

# 'Thinking Digitally' about the NHS Long Term Plan

Building the Platform for Health and Social Care Integration

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## Important Notice

**“The guidance provided in this report is of a generic nature and cannot be specific to your organisation or operations. Please contact your Cisco partner or Account Manager to discuss your specific requirements. The guidance is provided in good faith based upon reference materials sourced from the NHS, Department of Health and other Healthcare organisations up to the date of publication. Errors and omissions are excepted. No warranty is given or implied.”**

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# 1. Introduction and Purpose

This is a pivotal time for the NHS. The introduction of the new [NHS Long Term Plan](#) charts a course for the system over the next ten years and beyond. Most observers have welcomed the plan, while others have commented on the re-appearance of many themes. The Prevention agenda for example, has existed since [Derek Wanless' Review](#) in 2004 while Integrated Care is a continuation of ambitions contained in the [NHS Five Year Forward View](#) of 2014.

Whilst that may be true there are a number of new initiatives, and of course it can be argued 'why change course when the route map is correct'. But perhaps the biggest change – certainly since 2004, and even since 2014 – is the capability to achieve these goals. Structural changes, cultural shifts and new partnerships all play a part, but of most importance is the role of digital and the range of capabilities that are now on offer.

So, what do we mean by digital? Simply put, it is a different way of looking at the role of technology. Rather than IT-led investments (which are of course always well-intentioned), 'digital' demands a business-led approach – understanding the capabilities needed before making those strategic technology investments.

As such, it determines that:

- business leaders must be more aware of the potential of technology
- technology leaders should be more cognisant of executive priorities, all of which are key to the delivery of the Long Term Plan's goals.

In this document we examine the role of digital more closely by studying themes of the Long Term Plan and the role that technology can play. It is not however a technical document; rather, it is intended for business leaders across the UK Health and Care sector.

# 2. The NHS Long Term Plan – Themes and the Digital Response

The NHS Long Term Plan charts a course for the NHS and its partners to work together to deliver a more integrated care system. It identifies a number of key themes, some new, some already underway and includes 'digital' as one of those themes.

We believe that digital needs a different perspective – not as a separate theme, but one that underpins all other ambitions whether driving operational efficiencies, improving service delivery and outcomes or simply connecting the whole system together. For example, building out Primary Care Networks, establishing Community Multi-Disciplinary Teams and improving access to care are all dependent on the same digital platforms. Hence, it's our belief that these objectives need to be considered holistically by health and care partners, with informed strategic investment in technology platforms of choice – that return value to all parts of health and care delivery.

In other words, 'digital' should be seen to be intrinsic to business motivation, underpinning all parts of the Long-Term Plan rather than being treated as a separate theme.

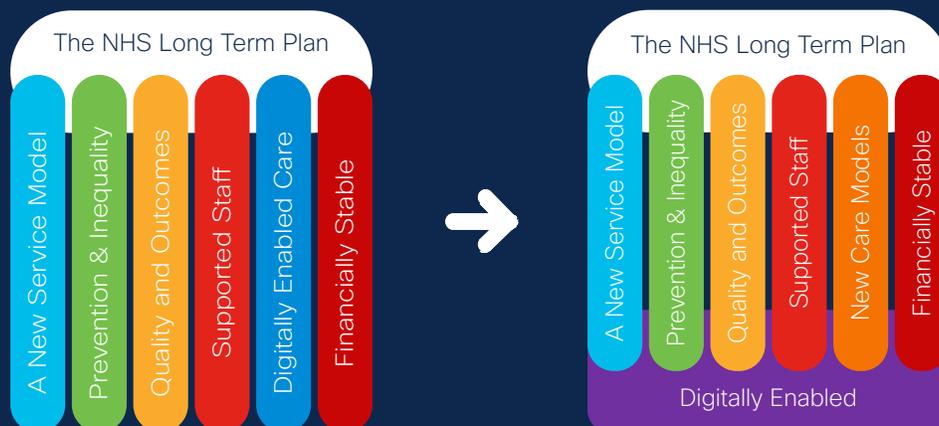


Fig.1. The Long Term Plan

## 2.1 Major Themes

As if to prove the point, let's take a look at some of the major themes and their relationship to underlying technology platforms.

### 2.1.1 Integrated Care Systems

The ambition for every NHS organisation to be part of an Integrated Care System by 2021 dictates a much greater scale of collaboration and partnering both between NHS organisations but also other members of any given community. These include local authorities/ social care, housing associations, Blue Light services and social enterprises.

By its very nature, this drives a demand for capabilities around connectivity, integration and collaboration that can only be delivered through digital technology platforms. Initially, we thought the [Health and Social Care Network \(HSCN\)](#) would be the vehicle to deliver this functionality. Initially setting out to connect communities with further investments that made in the most affordable way, e.g. move to Cloud. Unfortunately, many procurements have gone down the road of 'cheapest first' meaning that the capability to add value is limited.

That said, the network still offers the best way of connecting communities and there are options to deliver overlay networks or capabilities that offer more value or even re-procurement where a sensible and costed business case exists.

Once the infrastructure platform exists, i.e. the connectivity phase, the focus can shift to providing other hosted or Cloud delivered platforms such as Collaboration tools (video, Webex etc.), enterprise grade social software and analytical tools for areas such as population health.

Investing in all of these things with joint procurement across the ICS ensures best value, economies of scale and inherent integration since everything works from the same platform.

### 2.1.2 Primary Care Networks

Multi-Disciplinary Teams (MDTs) have existed for many years across many clinical and care disciplines.

Primary Care Networks (PCNs) aim to exploit that model to improve services across a health and care community. Networks of GP practices will be required to set up bodies covering populations of up to 50,000 patients, working together with community services, pharmacy, the voluntary sector, social care and even hospitals to provide effective, joined-up care for that area.

The clue here is the word 'network'. In order to work effectively as a joined-up team, the PCN will require ubiquitous, secure connectivity with added digital technologies such as conferencing and collaboration software. If deployed across a community that introduces standardisation and ease of use – as well as inherent integration.

Cisco has been involved in many of the most forward-thinking MDT projects in the country and the use of digital technology has proven to improve experience and efficiency. Our belief is that technologies delivered across a region such as an Integrated Care System offers the best integration and collaboration toolsets.

### 2.1.3 Improved Access

Any modern health and care system should provide flexible access to its services and the NHS Long Term Plan has similar ambitions. The Plan identifies this need, inspired by disruptive technology solutions for remote GP consultations. The big question is how can these services - and more - be delivered at scale and of acceptable quality?

The benefits are far-reaching:

- Geographically independent.
- Minimises travel for patients, carers and staff.
- Rapid access to help, e.g. IAPT (Improved Access to Psychological Therapy).
- Telehealth and care settings: knowledge transfer, medicines adherence, telemetry for readings etc.
- More reliable scheduling.
- More patients seen.

So, while these disruptive technology providers have proven a point, it is time to be more ambitious. Improved access means more than just remote consultations.

For example, if a video endpoint or collaboration solution is available for remote GP/patient consultations, why can't it be used for other purposes, such as:

- MDT participation and other joint care planning
- online clinics
- referral decision support
- more informed discharge conversations
- remote translation and interpretation services.

The same principle applies in other settings, for example in tertiary care where the solution could be used for clinician to clinician advice, or follow-up consultations with patients located a long distance away.

Improved access should mean improvements for patients and health and care professionals. But this requires a different way of thinking. It means building a platform of collaboration tools (including video) that is reusable for multiple use cases. As such it is inherently integrated and can become part of a care record.

Cisco has been a leader in such solutions for many years, and our technology has been the platform for several NHS organisations delivering such services. We firmly believe that the setting for collaboration tools

### 2.1.4 Population Health: Prevention and Health Improvement

The Long Term Plan recognises the improvements made by the NHS as a treatment service, but balances this against the relative inaction on areas such as prevention and health improvement. Indeed, it relates to the only modest progress that has been made since 2004's [Wanless Report](#).

At first glance this might not be an obvious area where digital can have an impact. But closer inspection reveals a number of scenarios, both interventional and strategic

Anecdotally, a clinician was having difficulties in identifying the cause of persistent arthritic pain that their patient was suffering. Repeated clinics could treat the symptoms but could not establish the underlying cause. By chance the clinician/patient relationship moved to virtual environment through a remote consultation over a video connection. Immediately, the clinician had a view of the patient's home environment. Due to the poor conditions in their home, which included damp, social services and housing professionals were asked to investigate and seek improvements.

Though realised by happenstance, this is a perfect example of digital technology extending the clinician's view. Rather than the patient continually presenting in a sterile clinic, the health professional was able to see the patient's living conditions, and this supported the care plan

On a more strategic footing, assessment of population health requires inbound collation of data to allow analytical tools to exploit that data and create useful information. Conversely, prevention strategies typically require outbound information flows, distributing guidance out to the wider public and provide advice and guidance on areas such as obesity, smoking cessation and alcohol misuse.

Whether the flows are inbound or outbound, they require underpinning infrastructure that connects all sources of data, as well as the distribution of useful information. This includes connections with councils, housing associations, the third sector and charities. That infrastructure is the network, whether delivered on premise or through the cloud. **This is where it all begins.**

### 2.1.5 Improving Productivity

Efficiency has been the watchword of public sector organisations for a decade or more. Cost reduction and avoidance has been achieved in many areas from the way people work to the way that organisations do business. But of course, there is always room for improvement. Advances in digital technology – both in terms of capability and reliability – have brought new opportunities.

Principally, the main gains are to be made in the way people communicate inside and outside the organisation. One example is bed management:

it is not uncommon for meetings to be held several times a day between numerous bed managers, all descending on a common meeting room. In one case, we conducted an informal time and motion study. It revealed that every bed manager was spending nearly one-person day per week just walking to and from meetings and setting up equipment for the sessions.

Today of course, collaboration tools allow people to work from any location, either desk-based or on the move. This includes the ability to communicate using voice and video while sharing information on screen with added value tools such as annotation – all with a consistent user experience

The same technology can be applied to MDT settings more broadly across the health and care community, remote consultations, interpretation/ translation services, early intervention, standard run-the-business meetings and many more.

Mobility in general has obvious productivity benefits, offering rapid access to information, decision support and the use of smart apps of which there are a wide variety of kitemarked uses. In addition, more pragmatic solutions such as location services provide real-time and cost advantages as well as influence of patient outcomes, given that required equipment can be located more easily. Safety issues such as the whereabouts of medicine keys and temperature monitoring of fridges can also be included.

In summary, productivity should be seen as a collective planning issue rather than concentrating on individual use cases. Armed with the knowledge of efficiencies that can be made across the board, a platform can be built to serve all those known use cases and more as they emerge.

### 2.1.6 The Future Workforce

This is another area where digital might not be foremost in peoples' minds, but experienced NHS staff understand the value of having secure, fast access to information – and for that information to be reliable. Meanwhile, the new generation of NHS employees have grown up in a world that is used to using technology in a much more productive way; this is integral to the way they behave.

The story begins with the devices they use and where they use them. Culturally, this will require a shift towards greater trust in staff to be more independent and flexible in the way they work and where they work from. Evidence from deployment of flexible working technologies has shown significant operational efficiencies, and whilst there are obvious areas where this model wouldn't be appropriate within the NHS, there are also many that are – in particular, administrative functions.

Therefore, offering secure, ubiquitous access is essential – to improve productivity, support new ways of working and reducing unnecessary travel for staff and patients.

Equally important is that the user experience is both consistent and to a large degree invisible.

By consistency, we mean that wherever someone is working across a health and care community (e.g. an ICS), and whatever the device, the user has the same functionality removing the need to re-learn how to use something.

Invisibility means that the very fabric of the network is intelligent – something that we refer to as intent-based. Policy is dictated centrally by the local IT department where users are identified by parameters such as name and role, and access given only to the resources they need or are entitled to. But all of this is invisible to the user, who may move from place to place and device to device, but always maintain appropriate levels of access.

Adding in the role of technology in the workplace – environmental controls, security etc. – demonstrates that digital must be considered as part of any future workforce strategy.

## 3. Strategic Versus Siloed Thinking

As we have said in section 2, it is essential to consider as many objectives as possible when planning strategic investments in digital technology. These include national ambitions and regional modelling as well as locally specific, or organisation-based drivers.

In recent years, a number of niche technology providers have been able to disrupt the market. Various solutions for virtual GP consultations in particular have attracted a lot of interest and have been discussed at length.

As we suggested earlier, whilst these disruptions are welcome in helping people to think differently, it is perhaps short-sighted to think that these siloed approaches can solve the problems of the NHS. A much better way would be to consider multiple use cases for that technology investment, so for example, if a GP has a video endpoint on their desk for virtual GP consultations, then why not re-use that endpoint for MDT sessions, referral decision support, more informed discharge conversations and general business conversations across the ICS?

This leads us to a platform approach. A foundation of digital technology that can be re-used and re-exploited. Platforms are, by their very nature, general purpose and more adaptable to emerging behaviours and requirements. They typically outlive specific applications and can be relied on to deliver ROI for their full lifetime.

This way of thinking will see health and care services not only delivered in a more joined up, collaborative way, but will also maximise returns on investment in technology.

### 3.1 Building the Platform

All of this then points toward strategic planning to identify business motivation, required capabilities and an understanding of what technology platforms can best support as many business use cases as possible.

There are two axes to consider:

1. Three 'buckets' of business motivation:
  - a. Inward facing – operational efficiencies related to workforce and workplace;
  - b. Outward facing – improving clinical and care service deliver for improved outcomes;
  - c. Partnering – working with agencies inside and outside the NHS to build an integrated care system.
2. Applying such business motivation on three levels:
  - d. National
  - e. Regional
  - f. Local.

Each organisation or region is different, but our recommended approach is the same – follow the principles of Enterprise Architecture. Frameworks such as [TOGAF](#) are used extensively in the private sector and are proven methodologies for business-led technology investment.

Such an approach determines which capabilities are needed by an organisation – or group of organisations – and almost by default, encourages integration, re-use and re-exploitation of joint investments for mutual benefit. It also requires organisations to collaborate, share information and think differently.

### 3.2 Re-use 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 multi-year 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.

Therefore, Cisco advocates a programmatic approach - investment in a technology platform that is re-usable for multiple business needs and use cases. Investing in a platform may require larger up-front investment, but the re-exploitation of that platform not only offers a greater return on investment, but also joined-up use cases. The diagram offers a simple representation of the differing investment approaches.

For many organisations, this 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 tightly aligned.

## Project versus Programme Oriented

- Project-oriented Isolated investment decisions - **disconnected solutions**
- Project-oriented long term planning and re-exploitation **integrated by default**

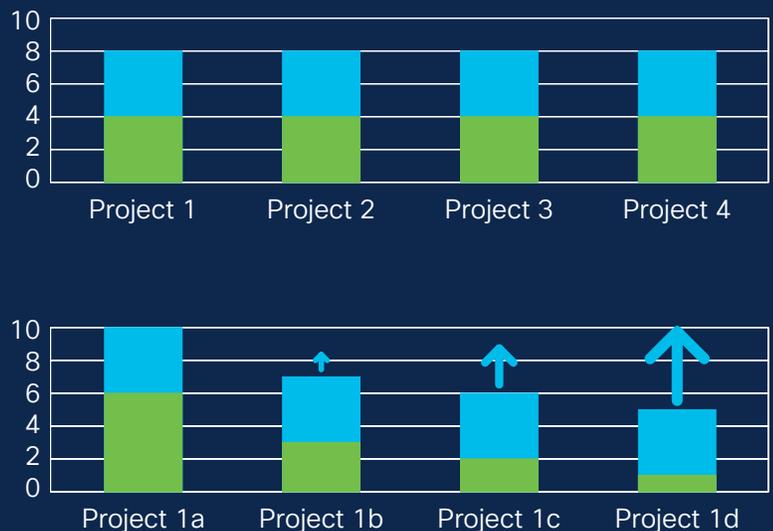


Fig.2. Project vs. Programme Orientation

## 4. Key Capabilities of the Digital Platform

When building a community wide digital platform, there are three main areas to consider:

- Secure connectivity
- Collaboration
- Data aggregation and interoperability

### 4.1 Ubiquitous Secure Connectivity

The most fundamental capability needed is to connect everything – securely. Whilst programmes such as the Health and Social Care Network (HSCN) were intended to deliver this capability, the drive for savings today has in some cases created a race to the bottom.

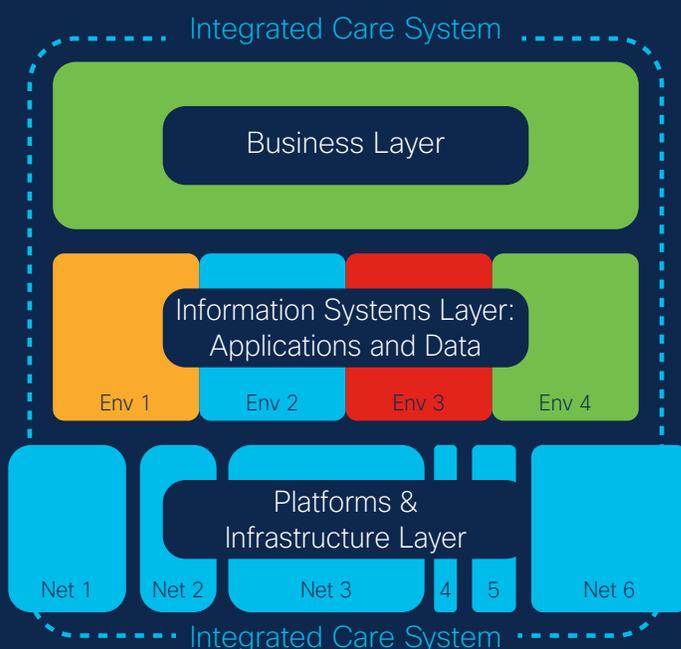
In addition, the design of these networks doesn't match the business community it is intended to support with overlapping or fragmented patterns as shown in the following diagram.

While sites might often be connected, they lack features to deliver intelligence in the network, such as policy enforcement and automation.

Technology developments are rapid and in recent times, new software-defined approaches have abstracted policy from underlying hardware platforms in the network.

This means that administrators can create a unified policy across a network regardless of access methods, and with automation, invoke that policy across the whole networked environment – including security.

These are critical capabilities when networks become far-reaching (e.g. across a community). Our policy engine (known as [Cisco DNA™](#)), works with the hardware components throughout the network, easing administration and providing scalability.



**Unified** strategy: Integrated Care Systems and other regional models.

**Interoperability** driven: Local Healthcare Record Exemplar (LHCRE) and other programmes.

**Fragmented:** HSCN, PSN, legacy COIN models and Internet. Differing scale and scope, misaligned overlapping instances. Commoditised.

Fig.3. An Integrated Care System

#### 4.1.1 SD WAN

In the Wide Area Network (WAN) another emerging technology is disrupting the way in which these networks are architected. New approaches such as [Cisco's SD-WAN](#) solution use the Internet as a transport and are challenging the norm of traditional transport technologies. It supports increased agility, advanced threat detection and greater returns based on the new cost model.

And for scalable, remotely manageable connectivity in smaller sites such as GP surgeries, Cloud-based solutions like those offered by [Cisco Meraki](#) remove the need for local IT expertise while offering features which complement the solutions discussed above.

And of course, new technologies are emerging.

#### 4.1.2 5G

5G is a highly topical subject with testbeds already being planned and deployed in the United Kingdom. It promises significantly higher broadband speeds and low latency and will be an enabler of [Internet of Things](#) (IoT) technology leading to the true realisation of smart cities and communities – intrinsically linked to health and care outcomes.

#### 4.1.3 Wi-Fi 6

Wi-Fi 6 is another emerging technology. Again, promising significantly better access speeds the benefits will mostly, but not exclusively, be seen inside the building. For example, Wi-Fi Mesh technology will enable full building coverage in every room using 'repeaters'. The applications in an assisted living setting are of course obvious. Whilst often set against each other, 5G and Wi-Fi 6 should be seen as complementary technologies offering the best access speeds in any given location.

It's therefore clear that rather than commoditising connectivity today for short term cost savings, investment in intelligent digital platforms will provide a greater return on investment over time, as well as the intelligent benefits outlined above.

#### 4.2 Collaboration

Having created a functional connectivity platform, the next capability needed is effective collaboration. Here, collaboration means the use of digital tools to:

- meet virtually with voice and video
- store and exchange information
- enable a secure, persistent chat facility.

The simplest way would be to build or procure a common platform across the health and care community that offers these capabilities, but in reality, many organisations will have already made significant investments in their own platform of choice.

The options are therefore:

- to provide a centralised system that integrates all others (where standards are met);
- to supplement what already exists with additional capability, e.g. offering persistent chat where the basic telephony service already exists.

At Cisco we will help accommodate all needs where possible, including the option of building on premise, hosted or cloud-based platforms.

#### 4.3 Data Aggregation and Interoperability

The [Local Health and Care Record Exemplars](#) (LHCREs) were created to enable secure exchange of information across a given region. We believe the digital platform described above should be the platform for LHCREs.

In addition, there are further opportunities in the model we describe. By centralising the data environment on a regional basis, data centre estates may be rationalised introducing cost savings. Furthermore, this regionalised approach can lead to the creation of data lakes with inputs sourced from multiple locations/organisations. These data lakes may then be exploited for analytical purposes creating business intelligence supporting areas such as population health management.

Developments in the IoT space are allowing the integration of other sources of information which are directly health and care related, such as air quality and transport. These other inputs will help create even more valuable information and appropriate policy can be invoked, e.g. alerting COPD patients to a poor air quality forecast.

Once again, we see the development of a feature-rich digital platform opening up new opportunities for citizen and patient outcomes as well as cost savings.

## 5. Cisco's 'Whole System Approach' Model for Health and Care

Our vision for integrated health and social care is based upon what we call the 'Whole System Approach' model. In principle, it consists of a cross-community platform of secure connectivity and collaboration that connects all stakeholder organisations and underpins emerging new models of care. The concept is shown below.

The overarching message is one of re-use and re-exploitation of your digital technology investment. The potential for savings ranges from being IT oriented, e.g. de-duplication of Data Centre environments, to operational efficiency with reduced travel time and costs. Inherently connected technology releases integration benefits in terms of access to information and collaboration across health and social care partners, improving outcomes for all.

The depiction of the centralised IT environment is notional. There are several options for the provision of these applications including Private and Hybrid Cloud, along with traditional 'on premise' options.

However, there is also the opportunity to 'burst' to the Public Cloud (and multiple providers), where appropriate and safe to do so. The key is to bring as much of this together as possible into one single management plane. Once established, centralised systems could include interoperability solutions for legacy applications, social software and business intelligence-related data management solutions that support secure, appropriate data sharing.

The benefits accrued from such an approach include:

- Support for one health and care community
- Greater cross-community collaboration
- Agility - location independent working
- Support for self-management and independent living
- Population health
- Estate rationalisation (both built environment and IT)
- Best practice sharing
- Improved citizen/patient engagement
- An agile and consistent user experience.



## 6. Where to Begin

Please contact us to discuss your requirements whether on an organisational or regional basis. We have an experienced team of professionals who have been supporting health and care organisations for 20 years – some with direct experience of working in the NHS and in Local Government.

Cisco is more than a vendor of IT solutions. We also offer consulting services that can support your transformation as you look to implement the requirements of the NHS Long Term Plan. In summary, our approach is to:

1. Understand your organisational or regional business motivation. Consider inward and outward facing issues as described in section 3 as well as the needs of partnering. All foreseeable business needs should be considered when determining what the digital platform should look like.
2. Determine the capabilities that the technology platform must provide to meet business need. Also consider the implications on people, and of process change that may be required.
3. Position digital platforms as well as enabling and impacting technologies that offer the required capabilities. Building the digital platform is critical to the successful delivery of business needs.

### 6.1 About Cisco in UK Healthcare and Local Government

For 20 years, Cisco's dedicated Healthcare and Local Government teams have provided personalised consultative advice and regularly issued guidance papers into the marketplace, advising on a business-led approach to technology investment for both business and technical audiences.

In 2016, we united the Healthcare and Local Government teams, predominantly in response to market moves toward the integration of healthcare and social care, whether through devolution, Integrated Care Systems (ICS) or the implementation of Sustainability and Transformation Partnerships (STP).

Find out more at:

<http://www.cisco.com/uk/healthcare>

<http://www.cisco.com/uk/localgovernment>

Or contact the author: [Mike Badham](#)