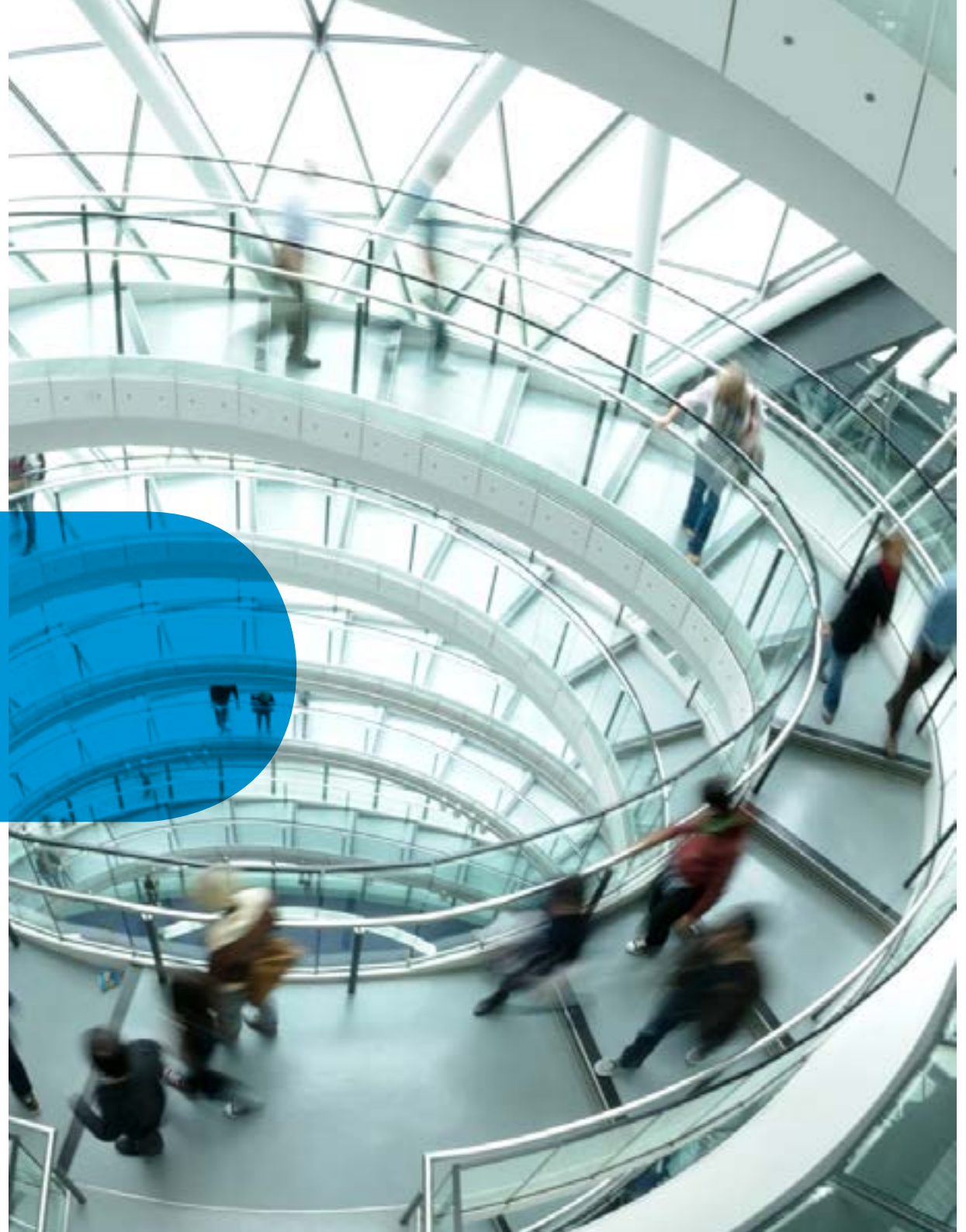# Next Generation **WAN**

Supporting
Local government

Introduction

Local government IT service provision is going through a particularly challenging time.

Difficult times require radical solutions, and Cisco understands the many challenges local authorities face.

Not only are they under constant pressure to deliver new services and keep their current IT infrastructure running as they bring these services online, but they are also expected to provide an increasing range of digital services to citizens while supporting new ways for working for their staff.

Yet as budgets continue to shrink year on year due to the austerity measures imposed by both the present government and the previous administration, one of the biggest challenges to achieving these expectations remains funding.

Ongoing financial constraints are also forcing local authorities make savings in their IT expenditure for example by:

- outsourcing IT services
- using cloud providers such as AWS, Office 365
- running IT equipment beyond their support expiry dates.

Unfortunately, while all these measures can reduce costs, they also introduce new risk. Outsourcing for example, could lead to loss of control over vital services, meaning organisations may not know when their solutions require updating. Cloud services must be monitored and enhanced continually to ensure they do not have a negative impact on end user experience.

And if an organisation's IT infrastructure is not refreshed because its service support has expired, the system becomes susceptible to yet more risk, including security compliance and bugs. It can also render organisations unable to provide new IT services to users.

Local government pressures

Funding pressures

· 40% real terms cut to core government funding over the life of the parliament

· Consistently reducing council tax referendum thresholds

· £1bn cut to local council tax support funding to April 2016

Cost pressures

· Care service reforms (deferred payment schemes, social care cost cap)

· Additional public health duties

· An ageing population

· Increasing costs of concessionary fares schemes

· Pressures on social housing services

· Inflation

Local government
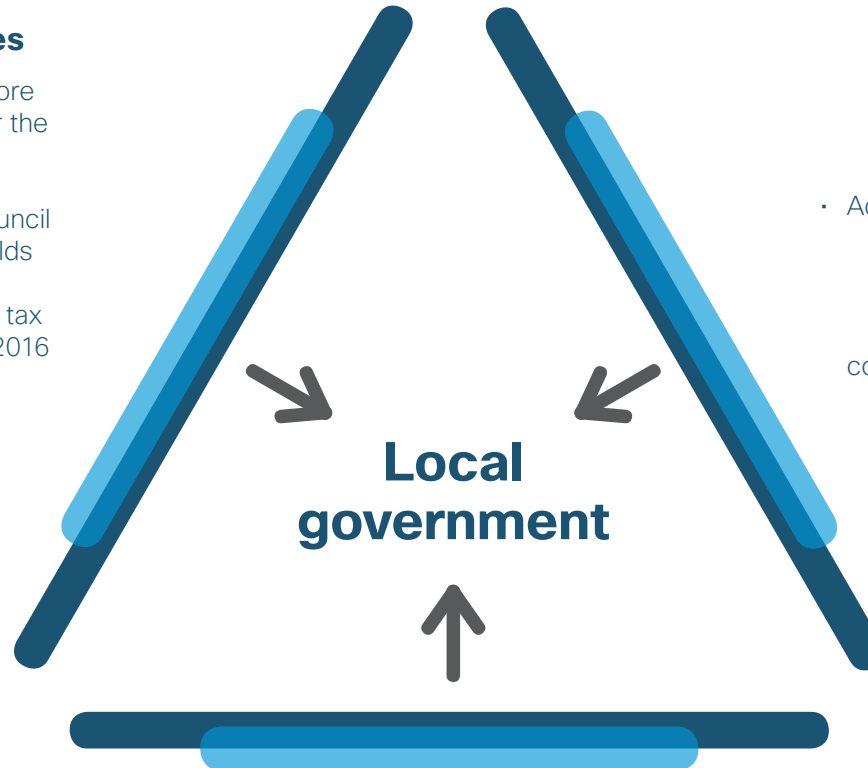
Other pressures

· Business rate appeals
· Welfare reform including benefit cap, social sector size criteria and Universal Credit
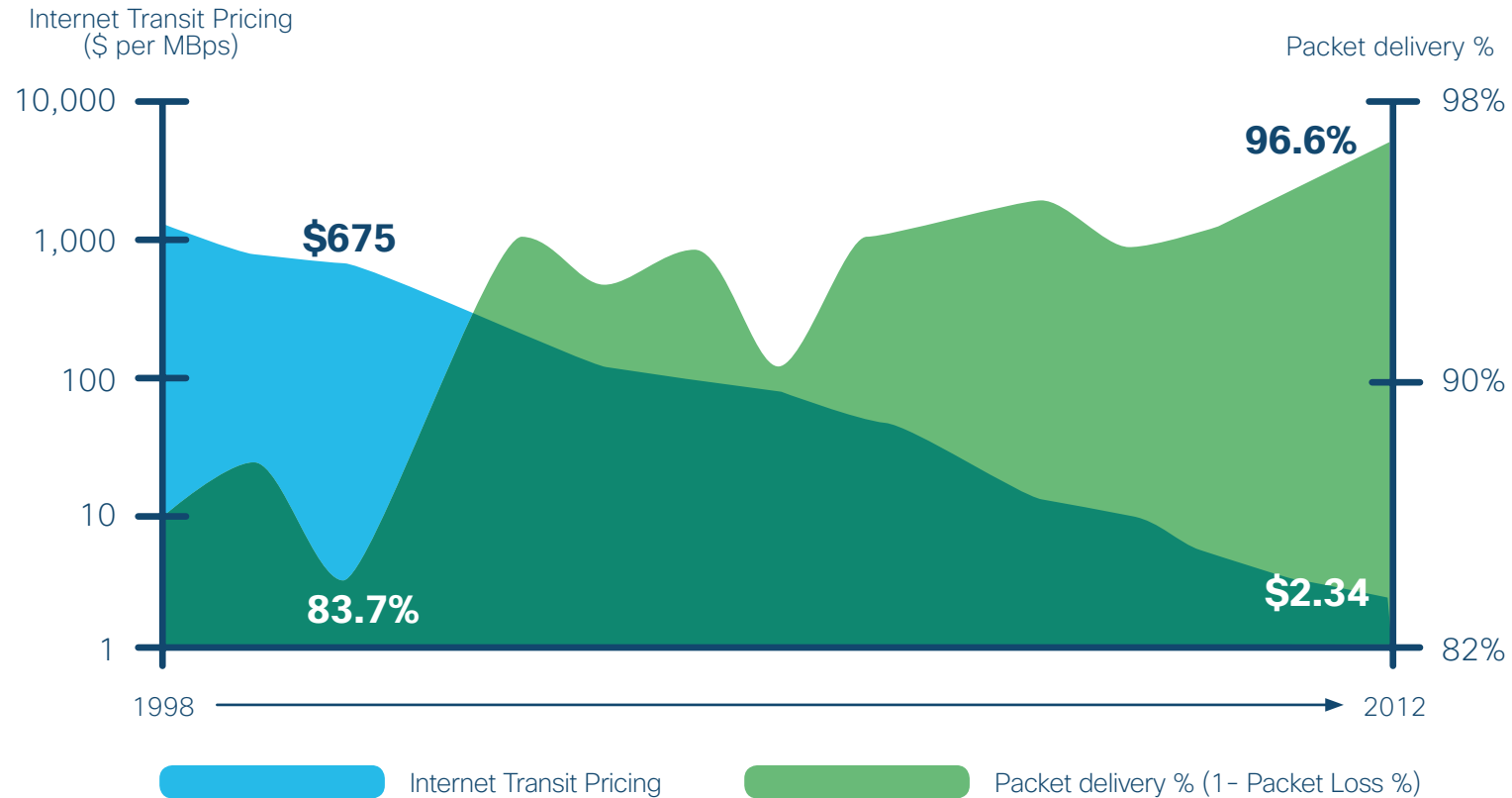· Potential changes to interest rates

Reference http://www.local.gov.uk/documents/10180/5854661/Under+pressure.pdf

Cisco SD-WAN:
delivering innovation while reducing costs

We are dedicated to innovation and constantly review our IT services to ensure they deliver even more value for money to our customers while reducing costs. We also help customers identify how to re-invest those savings to provide new IT service.

For local authorities in particular, Cisco is helping deliver the right IT services, including access to cloud, to facilitate new ways of working and provide digital services to citizens.

Cisco is an expert in Wide Area Network (WAN) innovation and this is our starting point for reducing local authorities' IT costs. Our WAN innovation includes the creation of our Software Defined WAN solution (SD-WAN), which we call Intelligent WAN (IWAN).

Internet pricing vs Reliability, 1998-2012

Internet Transit Pricing
($ per MBps)

Packet delivery %

10,000

$675

96.6%

1,000

98%

100

90%

10

1

83.7%

$2.34

82%

1998

2012

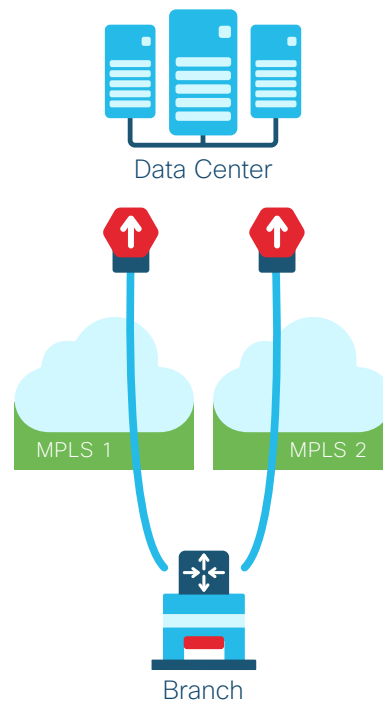Internet Transit Pricing

Packet delivery % (1- Packet Loss %)

Providing Multiprotocol Label Switching (MPLS) across many locations is a costly business that can run into millions of pounds. At the same time, internet access costs have reduced year on year, while reliability has increased.

Cisco has been refining and enhancing its WAN technology, focusing primarily on using the internet as either an alternative or partner technology to MPLS.
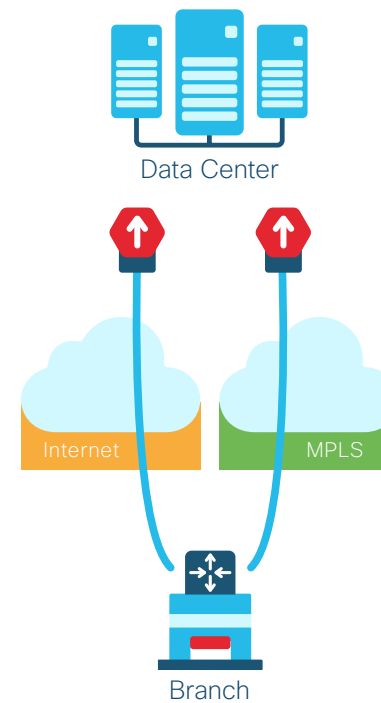
IWAN allows customers to use direct access to the internet, securely and flexibly, and represents a cheaper option than MPLS. Local authorities can also use IWAN in partnership with MPLS, enabling them to provide low cost internet solutions in some locations and MPLS where they need higher bandwidth or greater reliability.

Local authorities can also adopt a hybrid approach, where rather than having two resilient MPLS links to a location, one MPLS link is replaced by direct internet access, either as a backup or as an alternative connection.
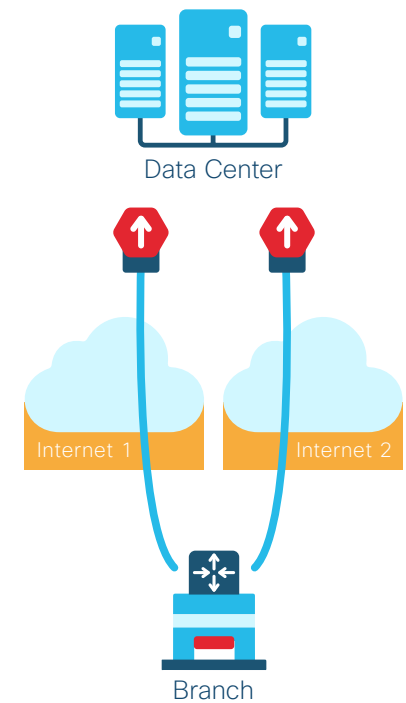
IWAN Dual MPLS

Data Center

MPLS 1   MPLS 2

Branch

IWAN Hybrid

Data Center

Internet   MPLS

Branch

IWAN Dual Internet

Data Center
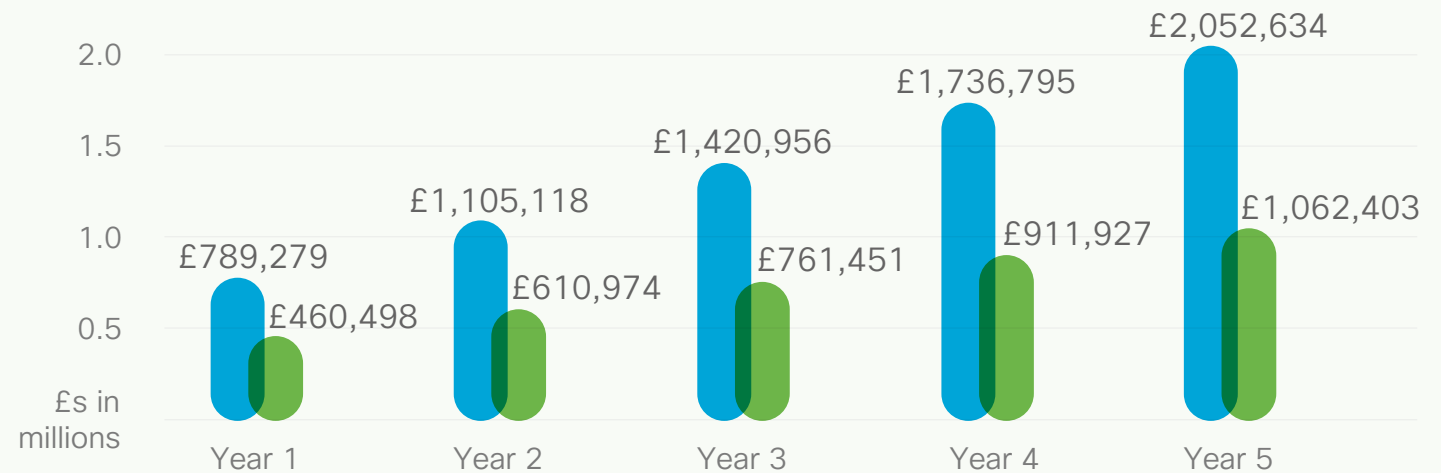
Internet 1   Internet 2

Branch

SD-WAN internet only cost saving

In the following example, Cisco has analysed the potential cost savings from using the internet as an alternative to MPLS. For simplicity's sake, our example has assumed just one connection per site and replaced MPLS with a direct internet connection for all sites at 10mbps. We realise however that some locations will require dual connections, so for sites that require 100mbps, we have included costs for dual internet access.

Local Authority sites: 153
10 Meg Bandwidth sites: 139
100 Meg Bandwidth sites: 14

5 year Costs
Internet vs MPLS

Chart: 5 year Costs Internet vs MPLS (£s in millions)

Year	Internet (blue)	MPLS (green)
Year 1	£789,279	£460,498
Year 2	£1,105,118	£610,974
Year 3	£1,420,956	£761,451
Year 4	£1,736,795	£911,927
Year 5	£2,052,634	£1,062,403

As you can see, the potential financial saving from using direct internet access is considerable: a 46% decrease and nearly £1m over the course of five years. Local authorities could potentially use these savings to update Local Area Network (LAN) infrastructure that can no longer be supported because its support date has expired.

When examining the LAN, local authorities can facilitate new ways of working by providing a more mobile environment for staff that enables hot-desking and collaborative working.

While Wi-Fi is an established and mature technology, it is not usually deployed as the primary method of connecting employees to the internet, but used as a partner technology to the LAN.

Cisco has however evolved its Wi-Fi technology substantially in recent years, with the introduction of Gigabit Wi-Fi. This increased capacity combined with Cisco's ongoing innovation means Wi-Fi is now capable of providing the main route to internet connectivity.

SD-WAN – connecting with local partner organisations

Local authorities understand the value of working in partnership with neighbouring authorities and healthcare providers for collaboration, sharing resources and workspace, while also reducing travel between sites. They know that providing access to applications and resources on a shared IT infrastructure helps staff to be more productive.

However, enabling staff to work in partner organisation sites creates a major technology challenge in terms of ensuring that security levels are maintained.

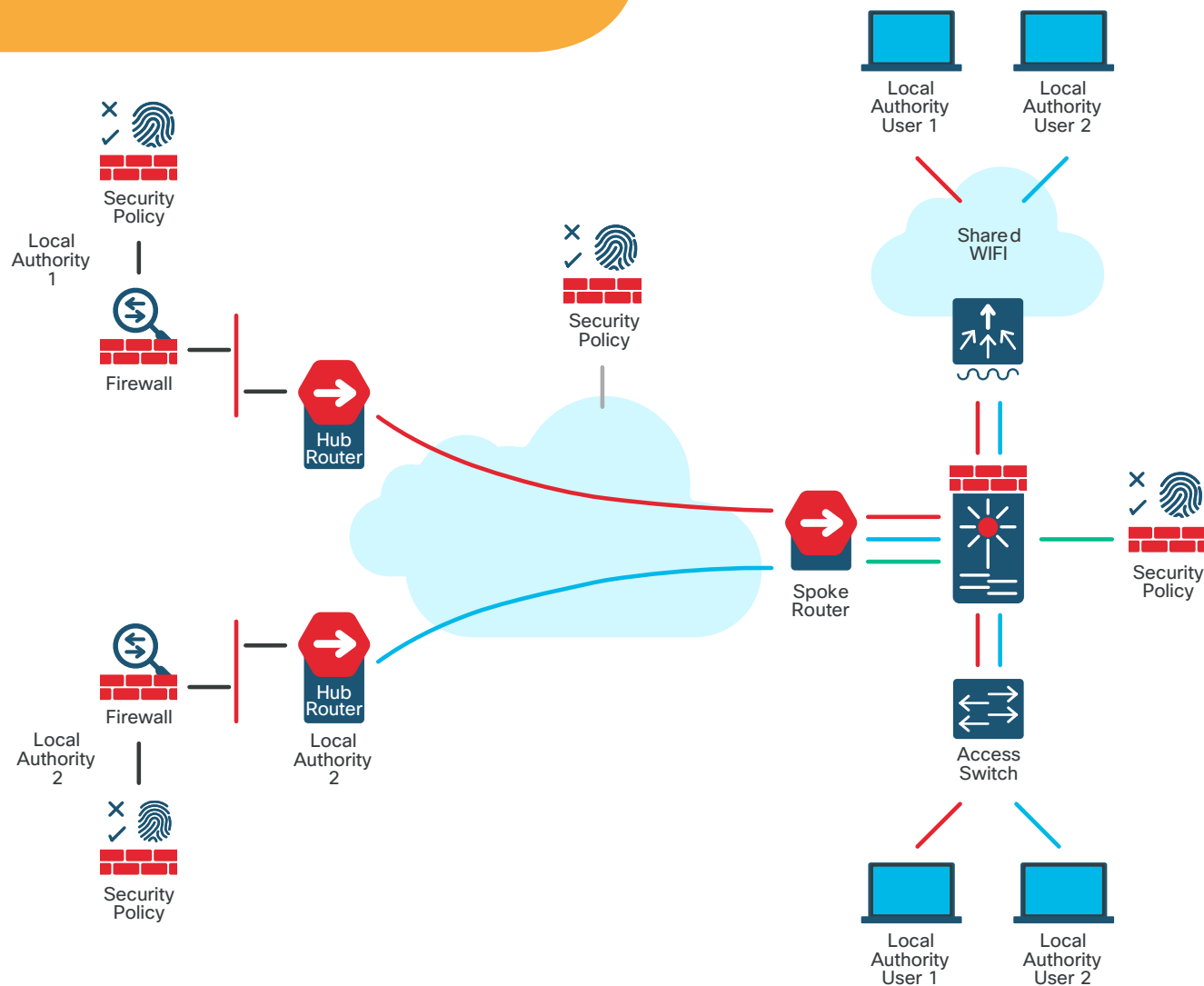Several areas need consideration, including:
- allowing roaming across all local and neighbouring locations
- allowing staff to connect securely
- ensuring the best possible user experience
- the cost of additional VRF requirements from service providers.

The following diagram gives a high-level depiction of Cisco SD-WAN, LAN and Wi-Fi solutions enabling shared IT services to users from various organisations, such as neighbouring local authorities or healthcare providers.

By exploiting the technology features within Cisco's SD-WAN solution (IWAN), network infrastructure and security policy platforms, local authorities can provide a roaming service to visiting staff in a secure and integrated way. Roaming users want a seamless experience, regardless of their location, and Cisco's in-built security enables authentication and securing of all roaming users without any additional user interaction, offering them the same experience as if they were in their own office space.

The trend for health and social care integration also continues to grow. The UK's ageing population means more citizens now require both health and social care services and the demand for complex care will increase.

Security Policy

Local Authority 1

Firewall

Hub Router

Security Policy

Local Authority 2

Firewall

Hub Router

Local Authority 2

Security Policy

Local Authority User 1

Local Authority User 2

Shared WIFI

Spoke Router

Security Policy

Access Switch

Local Authority User 1

Local Authority User 2

The ongoing challenge lies in delivering integrated care services across multiple organisations, all of which are under pressure to continue delivering quality care services with less funding. There are many examples of patients remaining in hospital when they could receive more personalised care at home, which would also increase bed capacity.

Cisco's SD-WAN technology can be used in social housing too. Extending an organisation's network to include social housing locations would result in a seamless experience for housing professionals, and this connectivity could be available to tenants for online job seeking, managing their finances, etc.

In addition, this secure managed connectivity within the home could be extended to other areas, such as access
to sensors to monitor heating or other in-home services.

Flexible access

Cisco SD-WAN provides versatility as an enabling technology that can also help reduce costs, resulting in savings **that** could be used by local authorities to invest in their IT infrastructure for more collaborative working, and connecting with other local authorities and healthcare providers.
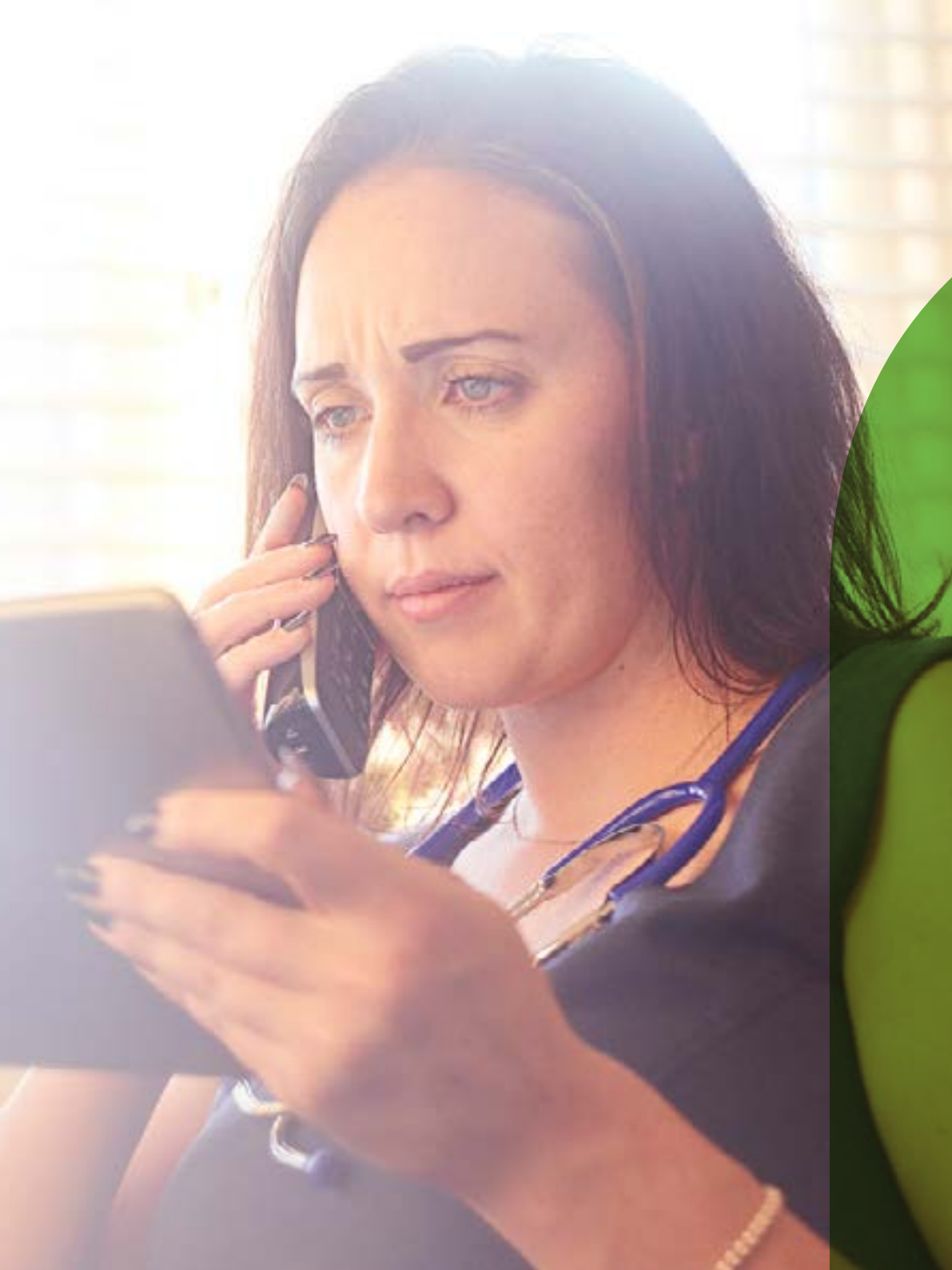
Cisco Easy Pay

For local authorities without immediate funds available to purchase Cisco SD-WAN, our Easy Pay finance leasing solution offers instant access to our innovative technology while spreading the costs over a fixed length of time.

With Cisco Easy Pay, customers pay 90% of the total over a three-year period that is completely interest free, and at the end of the term, users can choose from the following options:

- return and refresh the equipment
- extend their lease
- buy their existing solution at 10% of original cost.

Contact Us

Cisco has a dedicated team supporting our UK local government customers. The team's extensive industry knowledge means that they can identify the right Cisco solution for your needs.

Contact us to find out more about Cisco Intelligent WAN.

www.cisco.com/go/iwan

www.cisco.com/uk/localgovernment