County Clerk Technology Strategic Plan

TABLE OF CONTENTS

The County Clerk has the most diversified portfolio of duties in Cook County. The Clerk's Office holds responsibility for Elections, Real Estate Taxes, Recording of Deeds, Vital Records, and Clerk of the Board. All of these Departments operate as independent operational units, but Clerk's IT supports all of them. In addition, Clerk IT maintains its own Director of Information Security office that coordinates closely with the County's Information Security Office (ISO), with an additional emphasis on maintaining cybersecurity for all Elections infrastructure. The Federal government has identified Elections as national Critical Infrastructure. As a result, the Clerk's office has developed close working relationships with various Federal security agencies including DHS, CIS, CISO, and MS/EI-ISAC.

The Clerk's office maintains its own hardware, network and server infrastructure up to, but not including routers and connections to the Internet, at which point control passes to County BoT. Clerk's IT maintains a substantial cloud presence at Amazon Web Services (AWS) and much smaller presences at Microsoft Azure and Google Cloud. The Clerk's office holds contractual agreements with two Cloud Service Managed Service Providers (MSPs): Turing/Server Central (now know as Deft) and Clarity Partners. The Clerk's office continues to use BoT shared services including Oracle EBS, Microsoft O365 email and desktop software, and other available services. Clerk IT is participating with BoT on the Tyler Property Management project and will use that system starting in 2023.

Clerk IT maintains a number of other vendor contracts for various services including web support, election equipment support (through a number of different vendors), document management support, cashiering support, and miscellaneous additional support contracts. In addition, Clerk IT participates in BoT managed County wide contracts such as with Microsoft, Adobe, Docusign, and other providers.

With the recent Assumption of Duties from the previous Recorder of Deeds Office, Clerk IT absorbed the IT team from that office and now has a full complement of software developers, database administrators, network/server support, hardware support, Cybersecurity and helpdesk.

MISSION

Clerk IT maintains as its first priority the effective, efficient, and reliable delivery of services to the Clerk's constituents, especially during elections. The objective of IT is to look continually for ways to improve constituent service through the ongoing modernization of existing systems and the development or purchase of new systems, while maintaining a strong focus on cybersecurity and business continuity.

The guiding principles of Clerk's IT are:

- **Reliability:** All systems, especially public facing ones, must be available during all business hours.
- **Cybersecurity:** Clerk IT continually examines all existing and new systems for their ability to resist the ever evolving security threat
- **Recoverability:** No system is perfect, and no set of safeguards can protect against every conceivable attack. Therefore, Clerk IT places strong emphasis on multiple system backups, ransomware recovery procedures, and fallback plans.
- **Continual Improvement:** Clerk IT continually looks for new products, methods or best practices to

bring into the IT environment to improve reliability, cybersecurity, recoverability and customer service.

- **Cloud-smart**: Leverage the strategic use of cloud application services and data storage to reduce the need for onsite maintenance and equipment upgrades.

Clerk IT Plans to continue looking at cloud services for new and existing application systems, evaluating cost, reliability, cybersecurity and other factors to assess the proper mix of in-house and cloud deployments for all Clerk systems and services.

Clerk IT will also continue to examine the mobile applications environment, making sure that all existing systems are mobile compatible, and searching for ways to being new services to mobile platforms.

Clerk IT'S Multi-business department spanning program areas

APPLICATION MANAGEMENT AND MODERNIZATION

Clerk IT manages, either directly or through vendor services, the central operational support systems for each of the Clerk's Departments:

- **Recording Operations:** the GRM 20/20 recording system and its planned successor the Clerk Recording System (CRS)
- **Real Estate Taxes:** the iNovah cashiering system, OnBase document management system, Microsoft Great Plains accounting and general ledger system, as well as other small, internally developed applications
- **Vital Records:** like Real Estate Taxes, the iNovah cashiering system, OnBase document management system, Microsoft Great Plains accounting and general ledger system, as well as other small, internally developed applications
- **Elections:** the VRXG voter registration and election management system, Dominion Voting Systems voting equipment, KnowINK electronic poll books, Runbeck mail sorting system, JPP petition checking system, SKU Electoral Board system, and other smaller systems.
- **Clerk of the Board:** OPS procurement management system
- **Office-wide:** Clerk's web site, FOIA management system, other miscellaneous systems.

INFRASTRUCTURE MANAGEMENT AND MODERNIZATION

- **On-site Desktop Support** — Provides on-site troubleshooting of, and support for, technological equipment for various departments under the County Clerk's office.
- **Active Directory / Access Mgmt** — Manages the setup and maintenance of all user login accesses to all systems used by the Clerk, including BoT services such as email, time, financials, etc.
- **Server Engineer Team and Data Center Operations** — Oversees operations of and policy for IT systems architecture; provides advanced troubleshooting of, and support for, application servers; manages data center infrastructure for all Clerk servers, housed both at Cook County locations and in the cloud.
- **Systems Management and Service Desk** — Provides advanced troubleshooting of, and support for, technological equipment; packaged software for deployment; and consultation and project work

for all Clerk's departments.

- **Enterprise Architecture** - Works closely with stakeholders, including management and subject matter experts (SME) and BoT, with the understanding of the Clerk's business strategy, information & processes needs, and IT assets and uses this knowledge to ensure IT and business alignment with Clerk needs.
- **IT Asset Management** – Works on effectively managing all Clerk IT assets from procurement through end of lifecycle disposal to ensure optimal return on investment and optimize spending and support lifecycle   management and strategic decision-making within our IT environment.

CYBERSECURITY

- **Information Security** — Protects the confidentiality, integrity, and availability of all Clerk information by leveraging cybersecurity capabilities across the agency and informing system stakeholders on cyber risk.

IT GOVERNANCE

Clerk IT management works closely with all Clerk business line managers to ensure that all IT projects, whether they be in-house development, vendor development, or vendor purchase, meet or exceed base level requirements for system architectural integrity, maintainability, cybersecurity, contract reasonability, and business value.

HOSTING AND DISASTER RECOVERY

Clerk IT works closely with BoT for in-house hosting of Clerk's server infrastructure, focusing primarily on the Nutanix shared service environment provided by BoT. Clerk IT also makes use of BoT's remote data centers for off-site backup and disaster recovery. In addition, Clerk IT makes extensive use of Amazon Web Services for additional application redundancy and data backup.

HISTORY

Clerk IT started out in the 1990s as a way to offload desktop and local area network (LAN) duties from an overloaded, centralized BoT to a more responsive unit within the Clerk' office. Over time, as desktop and network needs increased, the department grew to support a much larger server/desktop/mobile environment. Contemporaneously, Clerk IT began bringing in software developers to maintain Elections related systems. Over time, this development unit has grown in capacity and now builds and maintains a number of small, department specific application systems as well as supporting larger, vendor supplied systems. With the addition of the Recorder of Deeds IT team in Dec. of 2020, Clerk's IT took on the extensive role it plays today in developing, maintaining, and securing nearly fifty different application and infrastructure systems, both in-house and in the cloud, to support the Clerk's business operations.

RECENT MILESTONES

- Implementation of the VRXG voter registration and election management system to support the daily operations of the Elections Department. This was a five-year effort culminating in 2021.
- Deployment of a new cashiering and document management system for Vital Records, a two year effort culminating in 2020
- Deployment of the new cashiering and document management system for Real Estate Tax Department, a three year effort culminating in 2021, with the final phase due to go live in 1Q22
- Successful incorporation of the Recorder of Deeds IT operations, infrastructure, and application systems, and IT staff into Clerk's IT environment. Completed in 4Q21
- Several additions to the Clerk's cybersecurity environment over the course of 2021:
    - Veracode software code analyzer
    - Zscaler Edgewise anti-ransomware system
    - Cloudflare denial-of-service protection system
    - MDBR malicious domain blocking system
    - Crowdstrike endpoint protection system

ONGOING PROJECTS (under $10 Million)

- *Clerk Recording System*: replacing the legacy GRM 20/20 system. The new system will create new customer interaction capabilities including enhanced e-recording, improved search and purchase capabilities, e-certification of document copies, and other customer improvements. Due 3Q22
- *Cashiering and Document Management* system for Real Estate Tax Department. This next phase will move the Finance Office operations off the legacy cashiering and doc mgmt. systems onto the new iNovah/OnBase platform: Due 2Q22
- *Great Plains Accounting and GL system*: Due 2Q22
- *DocuSign* deployment to enhance online marriage application process. Due 3Q22

ONGOING PROJECTS (over $10 Million)

- Deploy the new *electronic pollbook system* from KnowINK. This Apple tablet based system will replace the current legacy system, providing much better usability for election judges and voters, more effective delivery of services, and higher reliability. Total 6 year cost = $15MM. Due 2Q22. Project Plan provided as a separate document in this report.