
NORTH AYRSHIRE COUNCIL

11 June 2019

Cabinet

Title:	ICT Infrastructure Strategic Review
Purpose:	To provide Cabinet with an overview of the Council's IT Infrastructure Strategic Review; seek approval for the allocation of funding; and seek approval to proceed to tender.
Recommendation:	That Cabinet (a) notes progress on the Infrastructure Strategic Review; (b) approves the allocation of funding; and (c) approves progression to the tender phase.

1 Executive Summary

- 1.1 The Council's Wide Area Network (WAN), Local Area Network (LAN), Telephony, and Wireless LAN (WIFI) contracts end in Sept 2020. The existing contract has been in place since 2013 and at that time this met the infrastructure needs of the organisation.
- 1.2 Technology has advanced at pace and to ensure our future infrastructure is fit for purpose and meets the demands of today's digital environment, IT Services supported by industry experts, undertook a comprehensive review of the Council's IT Infrastructure.
- 1.3 The Digital Strategy sets out the digital vision and states that "Our ICT infrastructure will enable mobile working and be flexible enough to meet the changing needs of digital service delivery".
- 1.4 The Council's Technology Strategy sets out how technology will support transformational change. It states how our infrastructure must be developed and strategically aligned to the Council's key technologies and approach.
- 1.5 The review of our current infrastructure highlighted:
 - Most internet traffic originates in Schools and is significantly restricted by current connection bandwidths. Internet traffic is likely to grow as a consequence of the implementation of new software and the move to a cloud-based approach.
 - WiFi connectivity is often problematic, especially when moving between rooms.
 - A significant proportion of the existing infrastructure will be end of life by in 2020, risking security noncompliance, no vendor support, difficulties obtaining replacement components and inability to rollout new requirements.
 - By 2025, traditional telephony services will be replaced by more modern and cost-effective Voice over Internet Protocol (VoIP). This represents a paradigm shift for telephony and will give us no choice but to move to this new technology.

- 1.6 Recommendations from the review that will shape our future network infrastructure have highlighted that the WAN, Wired LAN and WiFi should be all be replaced. Replacing the WAN will double the bandwidth and provide direct access to the internet at all schools and libraries. A new WiFi solution will provide increased and improved connectivity.
- 1.7 Telephony recommendations outline that the current System should be upgraded or replaced with a similar solution and deployed across all corporate sites. A new telephony systems in schools should be implemented and where appropriate, mobile phones should be used in place of handsets to support agile/remote working.
- 1.8 Given that a significant proportion of the existing infrastructure will be end of life by 2020 coupled with the pace of change in technology, similar to what we have seen in the last seven years, it is likely that a significant proportion of the Council's ICT Infrastructure will continue to need replaced every five to seven years.

2 Background

- 2.1 The Council awarded contracts for Wide Area Network (WAN), Local Area Network (LAN), Telephony, and Wireless LAN (WIFI) to Capita and Provista in late 2013 and these are coming to an end in Sept 2020 as anticipated.
- 2.2 The Council's Digital Strategy sets out the digital vision, principles and priorities that will support the Council's workforce and customers, allowing everyone to work and learn in smarter ways. Furthermore, the strategy states that "Our ICT infrastructure will enable mobile working and be flexible enough to meet the changing needs of digital service delivery".
- 2.3 The Council's Technology Strategy was approved by Cabinet on 29th May 2018. The strategy sets out the vision, principles and the key technologies that will support transformational change, including Office 365, and the cloud platform approach to business application delivery. Importantly, it states how our infrastructure must be developed and be strategically aligned with these technologies and approach.
- 2.4 The revised ICT Asset Management Plan was approved by Cabinet on the 29th May 2018. This was revised to ensure the continued robust and prudent management of the Council's ICT assets in line with the Council's Technology Strategy.
- 2.5 Industry experts, FarrPoint, were commissioned in January 2019 to conduct a full review of the Council's networking infrastructure, covering WAN, LAN, WiFi and Telephony. This review is now complete, and a summary of the findings are provided.

2.6 Current Position

2.6.1 Wide Area Network (WAN)

Supplied by Capita, the WAN provides connectivity to over 160 Council sites and wireless WAN in 10 locations. The analysis informs us that:

- the Peak areas of use are: 64% primary schools, 67% secondary schools, 72% libraries, 63% corporate.

- Most internet traffic originates in schools but is significantly constrained by current speeds to schools and the Education Scotland internet link at Cunninghame House which regularly peaks at 100% use.
- Internet traffic will grow as a result of Office 365 implementation and Cloud platform adoption.

2.6.2 Local Area Network (LAN)

Supplied by PCM, the LAN estate comprised around 530 devices. The analysis informs us that 90% of the LAN estate is either end of life or going end of life in 2020 and must be replaced to ensure security compliance and continuity of service delivery.

2.6.3 Wireless LAN (WiFi)

Supplied by PCM, this solution comprises approximately 1000 WiFi Access Points which will be end of life by April 2023. Analysis has highlighted that:

- The WiFi estate equipment is no longer produced by the manufacturer and therefore current equipment is being recycled and re-used. Any new demand for equipment will require a new solution.
- The identity management solution, used to authenticate WiFi users, will be end of life in December 2019 and must be replaced to ensure security compliance.
- The solution is designed as an add on to the wired LAN and was not implemented as the primary mode of connectivity.
- BT WiFi branded as Council WiFi is used in libraries and some public buildings.
- WiFi connectivity is problematic with connections dropping when moving between rooms.

2.6.4 Telephony

Supplied and supported by Capita, this solution serves around 1800 users at 6 sites. All other sites are served by individual PBX systems, encompassing over 120 smaller sites and approximately 1,400 extensions. Analysis has highlighted that:

- The Cisco IP Telephony platform will go end of life in 2020.
- Of the existing PBX systems, 61 are supported, the remainder are. It is estimated that possibly as much as 90% of the PBX estate is end of life.
- There are 38 sites that have direct exchange lines (DEL), these are outwith the telephony system.
- Currently around 70 telephony circuits and well over 1000 analogue lines are supplied under contracts with BT and Vodafone and rely on several different technologies. Critically, BT has confirmed that these technologies will be phased out in favour of internet based (SIP) technology by 2025.

3 Proposals

3.1 A number of options were identified as part of the review, this included “Do Nothing” as a base line. These options were evaluated on a cost and requirements basis and as a result, the Network Infrastructure Strategic Review makes several recommendations.

3.1.1 **WAN**

- At corporate sites, the WAN should be replaced by a network that provides, as a minimum, double the bandwidth. This will ensure the highest quality of service and resilience across the corporate network.

- At schools and libraries, the WAN should be replaced by a network that will provide local breakout to the internet and, as a minimum, double the bandwidth.
- Existing internet bandwidths at Cunninghame House and Bridgegate House are retained.
- It is recommended that WAN procurement begins as soon as possible.

3.1.2 LAN and WiFi

- The wired LAN and WiFi should be replaced by an on-premise solution.
- The identity management solution, used to authenticate WiFi users, should be replaced to provide a single solution for authentication.
- The WiFi solution should be replaced at all locations to minimise complexity. However, this complexity will persist until rollout is complete.
- Replacement of the LAN and WiFi will ensure continued security compliance of these components, as well as continuity of service delivery.
- It is recommended that LAN and WiFi procurement begins as soon as possible.

3.1.3 Telephony

- The Cisco Telephony platform should be upgraded / replaced and extended to all corporate sites. Where appropriate mobile devices should be used in favour of Telephony handsets.
- PBX systems in schools and libraries should be refreshed.
- All existing telephone circuits should be replaced and aligned with the WAN replacement as they are interdependent.
- Migration to the new internet technology will yield significant revenue savings estimated at around £184,000 per annum once all circuits have been migrated.
- It is recommended that the procurement process commences as soon as possible.

4 Investment Cost and Funding

- 4.1 The capital and revenue costs associated with the planned investment is summarised in the undernoted tables;

Capital Cost	Total £
WAN	357,100
LAN / Wi-Fi	1,173,000
Telephony	496,693
Total Capital Cost	2,026,793
Current Budget	334,431
Additional Capital Budget Required	1,692,362

Revenue Cost	2019/20 £	2020/21 £	2021/22 £	2022/23 £	2023/24 £	Total £
Current Budget	942,772	942,772	942,772	942,772	942,772	4,713,860
Projected Cost	949,182	913,698	769,736	654,708	665,265	3,952,589
Cost / (Saving)	6,410	(29,074)	(173,036)	(288,064)	(277,507)	(761,271)

The total capital investment cost is £2,026,793. After incorporating existing capital budgets from the current plan the additional capital budget required is £1,692,362. The spend profile will impact across 3 years from 2019/20 to 2021/22. In terms of funding, the initial capital investment will be met from the Capital fund, therefore no additional borrowing requirement and this investment will be paid back over a period of 7 years from the annual revenue savings as outlined in the table above. The annual revenue savings will be generated mainly through the telephony migration and through a single supplier arrangement for the WAN.

5 Implications/Socio-economic Duty

Financial:	The additional capital cost of £1,692,362 will be met initially from the Capital fund with no requirement for additional borrowing and repaid from annual revenue savings over a period of 7 years.
Human Resources:	None
Legal:	Procurement Service and Legal Services will be involved in the tendering process.
Equality/Socio-economic Duty:	There are no direct equality / Socio-economic implications
Children and Young People:	The upgrade of connectivity to schools will ensure faster access to the internet and other services for pupils and teaching staff.
Environmental & Sustainability:	There are no direct environmental or sustainability implications.
Key Priorities:	The refresh of our ICT infrastructure supports delivery of the Councils Digital and Technology strategies; and support the efficient delivery of the priorities within the draft Council Plan 2019-24
Community Benefits:	The upgrade of connectivity to libraries and other public buildings will ensure faster access to the internet and other services for members of the public.

6 Consultation

- 6.1 The strategic review process included a review of technical and business documentation and a series of interviews with representatives from Information Technology, Transformation and Customer Services.
- 5.2 A report was presented to the CPAG meeting on 25th April culminating in this report to Cabinet.

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Background Papers

None