The approach to Information Technology in local government is changing. As St. Joseph County continues to innovate to meet the pace of rapidly evolving technology, the Information Technology Department has seen its role expand to have an impact on citizen services, employee security, public safety, county strategy and planning, and the implementation of technology transformations throughout the entire organization.

Over the past year and half, we have shifted our attention to two primary focal points: 1.) Implementing new technologies that improve user efficiency, productivity and morale and 2.) Solidifying the confidentiality and security of the county's digital information while meeting regulatory compliance standards.

The rise of a fast paced and mobile workforce has us reimagining what it means to be a government professional. Software telephones, multi-factor authentication, cloud services, collaboration tools and VPN technology improvements have enabled us to improve communications, make on-premises staff more productive and make full and part-time telecommuting a possibility for select staff while maintaining cyber security standards and requirements.

In this information age many regulatory compliance standards and requirements apply to county operations regarding the confidentiality and security of St. Joseph County's data. Recent cyber security implementations and employee security awareness trainings have enabled us to meet compliance standards while improving the county's cyber-security posture.

These advancements would mean little if the county's computer and communications infrastructure were falling behind. The replacement of aging VoIP telephone equipment and a new modern server platform help to ensure that our communications and computer systems are available when needed and ready for future expansion.

As technology continues to create new efficiencies and services, St. Joseph County has positioned itself to meet the challenges of the future and to realize the many benefits that new technology has to offer. The St. Joseph County Information Technology Department is eager to continue working with the county's leaders in implementing the innovation that will further improve the quality of life for the citizens of St. Joseph County.

Sincerely,

Dustin Bainbridge
Information Technology Director
St. Joseph County, Michigan

The Role of Information Technology

IT Support by the Numbers:
- Computers: 200+
- VoIP Telephones: 140+
- Printers and FAX Machines: 90+
- Servers: 40+
- Network Infrastructure and Security Devices: 60+
- Computer Users: 300+
- Production Data Size: 12+ Terabytes
- Annual Help Desk Requests: 3,200+

The primary mission of the Information Technology Department is to provide quality infrastructure, support, and innovation in the planning, development and deployment of state-of-the-art information and communication technology systems and services to enable and empower the departments, offices and officials of St. Joseph County.

The IT Department implements, maintains and supports the information and telecommunications hardware and software to all the county departments and offices. Additionally, the county IT Department supports all St. Joseph County law enforcement agencies and fire and rescue services in their access to county provided public safety computer systems and in-vehicle computers. The IT Department supports over 600 devices and over 25 separate software systems used by county departments to provide public services in addition to many utility, compliance and security computer systems. Supported technologies include but are not limited to:

- Computers, Printers, Scanners
- Document Imaging Systems
- Case/Records Management
- Email
- Telephones, FAX and Voice Systems
- Property Records Systems
- Videoconferencing

- Courtroom Proceedings Video
- Law Enforcement Vehicle Video
- Security Cameras and Video, Doors Locks and Access Cards
- Collaboration and Messaging Software
- Remote Access Systems
- Financial Management Systems

- Cloud Storage and Sharing Services
- Cyber Security Systems and Software
- Data Center and Server Equipment
- Network Equipment and Infrastructure

Personnel

The IT Department consists of the Director, System Administrator and two Technicians. One Technician position is funded by the St. Joseph County 911 Central Dispatch under the agreement that the IT Department will provide the equivalent of one position in support of 911 Central Dispatch, law enforcement and fire and rescue services. These duties of varying responsibility and complexity are spread across the four IT positions.

Information Technology Staff:

- **Dana Gray, Technician**
  The newest member of the IT staff is a veteran of the US Army and has an IT background in city government and education. Dana's duties focus on user support and law enforcement vehicle equipment. Dana is training to become more fluent with local government computer networking and domain technologies.

- **Tony Skidmore, Technician**
  Tony Skidmore has 15 years of IT experience with an IT background in manufacturing and higher education. Tony is a graduate of Kellogg Community College and has been with the IT Department for five years. Tony's work touches many aspects of the department though he specializes in network configuration and administration. Tony is training to become an expert in network administration.

Mid-2017 Personnel Changes:
- Retirement of Director, Daniel Wing after 28 years of service.
- Promotion of System Administrator, Dustin Bainbridge to Director.
- Promotion of Technician, David Cover to System Administrator.
- Hiring of Technician, Dana Gray.

Personnel - Continued

Information Technology Staff (Continued):

- **David Cover, System Administrator**
The county's System Administrator, David Cover, is a veteran of the US Army and has been with the county IT Department for 22 years. David originally worked on programming department systems for the county's IBM Server and has evolved his skill set as new technologies have been implemented. David focuses on maintaining the county's servers and systems and has become the primary OnBase System Administrator for the IT Department. David's training centers on OnBase administration and development and the county's virtual server platform.

- **Dustin Bainbridge, Director**
Dustin is a St. Joseph County native and graduate of Western Michigan University. Dustin has been with the IT Department for 14 years and previously worked as a Technician and then the county's System Administrator. Dustin's work as the Director focuses on project implementation, regulatory compliance and cyber security. Dustin is currently enrolled in the University of North Carolina's Certified Government Chief Information Officer program.

Financials - 2018

General Fund (Excluding Personnel Accounts)	Budgeted	Activity
Office Supplies	5,000	6,352
(Ink, Toner, Keyboard, Mouse, Small Technology Products)		
Other Supplies	2,500	2,922
(Cables, Tools)		
Dues & Memberships	200	200
Contractual Services	20,000	14,220
(Office 365 Migration, Server Platform Implementation)		
Internet and Website Hosting	10,400	10,697
Travel	700	70
(Travel to County Offices for Support Work)		
Training & Profession Development	13,500	11,300
(IT Staff Training, OnBase Training, Employee Cyber Security Awareness)		
Computer Maintenance and Service Contracts	116,950	112,886
(Software Maintenance, Office 365 Subscription, Hardware Maintenance, etc.)		
Telephone Maintenance and Service Contracts	8,000	8,235
(Telephone System Upgrades and Maintenance)		
Furniture and Fixtures	6,200	6,906
(Work Bench, Storage Cabinets, Shelving)		
Equipment	8,500	6,733
(Courts Building Cellular Repeater, Media Carts, Network Enclosures)		
Computer Hardware	150,300	149,870
(Servers, Network Equipment)		
Computer Software	48,400	47,961
(Security Software, Productivity Software, Server Operating Systems)		
Telephone Equipment	1,000	0
IT Technology Fund		
Computer Hardware	54,650	49,733
(Computers, Printers)		
Total Expenses (Including Personnel and Capital Accounts)	707,937	678,256

The following are some of the highlights of the IT Department's projects from mid-2017 through 2018.

Security Awareness Training

Like all government agencies, St. Joseph County is a target for cyber-attacks of varying degrees. The overwhelming majority of successful cyber attacks target the system users and not the system themselves. To improve our cyber security posture, we have implemented an ongoing cyber security awareness training and testing program. Computer system users are and will continue to be regularly trained in identifying current cyber security threats and on how to respond to potential infections.

Office 365 Migration

The rise in mobile, fast-paced government professionals has necessitated the implementation of Internet-based "cloud" applications and file storage and sharing services. With our migration to Office 365 we can provide improved email, file storage and sharing, and collaboration software and services to county staff and officials while maintaining the security and confidentially of county data. Additional Office 365 functionality and services will continue to be implemented and provided to staff and officials over the next few years.

Server Platform Replacement

As the county continued to implement new computer and software systems to realize emerging efficiencies and provide additional public services, it became apparent that an improved server platform was required to support future innovation. Our new hyper-converged server platform combines compute, storage and virtualization to allow the IT Department to rapidly implement new software systems while also simplifying maintenance and replacement lifecycles and delivering predictable capital investments in the future.

Help Desk Platform

The new Help Desk ticketing system simplifies and streamlines IT help desk requests for the user and allows for more efficient use of the IT staff. County staff and officials can make help desk requests via email or the help desk portal and are provided updates on the status of their requests throughout an issue's lifecycle.

VoIP Telephone System Upgrades

Much of the county's VoIP telephone equipment was nearing end of life and could no longer have vendor supplied maintenance contracts. The county's telephone system and voice routers were updated and new collaboration and communication features such as instant messaging, voicemail routing and remote software telephones have been implemented and offered to county staff and officials.

Endpoint Security Software Replacement

Following recommendations from other government agencies, the county replaced its endpoint security software. The new software is cloud-managed and includes deep learning behavior analysis for zero-day threat detection as well and the automatic isolation of infected devices from county data resources as the infection is cleaned.

Document Imaging Expansion

Development of the expansion of the OnBase document imaging and workflow system into District and Circuit Courts lasted the entirety of 2018. After a problematic launch of the OnBase system in District Court, the system vendor, ImageSoft, has been working with District Court and the IT Department on resolving issues preventing the system's success. The District Court OnBase system is currently on schedule to re-launch in the second quarter of 2019, with the Circuit Court Criminal System expansion following soon after.

Animal Control/Shelter Software

The county implemented a new Animal Control/Shelter software package allowing for better management and logging of the Animal Shelter activities as well as online dog license payments.

Courthouse Security System

The county made significant upgrades to the Courthouse security system including IP cameras, controllers and dedicated computers and servers. The IT Department works closely with the Courthouse Security to manage and maintain the many networked devices for the system and to create and manage staff and visitor access credentials.

Challenges and Considerations

The following are current and upcoming challenges and considerations regarding the use of computer technology at St. Joseph County.

Network Upgrades

In recent years, the county has dramatically increased the demand on our data network with the implementation of document imaging, IP based security cameras and videoconferencing to and from the courts and the jail. As the data needs of the St. Joseph County Government continues to increase, investments will need to be made in the county's data network to increase data speeds to and from county servers and devices. Additionally, much of the county's network equipment is reaching "End of Life" meaning that it cannot have vender supplied maintenance and firmware updates. This will include replacing network switches, VoIP telephones and upgrading some telephone licensing.

Regulatory Compliance Requirements

Most county offices are subject to some type of regulatory compliance requirements such as HIPAA, FBI CJIS Security Policy, IRS Publication 1075 and PCI DSS. County leadership should continue to concern themselves with knowing the regulatory and security requirements that their digital data is subject to and work with the IT Department to ensure that their staff, computer systems and vendors are meeting those requirements. As we have seen with recent incidents with other municipalities, failure to meet regulatory standards opens the county to significant financial risk through the costs associated with the mitigation of a potential data breach as well as negative impacts to the county's reputation and public trust.

IBM Server End of Life

The IBM mainframe which runs the Case Management Systems for the county's courts has reached end of life and currently has a warranty through a third-party vendor. The IT Department is working with the courts on determining if it is best to replace the IBM server or to migrate to Microsoft Windows-based Case Management Systems.

Cyber Security

While we have made significant cyber security improvements including tightened firewall rules and application controls, regular security awareness trainings and advanced endpoint security software, we cannot afford to rest on our laurels. St. Joseph County has been and will continue to be a target for cyber crimes and attacks. The recent cyber incidents suffered by other municipalities in Michigan have shown the devastating effects that malware infections can have on local governments and their citizens when government computer systems are down for weeks and critical data is lost taking months or years to re-create. St. Joseph County must continue to invest in the latest cyber security technologies as we take a layered approach to cyber security and defense.

Document Imaging Support

The IT Department invested an estimated 1,000 work hours in 2018 in the support and development of the OnBase document imaging and workflow systems in use by the county's courts and Prosecutor's Office. While efficiencies are created with the OnBase system it requires significant financial and time investments to achieve and maintain those efficiencies. The expansion of OnBase and its resulting time investment have hampered the IT Department's ability to implement other technology projects. If the time spent on OnBase development and support increases further, additional IT staff may be necessary to maintain operations at current expectations and requirements.

Looking Ahead

Technology continues to drive synergy, efficiency and innovation for the St. Joseph County Government. The following projects are planned for 2019 and beyond:

- The re-launch of the District Court document imaging system and the expansion of the Circuit Court document imaging system.

- An improved law enforcement vehicle recording system for the Sheriff's Department.

- Further adoption of cloud services such as Office 365 to improve collaboration, mobility and secure file sharing with outside agencies.

- A new encryption platform to further improve data security and confidentiality.

- The joining of the Commission on Aging to the county's wide-area network and county domain for improved support and integration of services.

- The replacement of the electronic citation system utilized by District Court and all St. Joseph County law enforcement agencies.

- Implementation of a centralized security event platform to improve cyber security and meet emerging compliance standards.

- The St. Joseph County courts' implementation of the state-wide electronic case filing system.

- Expansions to the county's IT Policies to meet emerging compliance standards.

- Implementation of off-site secure cloud storage and virtualization for the county's backup and recovery system to further insulate St. Joseph County from data loss due to a natural disaster or catastrophic malware infection.