

# Network & Systems Design Lifecycle Replacement Planning

## Overview

School systems have large quantities of computing equipment that encompasses end-user devices (tablets, laptops, desktops, etc.) to servers, storage devices, universal power supplies (UPS), UPS batteries, and network equipment including wireless access points, switches, routers and firewalls. In the school environment, computing equipment also includes classroom technology: interactive or static classroom displays, cameras, microphones, sound systems, ceiling speakers and amplifiers, presentation remotes, webcams; security equipment and building automation including security cameras, public address systems and clocks, and access control, etc. Often, the initial purchase of these devices is through a capital investment project or one-time funds without a plan for sustainability and replacement. The useful life of these devices is between three and five years, depending on the device.

School systems must develop and implement a structured lifecycle replacement approach to ensure that computing equipment is removed from service at the end of its useful life. A core goal of the lifecycle replacement process is to maintain functionality, security, and productive support for learning and administration through a plan to acquire, track, support, and decommission hardware.

In establishing an equipment lifecycle, it is also important to plan replacement cycles close enough together that aging equipment can still interoperate with newer equipment. Waiting too long between lifecycle replacements can result in technology gaps where old and new systems do not function properly in the same environment.

## Establish an Equipment Lifecycle

In order to manage the lifecycle of disparate computing devices it is important to understand what the viable lifespan of a device is and environmental factors that may influence or impact projected lifespans. Establishing an equipment lifecycle for the school system is a collaborative effort that will require the participation and support of essential personnel such as the Superintendent, Business Director/COF, Curriculum Director, Building Principals, etc.

## Lifecycle Recommendations

A recommended lifecycle for computing devices can be broken down into three- and five-year replacements based on device type. Most devices will fall in the five-year replacement range. These recommendations are based on industry averages and the collective experience of the CoSN SEND initiative members.

### Three-year lifecycle

One-to-one devices, including tablets, laptops and browser dependent devices, generally fall within a three-year replacement lifecycle because these devices are highly mobile, subjected to bumps and drops, have small components that heat up and wear out faster than desktop devices, and have limited vendor support beyond three years. However, a four-year lifecycle may be viable with the recognition that productivity on these devices may decrease in the last year of deployment.

### Five-year lifecycle

A five-year lifecycle is generally considered to be viable for servers, storage and network equipment, and most classroom technology equipment. For servers and storage devices, a five-year lifecycle is adequate to ensure these devices remain under vendor support. This also ensures the equipment is covered by warranty while in service, and upgraded timely to the next operating system level. For network equipment, a five-year lifecycle accomplishes the same results as for servers and storage devices and aligns with the Erate funding cycle.

Most classroom equipment will last five years. Any devices a school system plans to run on a longer lifecycle should be evaluated for continued effectiveness.

When planning and establishing an equipment lifecycle, it is important to remember that equipment life can be shortened by extreme circumstances, such as high heat, low temperatures, and small children's daily transport. Equipment that is located in areas without temperature control will need to be replaced more frequently than the standard lifecycle.

## Inventory

The next step in creating a sustainable lifecycle replacement model is to develop and maintain an inventory of computing equipment. The inventory is essential for building a replacement plan and determining where the challenges lie in supporting a sustainable computing environment. A usable inventory should include the following elements:

- Equipment type (laptop, server, switch, etc.)
- Date purchased
- Data support ends
- Operating system (if relevant)
- Scheduled replacement date based on the established equipment lifecycle
- Device ID
- Serial Number
- Inventory Tag Number

## **Budgeting for Replacement**

Once the school system has an established replacement cycle and an inventory to inform the scope of equipment in use, this information can be used to align the technology budget with the lifecycle. It can take an organization several budget cycles to fully move to a managed lifecycle. Ideally, the managed lifecycle is structured so that the organization replaces one third of all three-year lifecycle devices and one fifth of all five-year lifecycle devices each year.

Because many organizations have had large capital purchases, it is important to plan early in the process for spreading out lifecycle replacements across several budget cycles. For example, an organization that made a large one-time purchase of tablets and laptops to respond to the pandemic should plan a lifecycle replacement of those devices that goes across two or three years and brings those devices into a sustainable replacement cycle.

In developing the replacement cycle, organizations should also consider how to adjust the lifecycle replacement if there is an interruption in the process. For example, an economic crisis that results in a year where no replacements can be completed. Identifying a strategy for addressing these kinds of interruptions and agreement and understanding of the long-term impact on the organization's teaching, learning and productivity is a conversation to have before there is a crisis. That should also include an understanding of the cost of failure to replace equipment on schedule which includes loss of productivity, loss of access to key resources necessary to support school services, increased support and help desk costs, and increased security risks.

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### **About CoSN:**

CoSN, the national association of school system technology leaders, believes that technology is an essential component of learning today, and is deeply committed to the use and distribution of technology in school systems. However, all technologies must be properly assessed for design and appropriateness in the modern classroom. Educators and companies alike must recognize and uphold their responsibilities to protect the privacy of student data.

Working together, educators and the private sector serve millions of students by providing them with the rich digital learning experiences and access needed to succeed in college, work and life. That partnership is critical to ensuring that students will have the tools necessary for success in the 21st century.

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