Astley Community High School and Whytrg Middle School
ICT Equipment Survey Overview

Introduction

This document provides an overview of the legacy ICT for Astley Community High School and Whytrg Middle School, produced by Nexus Associates in partnership with Northumberland County Council (NCC). The purpose of the on-site legacy ICT survey was to validate the ICT equipment currently deployed within the two schools and to gather an overview of age, condition and whether this equipment is suitable for deployment and re-use throughout any possible future developments.

This document is to be read in conjunction with the report provided for each school and the supporting Appendix 1.

- ICT Survey - Astley Community High School v3
- ICT Survey - Whytrg Middle School v3

As both schools are currently situated on the same site, they currently have a joined ICT network and share resources and facilities where possible.

Nexus was tasked to assess the current ICT hardware, passive equipment and operating system environments within both schools to assess their suitability to be decanted and installed within a new school environment, and to ensure that a supportable platform can be maintained. When assessing ICT equipment as suitable for reuse there are various factors involved in the assessment.

A few of these are:

• Current Condition

• Age

• Suitability for use in an upgraded network (if this is the case)

The operating systems on ICT equipment are normally supplied as part of the equipment procurement process and are installed on the devices prior to installation. This type of software is routinely updated by the manufacturer to ensure the security and smooth operation of the device and applied to the by the network manager. There will come a time in the equipment and software lifecycle when a change in software may require a change in hardware for the software to operate normally.

It is recognised that the best practice lifecycle for replacing ICT equipment, subject to specification is as follows:

- 3-5 years for desktop computers.
- 2-4 years for Laptop and mobile devices.
- 5-6 years for AV equipment

Photocopiers and printers, due to their nature, tend to have a longer lifespan and replaced as and when necessary, due to either failure or change in school requirements.

End User Devices

Desktop Devices

The two schools have a combined quantity of approximately 365 desktop devices.

These desktop devices are from a range of manufacturers and are of a variety of form-factors, age, specification and condition. No new desktops have been purchased for teaching and learning or admin use in the last 5 years, and the majority of which are old windows computers re-imaged to utilise ChromeOS. Subsequently these devices have no warranty or associated support documentation available.

The desktop computers used in all the ICT rich teaching areas are a mix of Windows 7 and ChromeOS and aged between 2009 and 2014. 30no of which were re-furbished 2014 machines purchased in 2019.

Due to the age of the desktop devices we deem these devices unsuitable for decant into a new school environment.

Mobile Devices

The two schools have a small number of Google Chromebook's for student and staff use. Purchased over the last 3 years.

The condition of the Chromebook's is good. The Google support and updates will continue for the devices, and those that are in a good condition should be suitable for re-use.

• ChromeBook Lenovo 300e G1 – Supported until June 2025

• ChromeBook Lenovo 300e G2 – Supported until Jun 2026

• ChromeBook Acer C731 – Supported until Jun 2022

• ChromeBook Dell 3180 – Supported until Jun 2022

There are approximately 38no Apple devices all of which are over 5 years old and nearing the end of their usable life. The software and hardware support from Apple have also lapsed. Therefore, due to their age we deem these devices unsuitable for decant into a new school environment.

The school have a small number of windows laptops available for staff use. All of which are over 5 years old out of manufactures warranty. Therefore, due to their age we deem these devices unsuitable for decant into a new school environment.

An excel spreadsheet containing ICT device information for Astley Community High School and Whytrig Middle School has been issued as a separate document to this report titled 'Appendix 1'.

Network Switching

Core

No true core switching infrastructure is deployed across the two schools. Instead, 4no edge switches providing a centre point to the network, located in the server room and providing connectivity to the servers and edge switching.

The "core" switching is based around 3no HP 2530 (J9775A) and 1no 2810 (J9022A) edge switches. The end-of-sale date for these switches was August 2013. After this date, the products become obsolete from a support aspect. Operational and security updates will cease to be developed for the switching leaving the hardware open to unwanted vulnerabilities.

Therefore, the "core" switching solution currently installed for the two schools is not suitable for reuse in the new building.

Edge

The edge switches installed throughout Astley Community High School and Whytrg Middle School are not suitable for decant into the new building. This solution is made up from several different manufactures varying in age and capability. These comprise of a variety of NetGear, Cisco SF series, Cisco Small Business, HP 2500, 2600, 2800 series switches. To re-use any of these is likely to cost more in integration services, and long-term support than the supply and install of replacement hardware in the new building.

It's important that a switching infrastructure is of matched models to ensure good level of service and support, and to minimise support costs.

Therefore, the edge switching solution currently installed for the two schools is not suitable for reuse in the new building.

Audio Visual Equipment

Classroom AV (ceiling projectors)

Most of this equipment is 5-years or older, with some dating back to 2006. Much of the classroom audio-visual hardware is reaching the end of its useable life.

The AV hardware is not suitable for decant into a new state-of-the-art building and should be replaced to ensure the best quality solutions are available for teaching and learning. Many of the projectors have faded images due to aging bulbs and given the increased natural light in a new building, this would have a detrimental effect on the perceived image quality of the projectors. Many of the projectors do not have modern connections (e.g. HDMI) which prevents direct compatibility with up-to-date laptops and desktop computers. Interfacing of 'ceiling mounted' projectors into new builds, with the construction makeup of the ceiling can prevent the successful decant and installation of ceiling mounted projectors. Ultra-short throw are the only recommended projectors for use, if projectors are required, but image quality and brightness is important to ensure quality of teaching and learning. New buildings often have a far greater quality of light and can wash out the projection image even further on aging projectors. Also, with decant costs often quite high for relocation of projectors due to the work involved, and risks of bulb damage from relocation, it often isn't cost effective for aging hardware.

Any future project should look to replace this equipment with new LED flat panel screens, this also takes any risk away of the common failure of projectors when they are decanted, also ensuring the project is delivered on-time.

A list of the long-throw projectors can be found at the bottom of the excel spreadsheet containing the ICT device information for Astley Community High School and Whytrig Middle School and has been issued as a separate document to this report titled 'Appendix 1'.

Servers

2no VM HOST servers are rack-mounted, and both located in the server room located in Astley Community High School. The servers are in warranty until August 2020. And therefor no "end of life" announcement has been issued for this hardware.

The servers are supported by 1no HPE MSA 2040 SAN. An "end of life" date of January 2018 was issued in 2017. Support for this product ends April 2023, after this date HPE support for HPE MSA 2040 ends.

The existing server hardware has warranties that will expire during the lifetime of the project. The existing servers appear to be suitable for re-use in non-essential systems or in a non-production environment. We would recommend that extended warranties are procure for the existing server and SAN infrastructure. Validation needs to be undertaken by NCC and the two schools that the server infrastructure is able to support the increased load and demands that will be placed on the hardware within any new facility. We would expect that existing servers be replaced by new server infrastructure as part of the Schools investment and refresh cycle.

Wireless

The wireless solution installed throughout Astley Community High School and Whytrg Middle School is manufacture by Meru Networks and consists of a single wireless controller support by 24no AP122 Meru wireless access points.

From 2016 Meru Networks was acquired by Fortinet making support and security updates for older equipment difficult to obtain.

The 24no AP122 access points are 802.11ac wave 1 (Wi-Fi 5) although this is still a wildly used ratified standard, it's now been replaced by 802.11ax (Wi-Fi 6) and any new establishment should base its wireless and wired infrastructure around the Wi-Fi 6 standard.

Decanting the 24no AP122 into any new establishment would likely leave a shortfall in the numbers of access points required. Obtaining Meru AP122 access points is not possible due to the age of the device and Fortinet acquirement.

Therefore, the wireless network solution currently installed for the two schools is not suitable for reuse in the new building and any new establishment should look to design the wireless system on the latest ratified wireless standard, that currently being Wi-Fi 6.

Printers and Multi-function Devices

The desktop and MFD printers are under a leased agreement with Total Business Group.
The desktop printers have little planned obsolesce and see no reason that these can't be decanted

and re-used in any new establishment– subject to any local failures with individual devices. It is recommended that the locations and quantities required are reviewed and use the opportunity of any new build to drive printing to the larger MfD's and minimise deployment of desktop printers, which typically have higher running costs.

Multi-function devices, where they are part of a lease agreement, will be relocated in full cooperation with the maintenance provider, Total Business Group.

Telephone System

The system is based around 47no Cisco SPA504G Handsets, cloud hosted by Gamma Horizon. The hardware is owned by the schools and maintenance agreement is due to expire in July 2020 with the option to renew.

Cisco announced end-of-life for the handsets in December 2019. June 2020 is last date that Cisco may release software maintenance releases or bug fixes. After this date, Cisco will no longer develop, repair, maintain, or test the product software.

With Cisco dropping software support from June 2020, after this date, support services for the product are unavailable, and the products become obsolete from a software support aspect. Operational and security updates will cease to be developed for the handsets leaving the hardware open to unwanted vulnerabilities. We therefore do not recommend decanting the phone system to any new future development.