FY2022 REPORT ON SOFTWARE ASSETS AND HARDWARE ASSET INVENTORIES

COOK COUNTY BUREAU OF TECHNOLOGY

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ASSET INVENTORY AND STRATEGY

CONTEXT FOR REPORT

Cook County Ordinance 16-3977, "Performance Based Management and Budgeting" requires preparation of a consolidated report on Software Assets and Technology Hardware Asset Inventories.

The Bureau of Technology manages some or all information technology assets for the following offices and agencies: Cook County Assessor, Cook County Board of Review, Office of the Chief Judge, Clerk of the Circuit Court, Cook County Clerk, Cook County Forest Preserves, Cook County Health and Hospital System, Offices Under the President, Public Administrator, Cook County Public Defender, Cook County Recorder of Deeds, Cook County Sheriff, Cook County State's Attorney, and Cook County Treasurer. To have full context for the information contained in this report, it is necessary to understand how asset inventory information is compiled. The CIO oversees some countywide hardware and software asset procurements, but Elected Offices have traditionally handled their own.

BOT IT Asset/Service Matrix					
BOT Provides:	Computers	Microsoft / Adobe Licenses	Servers	Cellular Devices	Landlines
Assessor	None	Some	Some	All	All
Board of Review	All	All	All	All	All
Chief Judge (incl. JTDC)	Some	Some	Some	All	All
Clerk of the Circuit Court	None	Some	None	All	All

County Clerk	None	Some	Some	All	All
Forest Preserves	All	Some	All	All	All
Health and Hospitals	None	Some	None	None	All
Land Bank	All	All	None	None	All
Offices Under the President	All	All	All	All	All
Public Administrator	All	All	None	None	All
Public Defender	All	All	All	All	All
Recorder of Deeds	None	Some	Some	All	All
Sheriff	None	Some	None	All	All
State's Attorney	None	Some	Some	All	All
Treasurer	None	Some	Some	All	All

ASSET STRATEGY

In the wake of the COVID-19 pandemic, thoughtful and strategic procurement of information technology assets has become more important than ever before. Information technology has allowed for Cook County to transition to a largely remote workforce with little reduction in productivity. Remote work has required greater collaboration and automation of processes and increased leverage of existing software platforms for virtual collaboration, for example the creation of documents allowing

for e-signatures via DocuSign and the newly ubiquitous use of Microsoft Teams as a video conference platform.

Security concerns are a primary consideration when procuring technology assets given the growing sophistication of cyberthreats. The Bureau of Technology routinely implements hardware and software upgrades to maintain the most up-to-date security patches. These upgrades help prevent successful cyberattacks and subsequent costly data breach remediation.

Product lifecycle, or the amount of time from technology implementation through use and eventual decline, affects not only information security but also employee productivity. The current computer and server lifecycles recommended by the Budget Office are six years. All Bureau of Technology enterprise software license procurement contracts are drafted to ensure perpetual upgrades and full support of the manufacturer.

SOFTWARE INVENTORY ASSESSMENTS

The Bureau of Technology manages the procurement of enterprise licenses for Adobe and Microsoft products. Elected Offices and the Cook County Forest Preserve are then charged-back for their portion of licenses. Procurement of licenses on an enterprise-scale helps reduce costs and improve efficiency. The enterprise software license inventory is measured annually through a true-up process that helps reconcile assignment of licenses. Cook County's largest software asset is its collection of Microsoft Office 365 (O365) licenses. O365 refers to a suite of office productivity desktop products including Outlook (email and calendar), Microsoft Word (word processing), PowerPoint (presentation slide decks), Teams (collaboration), and Excel (spreadsheets), among others.
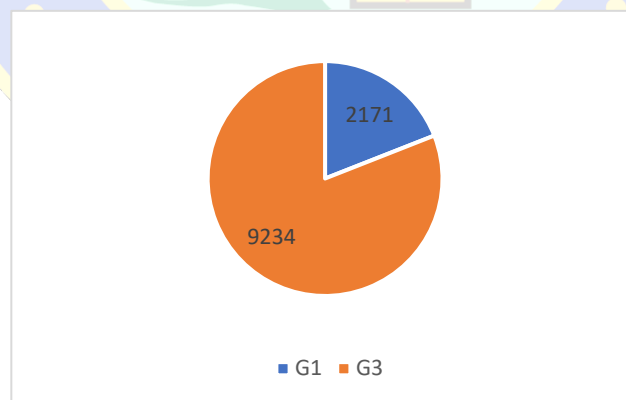
Microsoft offers various levels of licensing. The County currently uses both G1 and G3 licenses. The G1 license provides access to Outlook and web-based Microsoft applications only and has a lower price per license than the G3 license. The Bureau of Technology has made a concerted attempt to right-size its use of Microsoft licenses to fit the needs of each user, thereby saving the County the expense of

unnecessary G3 licenses. In addition, the Bureau of Technology manages enterprise Adobe licenses (web experience and content management).

ENTERPRISE SOFTWARE LICENSES TREND

Software Title Name	FY20	FY22	FY23 Anticipated
Microsoft Project Standard	5	5	10
Microsoft Project Pro	10	10	17
Microsoft Project Line 3	25	37	60
Microsoft Project Online Essentials	90	90	90
Microsoft Power BI	70	100	100
Microsoft Visio Pro	69	69	75
Microsoft Visio Standard	20	20	27
Microsoft Visio Plan	10	25	30
Microsoft SQL Server Enterprise Core	47	47	48
Microsoft SQL Server Standard Core	105	105	106
Microsoft System Center Standard Core	500	500	500
Adobe Acrobat Pro	1000	3437	4700
Adobe Creative Cloud all apps	70	70	75
Adobe Creative Cloud single app	43	75	80
Adobe Captivate Enterprise	2	2	2
Adobe Presenter	17	17	17

HARDWARE INVENTORY ASSESSMENTS

COMPUTERS

Per the Bureau of Technology, the minimum standards for new computer purchases for Offices Under the President include:

- Sixteen gigabits of RAM
- An i5 processor
- A solid-state hard drive

Estimated # of computers reaching hardware end of life in FY22	Estimated # of computers reaching hardware end of life in FY23
862	463

The procurement vehicle for technology hardware is typically via reseller agreements. Cook County currently has three hardware agreements through SHI, Insight, and CDW-G all of which were obtained through the RFP process and in compliance with all legal requirements. Please note that historically the Bureau of Technology has not managed the procurement, deployment, or lifecycle of hardware assets for Elected Officials.

SERVERS

In 2020, BOT implemented the Cook County Cloud for production applications, following a successful implementation for testing and development. It started with the migration of the Bureau of Records from their aging infrastructure to the new platform that provides disaster recovery and costs less than alternatives.

Cook County has engaged in a change in its computing infrastructure over the past two years to provide a more resilient and available environment including two availability zones of compute infrastructure, each containing four environments (DMZ, Test/Development, Production, and Production database). This hyperconverged environment has brought a significant amount of resiliency and flexibility for the computing infrastructure where Cook County is able to logically separate its various production environments without making additional hardware purchases.

This direction is an avenue away from the traditional three-tiered approach and encompasses technology that bridges the gap between on premise workloads and the public cloud. Cook County has several ways to provide dedicated infrastructure, where the County can physically or logically separate various offices to ensure data ownership remains with our customers. As the solution matures over time, the environment becomes more resilient.

Windows	2018	2020	2022
Windows Server 2003	6	0	0
Windows Server 2008	92	25	22
Windows Server 2012	242	204	147
Windows Server 2016	32	180	187
Windows Server 2019	0	10	69

BUSINESS IMPACT ANALYSIS AND DISASTER RECOVERY

The CIO is currently evaluating County resiliency in the event of disruptions. Given the criticality of County information technology for the continued operation of government, disaster recovery and

business continuity must be maintained at the level of industry best practices. The Business Impact Analysis (BIA) identified the impact to County services in the event of an unforeseen disruptive event. The BIA reviewed 71 services across 17 agencies to document the most critical services. This enabled the CIO to identify to prioritize services in need of restoration to immediately focus efforts on restoring the most critical in the event of a disaster.

Two key recommendations from the analysis are: creation of a business continuity team to further develop a business continuity strategy, and creation of a consolidated disaster recovery plan. The disaster recovery plan will document specific processes to be implemented by each Office to recover critical business services and assets. In collaboration with the various offices, the CIO has begun the work of analyzing each Office's disaster recovery plans.

IT INFRASTRUCTURE ASSESSMENT

The Bureau of Technology has recently completed benchmarking of the Countywide information technology infrastructure. This will allow the County to maximize savings through standardization of cloud networking, infrastructure management, and contract and vendor management. The Bureau of Technology has established a baseline for current information technology infrastructure assets and contracts for critical services. As a result, the County can review infrastructure budgets versus productivity which will allow for a better determination of gaps in performance versus cost.

PRINTERS

The County has moved away from using multiple devices for printing and scanning. The Bureau of Technology recommends that when printers reach the end of their lifecycle they are replaced with multi-functional devices (MFDs). MFDs incorporate printing, photocopying, and scanning into one device that can be used by multiple users. This results in greater efficiency and reduced maintenance costs as well as greater accessibility through the implementation of ADA-compliant screens. It is important to note that this standardization has been implemented for the Offices Under the President and is recommended for all Elected Offices.

TELECOMMUNICATIONS

The CIO manages all telecommunication hardware throughout the County, including the jail complex and Health and Hospital System. Voice-over-internet protocol (VOIP) has become the industry standard because it provides more features for users such as voicemail, call forwarding, and conference call

features while reducing telecom provider costs and increasing call quality. The County is currently in the final year of a five-year implementation schedule.

MOBILE DEVICES

The Bureau of Technology manages all County mobile devices and contracts, except for Cook County Health. Mobile devices include cellphones, smartphones or "data devices", PDAs, and MiFis. Unsurprisingly there has been a significant uptick in mobile device requests since early March 2020.