

Countywide Technology Strategic Plan

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BACKGROUND

Cook County is the second largest county by population. It is home to more than half of the Chicagoland region's population and economic activity. Cook County government plays a pivotal role in serving and supporting the needs of those who live and work here. It is responsible for promoting the health, welfare, and safety of more than five million residents. It manages the nation's largest consolidated court system and single-site jail campus. These objectives are accomplished via 10 separately elected Cook County offices and other appointed and independent agencies. Among the elected offices are the 17 Cook County Board of Commissioners, Board President, Assessor, Clerk of the Circuit Court, Cook County Clerk, over 400 Circuit Court Judges, Sheriff, State's Attorney, three Board of Review Commissioners and Treasurer. The offices under appointed leadership include Cook County Health, Forest Preserves District, Cook County Housing Authority, Cook County Landbank and Cook County Public Defender.

Cook County has a shared-services IT governance model. This allows for the elected offices to exercise autonomy over their individual IT decisions while leveraging the benefits of procuring services and hardware via enterprise-wide contracts. Cook County's hybrid approach allows for flexibility and cost efficiency.

The Bureau of Technology (BOT) operates a centralized IT help desk used by several elected offices as well as Offices Under the President. Pursuant to Cook County Ordinance No. 18-5634, BOT manages a Countywide Service Desk that provides Tier 1, or basic, help desk services Countywide. Pursuant to Cook County Ordinance No. 14-1481, BOT is also responsible for creating security standards and policies through the Information Security Working Group which includes representatives of each separately elected office. Additionally, BOT is responsible for Countywide network service and maintenance, and telecommunications. In addition to this role in Countywide operations, BOT provides all IT support for Offices Under the Cook County Board President, which are six bureaus and 34 departments.

BOT manages enterprise-wide contracts such as the Microsoft contract for the County email system for many elected offices, except for Cook County Health, Sheriff's Office, Treasurer's Office and Cook County Housing Authority. BOT provides computing equipment such as laptops, desktops, and peripheral devices for the Offices Under the President, Board of Review, Land Bank, Public Administrator and Public Defender. BOT provides or supports all servers for the Board of Review, Forest Preserves, Offices Under the President and Public Defender. BOT provides some server support for the Assessor, Chief Judge, County Clerk, State's Attorney and Treasurer. BOT supports a time and attendance system with biometric timeclocks for all agencies except the Housing Authority, as well as an Enterprise Resource Planning (ERP) System that covers some or all aspects of ERP services for all agencies except the Housing Authority. In FY2023, BOT plans to create a service catalog with Service Level Agreements (SLAs) for each service.

MISSION

BOT plans, develops, and maintains enterprise technology services according to its guiding principles: life cycle management, cloud-smart, shared-first, sustainability, transparency, continuity, Countywide standardization, and reuse before buy, and buy before build.

- **Life cycle management:** the administration of an IT system from provisioning, through operations, to retirement

- **Cloud-smart:** this term is adopted from the Federal Cloud Computing Strategy and means the strategic use of cloud data storage to reduce the need for onsite maintenance and equipment upgrades
- **Shared first:** this term is adopted from the federal government's IT strategy and means that BOT will look to share platforms and software across the enterprise rather than have each department or office utilize multiple vendors for the same type of product
- **Sustainability:** ability to continue supporting and maintaining of applications, platforms, etc.
- **Transparency:** using public-facing technology to provide insight into Cook County operations and initiatives
- **Continuity:** stability of IT services during emergencies that threaten outages and equipment or software failure
- **Standardization:** the process of developing and promoting standards-based and compatible technologies and processes for County government IT
- **Reuse before buy:** this is a common principle of IT architecture that means that existing solutions will be considered before considering new alternatives, which provides for faster and cheaper implementation of IT solutions
- **Buy before build:** this is a common principle of IT architecture that means that IT solutions are bought and not built in-house, which provides for lower maintenance costs, better performance, and less need for staff with technical expertise

BOT'S MULTI-ELECTED-OFFICE-SPANNING PROGRAM AREAS

APPLICATION MANAGEMENT AND MODERNIZATION

- **Applications and Development** — Provides consulting, development, enhancement, maintenance, and support of applications. Resolves application incidents and delivers new solutions.
- **Enterprise Resource Planning** — Handles enterprise systems in areas including Financials, Budget, Supply Chain, Purchasing, Inventory, Human Resources, Benefits, Payroll and Performance Management.
- **Geographic Information Systems** — Provides maintenance of and access to the County's enterprise geographic information system. Engages in geospatial data management, analysis and modeling, training, and application development.
- **Program Management Office** — Provides technology program and project management services. Engages in business analysis, requirements development, risk management, scope and proposal development.

INFRASTRUCTURE MANAGEMENT AND MODERNIZATION

- **On-site Desktop Support** — Provides on-site troubleshooting of, and support for, technological equipment for various departments under the County Board President and other elected officials.
- **Mainframe Print Operations** — Oversees the County's large-scale print jobs created from the mainframe, including Assessor documents, accounts payable checks, Board of Review documents, jury summons, and revenue letters.
- **Server Engineer Team and Data Center Operations** — Oversees operations of and policy for IT systems architecture; provides advanced troubleshooting of, and support for, servers; manages data center infrastructure.

- **Systems Management and Service Desk** — Provides advanced troubleshooting of, and support for, technological equipment; packages software for deployment and implements deployment; engages in consultation and project work.
- **Telecommunications and Network Support** — Oversees administration and management of the County's voice and data telecommunication services.
- **Enterprise Architecture** - Establishes and matures the Enterprise Architecture function in terms of its capabilities, operating model, and governance structure. Defines the role, function, scope, and value proposition for the enterprise architecture function; intersects and informs other technology (data, integration, applications) and business (strategy, capabilities, prioritization) domains. Improves business processes through implementing best practices for building IT solutions to solve business challenges.
- **IT Asset Management** – Works on effectively managing all 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.

RESIDENT TECHNOLOGY ENGAGEMENT

- **Data Analytics** — Maintains the shared Cook County Data Portal.

CYBERSECURITY

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

IT GOVERNANCE

Bringing sustainable and transformative technologies to bear on Cook County operations is always a key priority. Through investments in new applications and infrastructure, Cook County continues its transition away from paper-centric business processes and further into the digital realm.

BOT manages Cook County's enterprise IT strategy and transforms the policies listed above into actions in several ways.

CIO ROUNDTABLE

BOT's Chief Information Officer chairs a monthly CIO Roundtable meeting in which IT leaders from each of Cook County's separately elected offices and other entities, such as Cook County Health, with varying degrees of IT autonomy, come together to discuss pertinent issues and find opportunities for interoperability or shared services.

CHANGE APPROVAL BOARD

BOT's Chief Technology Officer holds a weekly IT Change Management meeting with the IT Change Approval Board in which IT representatives from each of Cook County's separately elected offices and other entities come together to discuss changes to the IT systems which could potentially impact enterprise-wide shared services and ensure responsible agencies have approved and all stakeholders are informed.

INFORMATION SECURITY WORKING GROUP

In addition, the Bureau of Technology's Chief Information Security Officer chairs the Information Security Working Group (ISWG) which meets monthly to discuss cybersecurity threats, policies and standards.

Cybersecurity plays an important role in any mature IT organization. Cook County needs to be prepared for the entire spectrum of potential threats because data is now accessible around the clock from anywhere in the world. Beyond the technical considerations of cybersecurity, Cook County must further integrate cybersecurity strategies into the governance, engineering and management of its operations. Governance is key to increasing collaboration and shared services across the County.

On June 18, 2014, the Cook County Board of Commissioners passed the Cook County Information Security Ordinance, Ord. 14-1481. The Ordinance requires that all separately elected County and State officials, departments, office institutions or agencies funded by the Board of Commissioners take the appropriate precautions to protect the integrity and confidentiality of information.

The ordinance mandated the creation of an Information Security Working Group (ISWG) with representation from each elected office. The ISWG assists the Cook County Chief Information Security Officer (CISO) in creating, and updating as necessary, a comprehensive and written Information Security Framework.

BOT's goal is to continue to mature the information security program at Cook County and fulfil the mandates set forth in the Cook County Information Security Ordinance so that all Cook County information systems continue to provide the level of service Cook County residents require and deserve.

PURCHASING

Cook County's Procurement Code also allows the Office of the Chief Procurement Officer (OCPO) to require BOT to concur on all IT procurements. Types of IT procurements requiring BOT concurrence include new vendor contracts procured via sole source, RFP, RFQ, or by reference to another government entity's competitively bid contract (also known as a "piggyback contract"); increases, extensions and amendments to existing vendor contracts; task orders obtained through target market or non-target market master consulting agreements; and statements of work (SOW) for professional services obtained through BOT's Countywide software/hardware reseller agreements.

BOT's considerations for concurrences include impact on BOT operations and resources (e.g. help desk support), content of RFP/Task Order (e.g. IT language and execution), content of proposed IT contracts (e.g. SOW, License Agreements), and other considerations such as sole-source justification and security issues.

Funding for new system developments and enhancements remains limited, and choices will be made based on competing business priorities. Whenever possible, BOT will avoid customizing systems, which may mean adapting business processes to the out-of-the-box features of selected software. BOT avoids technology for technology's sake by examining whether technology will offer an operational improvement significant enough to justify the expense.

HOSTING AND DISASTER RECOVERY

Collaborative countywide infrastructure modernization efforts are long-term, expensive investments, but they are mission critical. BOT has adopted a cloud-smart strategy, meaning that we consider remotely hosted cloud

solutions first when developing a new procurement plan for a particular system. For systems from all the offices, agencies and departments across Cook County that will remain on premise for the foreseeable future, BOT is focused on modernizing and consolidating the hosting environment to improve performance and efficiency. To enable this goal, BOT has published an RFP for the IT infrastructure consolidation to consolidate and migrate to either co-location data centers or cloud.

HISTORY

BOT began as a mainframe shop with a limited desktop service operation. Prior to the current administration, inter-elected-office collaboration was often discussed, but never attempted in an organized or serious fashion. IT consolidation and multi-jurisdictional collaboration were considered even more unrealistic and unattainable.

Because in that era BOT had not adjusted to the rapid changes in the IT world, and lacked a well-rounded and skills-rich staff, it did not have credibility among other County separately elected officials. Unfortunately, each separately elected office began to seek IT solutions on its own, even building independent operations to provide the services that BOT should have provided. A siloed environment took hold, which required immediate attention.

An excessively siloed environment is undesirable for several reasons:

- Each elected office having a separate contract with vendors squanders savings that could be achieved through economies of scale.
- If agencies choose different technologies to solve similar problems, then each technology will require different knowledge and perhaps personnel to support.
- As the number of technologies and support models increase, the complexity of creating safety and security standards increases exponentially.

The gradual restructuring of BOT has yielded positive results. BOT is now collaborating with all County Offices on an array of projects, and recently consolidated some service desk activities. These changes have produced an increasingly efficient operation that is better prepared for the future.

MILESTONES

1997 — Bureau of Information Technology and Automation (“BITA”) is formed to provide “users with integrated and automated systems and services that could assist them in performing their daily tasks more efficiently.” BITA initially consolidated Geographic Information Systems (“GIS”), Management Information Systems (“MIS”), and Office Automation (“OA”) functions. Shortly thereafter, Central Services (“CS”) was consolidated into BITA “due to the synergies involved regarding telecommunications and the incoming Wide Area Network (WAN).”

1998 — The newly consolidated Enterprise GIS Dept. issues an RFP to develop a comprehensive repository of mapping files and data.

2002 — Cook County Board of Commissioners passes an ordinance creating a GIS Fund. The Fund is supported exclusively by document recording fees.

2002 — Cook County Board of Commissioners formally establishes the Cook County Integrated Criminal Justice Information Systems (CCICJIS) committee, charging the committee with the creation of an integrated criminal justice strategic plan.

2008 — BITA is rebranded as Bureau of Technology.

2008 — Bureau of Technology is certified by Illinois Commerce Commission to provide telecommunications interexchange carrier services (“IXC”) and local exchange carrier services (“LEC”), allowing us to put fiber-optic cable in the ground to build the County’s 10-gig broadband backbone.

2011 — Cook County Board of Commissioners passes Open Government ordinance, requiring County agencies to make open data available to the public. BOT launches County Open Data Catalog to house County data in an open and freely accessible format to the public.

2013 — Cook County Board of Commissioners passes a resolution requiring the BOT Chief Information Officer to pursue the development of an automated, integrated criminal justice information system.

2014 — Cook County Board of Commissioners passes an ordinance requiring BOT to concur on all technology-related procurements.

2014 — Cook County Board of Commissioners passes the Information Security Ordinance. The Ordinance requires that all separately elected County and State officials, departments, office institutions or agencies funded by the Board of Commissioners take the appropriate precautions to protect the integrity and confidentiality of information. The ordinance included the creation of an Information Security Working Group with representation from each elected office.

2016 — Cook County Board of Commissioners passes an ordinance requiring BOT to analyze and report on annual software and hardware asset inventory submissions from all County agencies.

2018 — Cook County Board of Commissioners passes the Information Technology Consolidation Ordinance, tasking the Chief Information Officer with studying the viability of consolidating data center and other IT functions, creating a consolidated help desk, and encouraging the development of shared IT policies and standards.

2021 — Cook County Board of Commissioners consolidates ordinances regarding IT reports to the Board.

The Cook County IT ecosystem of today is made up of several different teams whose work is very closely related and integrated. BOT is now more effectively providing reliable public-facing and back-office services. Today BOT better understands how and when to utilize on-premises, externally hosted and cloud-based application and the associated infrastructure. There is a better understanding of potential cybersecurity threats and the necessary preventive and remedial actions to take.

Cook County has strengthened its exceptionally reliable wide area network. Its GIS team now regularly applies its mapping expertise to help expose and address pressing challenges (e.g. the mapping of opioid overdoses and gun-related deaths). And Cook County’s Project Management Office helps track and guide an array of initiatives that historically lacked proper management.