make multiyear investment strategies possible, helping ensure the best fit for your local authority.

Finally, Cisco and our partners are renowned for offering the best services and support, from consultancy services that shape your planning and strategy, to product support services for your deployed IT.

We would be delighted to discuss the contents of this paper with you, and advise you on how we could help your local authority. Why not start the conversation now by contacting your local account manager, lgovuk@cisco.com?

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