Macomb County IT Department Strategic Plan

FIVE-YEAR ROADMAP

Abstract

The goal of the strategic plan is to shape the future of the Macomb County Information Technology Department to align with our Vision, Mission and Values. It will be recognized as a center of excellence for the enhancement of IT Government services to its communities.

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LETTER FROM THE CIO

According to SEMCOG we serve a population of 876,792 people in Macomb County. It's a diverse community of many different cultures; initiatives like OneMacomb foster a welcoming environment for people from all walks of life. Even more lucrative is the growth and opportunities being created by the County's successful industries. Macomb County is known as the Defense Corridor, and has significant presence in Aerospace, Advance Automotive, Advance Manufacturing, Alternative Energy and Tourism.

To efficiently service such a vibrant environment, we must step out of our comfort zone and transform the delivery of IT (Information Technology) Services to our departments and constituents. Deliberate, thoughtful planning and action is needed to not only keep up with technology trends and demands, but also get out in front of our constituents enabling us to deliver world class services in the process. We've moved on from an antiquated IT model of KTLO (Keep the Lights On) to a solution centric environment. Transformational Leadership has been the catalyst, and a dedicated, focused workforce has and continue to make this change possible.

It is Macomb County Information Technology's duty to align itself strategically with the Executive leadership to realize our common goals. An underlying theme, from an information technology perspective, of the roadmap for Macomb County Government Is to emphasize the importance of optimizing Macomb County Government's digital presence in our communities. This document also draws on current technology trends in the industry as a whole and a strategic analysis of our IT operations and infrastructure.

This technology plan identifies three goals, their respective objectives and performance metrics that will be measured on an ongoing basis after the strategic plan has been implemented. It is seen as a living document to ensure its relevance. I believe it will continue to provide a competitive advantage to Macomb County Government through a balanced application of existing and emerging technologies. The design, implementation and execution of action items are being guided by PMO office with the hard work of the IT workforce and the support of our Managerial staff. A clearly defined roadmap is vital to the success of our transformation.

Thank you to the Macomb County Information Technology staff for your valuable input, the strong leadership and direction we receive from the Office of the County Executive, and my co-author for going through this lengthy journey with me to facilitate transformational change.

Sincerely,
Jako van Blerk, CIO

EXECUTIVE SUMMARY

The goal of the strategic plan is to shape the future of the Macomb County Information Technology Department; it compliments and conforms to the strategic direction taken by the Macomb County Executive Office.

Vision

The Macomb County Information Technology Department will be recognized as a center of excellence for the enhancement of IT Government services to its communities. Constituents will have county services and relevant information at their fingertips, securely, from anywhere with any device.

Mission & Guiding Principles

The Macomb County Information Technology Department is dedicated to improving the business processes of the County and our customers, individually and collectively, through the innovative use of leading-edge technologies to meet objectives and deliver world class services to its communities.

To support this mission, we apply the following guiding principles in service delivery, decision making and strategic and/or tactical planning.

RELIABILITY - we are committed to providing reliable and secure information services to our departments and communities.

INTEGRITY - we support open government, transparency and engagement.

ADAPTABILITY - we are adaptable to the environment we work in by striving to be proactive rather than reactive to change. The only certainty in IT is change.

AUTOMATION - we automate processes, support, maintenance, and other areas of IT to simplify operations and provide reliable services.

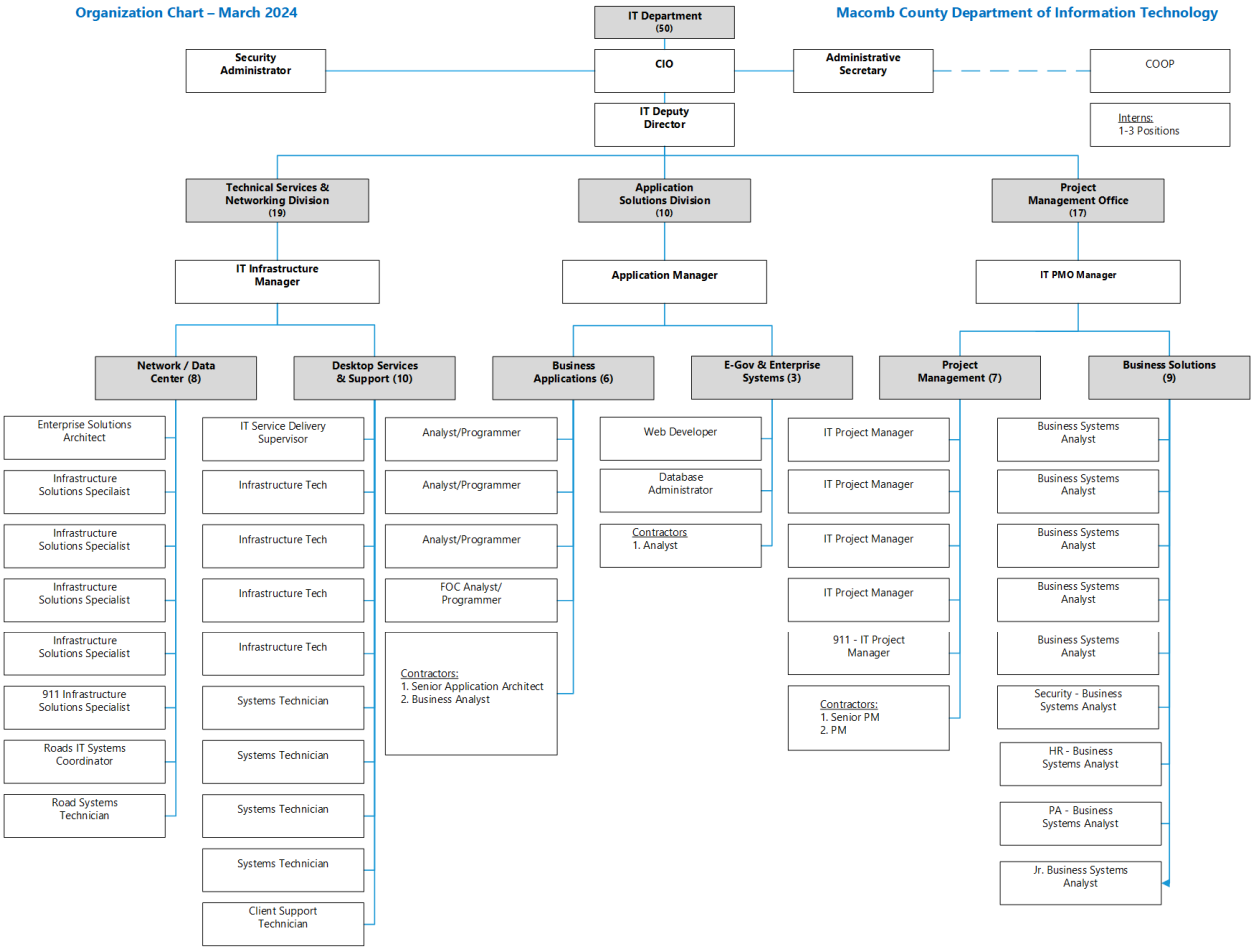
INNOVATION – it is essential to vitality in an ever-changing environment. It provides significant added value to our organization and its communities.

CIVILITY – it is key to successful human interaction: our services and our partnerships revolve around people.

COLLABORATION - we practice and encourage interaction with our vendors, customers, and other stakeholders.

CUSTOMER SERVICE EXCELLENCE - we take care of our customer needs by providing and delivering professional, helpful, high-quality service and assistance before, during, and after their requirements are met.

Current Organization Chart



STRATEGIC GOALS AND OBJECTIVES

Goal 1

Transform the delivery of technology through leadership, collaboration, and improved business processes and data management.

Profound technological advances over the past decade provided us with an environment that is favorable to address the elements mentioned in this goal. Industry trends clearly shows a myriad of key benefits that result from the integration of people, process and technology; it translates into streamlined processes, timely access to information and much improved decision making. The impact of technology on productivity, profitability and forecasting through collaboration, business process improvement, and data analytics put information at our fingertips. Combine data analytics with artificial intelligence, machine learning, and deep learning and the possibilities are almost unimaginable. The value that IT adds to the 21st century organization is critical due to the technological ability to use the massive amounts of data now available to drive better quality services.

Our goal is to drive these discussions; IT is at the core of this transformation. We are building meaningful relationships between the appropriate entities to facilitate digital transformation.

Objectives:

1. Transformational leadership

The transformational leader provides vision, communicates the mission and values, and facilitates an enterprise-wide cultural change through persistent engagement of the appropriate stakeholders.

Transformational leadership is the catalyst that drives the necessary change needed to accomplish our goals. As a CIO in the Government space, it is important to me that we remove the stigma of the public sector always lagging the private sector as far as Information Technology is concerned. The IT industry is converging in all aspects; interoperability is the key, and we need to keep up with the times. Improving business processes in the 21st century can only be effectively done when everyone fully understands the business value of IT. Financial- and cost models need to allow for collaboration, and business processes need to be aligned with the incredible benefit, time, and cost saving measures available through the utilization of modern IT. This includes for example cost sharing between entities, providing meaningful services to CVT's (Cities, Villages, Townships), the use of data analytics to improve the quality of decision making, the funding of ongoing infrastructure cost with operational spending vs. capital spending, and improving chargeback / show back models.

2. Collaboration and shared services

Encouraging collaboration and shared services amongst local government, communities, cities, villages and townships will drive down cost and improve services to our constituents.

We've been making great strides in enabling collaboration between governments and different departments in government. Although shared services will drive down costs and improve budgeting for the CVT's, economies of scale and quality of service are also important aspects that need to be addressed, for example a hardware standard that's acceptable for the County might not be feasible for CVT's. On the other hand, these entities might also get access to services that are not financially viable for a smaller entity at this time, for example paperless solutions with workflows built to improve process and ultimately productivity. Collaboration and shared services are important components of data analytics. There's a significant

amount of bureaucracy in the way of overcoming these barriers, however persistence, commitment and participation go a long way.

3. Business processes

Optimize efficiency through process improvement, electronic workflows and paper reduction.

The use of electronic workflows to improve business process has been transformational. It provides significant gains in productivity and accuracy, such as, the creation of electronic forms streamlines approvals and assignments with an added benefit of higher quality data input. A well-planned DMS (Document Management System) provides a platform that is ready for the design and creation of workflows between multiple data sources, such as scanned documents, email, department applications and social media. The integration of all these sources with well-designed workflows creates automation and eliminates the need for paper storage. This has been successfully implemented in Macomb County. The challenge now is to continue expanding these services enterprise wide to improve business processes. Some solutions have workflows built-in, and a good balance is needed to provide these where no solution is available.

4. Data management

Integrated, open data provides a platform for transparency and collaboration which in turn produces useful information to make timely, accurate and measurable decisions.

Providing the right information to the right people at the right time will provide better insight and drive better outcomes. Creating strategies/plans for extracting data that's created and stored from both unstructured and structured data, it allows us to collect information to provide more relevant, timely data for predictive analytics. By cross-referencing different data sources that we traditionally don't share, modeling, and other analytics operations will improve decision making, connecting the dots, and providing significant, relevant, added value.
Actionable intelligence through innovative data analytics and business intelligence supports rapid decision making and improve operational efficiencies. By using data to drive decisions, we can identify when change is required, measure its success, monitor for improvement and determine when a new course of action is needed.

5. Finance, budgeting and spending

Aligning financial practices with the modern IT organization enhance our ability to budget and consume more efficiently.

Enhance financial planning, including budgeting, accountability, cost-, service- and chargeback models to ensure we can meet all our goals that we've set for a modern IT organization. The commoditization of infrastructure and hardware puts significant pressure on the cost models deployed in the industry today by changing the focus away from capital funding towards a more operational or consumption-based model. It allows for improved budgeting forecasts, as well as less dependence on the capital budget.

Keywords & phrases: transformational leadership, C-level, reach out to CVT's, folder structure, back scanning, scanning, build workflows, data aggregation, data analytics, actionable intelligence, data drives decisions, optimize single data stores, business intelligence, data elements, budget conversations, evaluate infrastructure and service cost, cost reduction in telecommunications, CVT cost model, economies of scale, printer consolidation, badge printing on Ricoh's, standardization, budget for strategic plan, develop and monitor metrics, measure improvement.

METRICS:

1. Transform IT governance, management and operations to align with that of a 21st Century organization.
2. Offer and/or consume shared services and data with other local governments and appropriate non-profits.
3. Implement automated business processes through electronic workflows to increase productivity and reduce the dependence on paper for every department.
4. Apply the use of data analytics to significantly impact and improve policy and business decisions with seamless data integration across departments and CVTs.
5. Drive down TCO in every area of IT operations.

Goal 2.

Provide a secure, robust infrastructure that supports agile delivery of applications and solutions.

The introduction of cloud computing, commoditizing equipment and infrastructure, improved bandwidth technology and the automation of support, resulted in a highly agile environment. A multitude of challenges have driven the industry to move in this direction, with the most important one enabling IT providers to deliver better quality solutions that are more dynamic and can adapt rapidly to ever-changing industry demands.

There are some significant challenges as far as these goals are concerned, for example, accessing resources with any device from anywhere, as well as providing an agile, robust environment that requires moving resources between on premise and cloud based solutions and at the same time securing the data in a much regulated environment to comply with HIPAA, CJIS, and other regulations. Provisioning hardware is relatively easy, but unified monitoring of the infrastructure is still lacking. Another area for improvement is chargeback models. It will go a long way in allowing the industry to be more pro-active in improving uptime and also more accurate in how we build cost models around these services.

Objectives:

1. Modernize/commoditize IT infrastructure

A dynamic IT landscape requires a scalable and responsive solution that forms the foundation for automation, mobility and versatility.

Modern applications and data workloads require a scalable infrastructure that provides rapid access to resources with seamless interoperability between the cloud and on-premises solutions. The hardware industry has led the way in laying the foundation for this transformation. We've seen hardware virtualization and application virtualization improve the overall ability of the industry to provision applications expediently. The focus has shifted from hardware, which is becoming a commodity, or just a means to an end, to solutions and/or application delivery that is at the forefront of IT Services today. We will apply modern technology and business principles providing an environment that firmly support SaaS. Some of the underlying challenges to support such a commoditized infrastructure include SLA's (Service Level Agreement), automation, redundancy, technical- and cost monitoring, show-backs/chargebacks, changing job descriptions and/or classifications, and financing.

2. Strong cyber security posture

A healthy cyber security landscape ensures the privacy, integrity and reliability of data and devices.

Cyber security touches everything IT. The industry is changing the way it looks at security: instead of the conventional preventive measures, it now uses AI (Artificial Intelligence) to identify, detect, prevent anomalies, forecast behavior, and predict outcomes which aren't possible with conventional methods. This is transformational for Cyber security. Security is many times an afterthought as industry is not always pro-active with the cyber security risks associated with new technology. It has come a long way, but there's many areas that still lag. The security landscape is changing rapidly and will continue to change as bad actors are becoming better organized and deliberate in their actions. IoT (Internet of Things) is having a huge impact on Cyber security; the surface in many instances has not been scratched yet when you think of it as anything with an on/off switch that can potentially be connected to the internet.

3. Business continuity & disaster recovery

Business continuity is essential to counter disastrous disruption; it is a matter of how long we can get by without a particular service, and then plan for it.

Business Continuity consists of three elements: resilience, recovery, and contingency. A plan needs to include measures to counter disruptions, for example, through redundancy; how to recover in case of a disruption; and having business continuity plans in place to cope with disruption. Typically, only a small percentage of IT solutions are deemed to be so critical to a department that their operations would come to a complete standstill or be so severely impacted that they cannot function in a productive manner. Availability is expensive: costs increase exponentially the closer the requirement is to providing a 100% uptime. For that reason, every solution needs to be analyzed, prioritized, and decisions made to determine the criticality to operations; it is generally referred to as a BIA (Business Impact Analysis). Disaster Recovery focuses on the set of actions that businesses will take after suffering a disaster, may it be natural or man-made. The root of disaster recovery is that data is kept in a secondary

location, and the actions and speed to recover that data during a disaster is dependent on the disaster recovery planning, infrastructure and processes that are set forth and tested.

4. Mobility

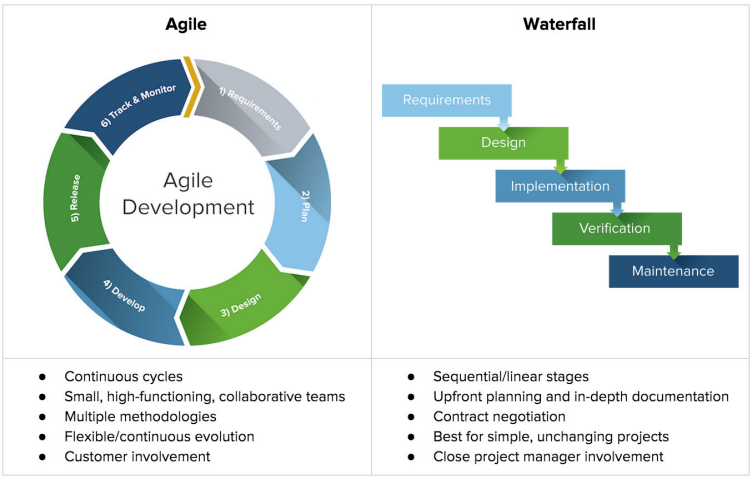
Provides the ability to access information resources from anywhere with any device.

The need for the average user to access resources and data from outside their physical working environment is increasing exponentially. The more people become connected, the more important it becomes to have solutions at our fingertips. Another important driver is providing services to entities that aren't directly connected or part of Macomb County Government. It completely changes the architecture to ensure that these services can be provided. Various technologies exist, some are very basic, and others are designed to provide more robust and secure services to users. The cloud, portals, and other technologies improved the availability of these type of solutions significantly. Developing and/or procuring mobile, cloud ready applications are going to be key in attaining this objective.

5. Robust, scalable application delivery

Creates a robust and standardized development environment favorable to the timely delivery of high quality, scalable applications.

In accomplishing the above Objective, we buy industry standard applications that provide the robustness and scalability we are after. Developing in-house applications is reserved for niche type solutions that cannot be purchased off the shelf. The focus is shifting to integrations, reporting and automation.



Keywords & phrases: Cloud assessment, hybrid Cloud, seamless integration between Cloud and on premise, HCI, tools to security metrics and progress tracking, application study for cloud readiness, Cloud ready applications, server baseline and metrics, status page/widget for each system, cyber security assessment, compliance, improving threat detection, security policies, compliance, cost mitigation with breach, mobile device management (MDM), security awareness training, improving thread detection, regular system patching, DR-plan & BIA, standardization, access from anywhere, access device agnostic, application hosting assessment, COTS first, evaluate application development standards, automated testing, optimize application use, cost in line with resource needs, with measurable improvement, develop and monitor metrics.

METRICS:

1. A modernized IT Infrastructure requires performance monitoring of resources and services to pro-actively mitigate disruption. Automation is a driving force.
2. A Cyber security study provides metrics to monitor, track & measure progress.
3. Metrics for Business Continuity includes regular reviews of audits, training, plans, policy updates and recovery testing.
4. The metrics for Mobility should reflect the following requirements: low maintenance, cost in line with services accessed, quality service, and being device and location agnostic.
5. Agile Application delivery enables timely, quality and efficient delivery; metrics should focus on those parameters and continual improvement of them.

Goal 3.

Institute cyclical evaluation and improvement of IT management, processes and structure to provide world class service delivery.

Although an organizational challenge for Macomb County Government in general, it put our IT Department under significant pressure to change the way we address the challenges of our most important resource, our employees. Thinking creatively around these challenges is key to providing a stable and pleasant work environment in IT.

In the process of providing a better work environment for our employees, it is essential paying attention in particular to creating well defined work processes, an efficient business office in support of our business model, clearly defined operational support and strong Governance; these are also essential components of attaining customer service excellence.

Objectives:

1. Highly skilled, motivated & proficient work force

In an extremely dynamic work environment, it is essential to cultivate a highly skilled, motivated and productive work force of self-starters.

The diverse talent needed in the IT industry, as well as a significant change in the needs of the modern-day employee makes it very challenging to accomplish this objective. It is a given that the average tenure is going down; currently it's only 1-2 years for tech jobs. This is mainly due to younger members of the workforce that looks differently at jobs than their older counter parts. We must think creatively about employee retention. Since the Executive form of Government took over, the County has gone through great lengths to provide competitive compensation, as well as a pleasant work environment. In IT we focus on creative thinking to provide a great environment for our folks to work in, for example 4-day work weeks, flexible hours, remote work, and accepting the fact that a valuable resource may only stay 3 years and developing creative ways to overcome that. Happy employees make for productive workers and a compelling case by providing a balance between a good work environment, job security, and quality of life.

2. Enhanced IT organizational processes

Process improvement, coupled with electronic workflows improves organizational efficiencies.

It is important for IT to practice what we preach by building electronic workflows around our business processes to gain the same benefits that we want our customers to realize. An additional benefit to us as a department and ultimately the County as a whole, is that it will also significantly improve our customer service. It provides us with a great opportunity to fix processes that can be handled more efficiently. The capabilities and tools we use in IT for supporting our customers is a direct correlation to how efficient and responsive we are. Our goal is to continuously improve and identify ways to do this better, faster, cheaper with less risk. It is essential that these processes are adaptive to the varying business requirements.

3. Production support

Provides a Service Operations Framework to make sure that IT services are delivered effectively and efficiently.

Production support deals with the "after requirements have been met" part of customer service excellence, one of our guiding principles. The primary goal for servicing our customers is to manage issues in a consistent manner, provide fast resolution, and proactively resolve issues before they impact our customers. This is challenging, because the reality is these tasks are many times performed by the same employees that are assigned as part of the implementation team. These tasks don't always align with our reporting structure. Another aspect that comes to the forefront is that we are now dabbling on the edge of SLA's - an unfamiliar world for Local Government IT. Although we do not have any in place, the expectation is sometimes at or close to that level of service. This comes at a cost; therefore, how do we respond? The question becomes whether we need to adopt all or some of the practices of ITIL (Information Technology Infrastructure Library) to attain the quality IT services we need to reach customer service excellence?

5. Governance

Sound policies, standards and procedures to oversee IT provides a framework for a well-governed organization.

Governance involves establishing measurement and control mechanisms to enable people to carry out their roles and responsibilities. Using this definition as a guideline, it is key to the success of our strategic initiatives to establish an overall IT governance process and an internal management structure that supports the achievement of the plan's three strategic goals. IT management policies and practices will continue to evolve and improve the effectiveness of IT management. The above addresses the structural part of it, however there's also a process component that defines the decision-making rights associated with IT as well as the mechanisms and policies used to measure and control the way IT decisions are made and carried out within the organization. It is important to address IT related functions currently addressed outside of IT and clearly define the role of IT and the authorities responsible for those areas, for example Digital Information and Geographical Information Systems under the umbrella of the newly appointed Public Information Officer and the Planning and Economic Development Department. If roles are clearly defined, it will not pose significant challenges. It is also not uncommon for some roles that are typically IT to be handled outside of IT. These boundaries will be challenged even more in the coming years due to the overlap in function, for example the close relationship between Marketing and a company's Digital footprint. It is also crucial to have a strong IT Governance that supports an ever-changing and more complex security landscape.

6. Re-evaluation processes

The implementation and ultimate success of this living document depends on an inter-active model, with metrics included, to ensure continuous improvement.

As technologies adapt and change, the contents of this document will have to adapt over time to stay current. The most important barometer for this content is to be aligned with the Office of the County Executive's strategic direction and guidance. It will be important to regularly go through the process of re-evaluation through Executive briefings, updates on strategic direction coming from the Office of the County Executive, feedback from our staff, results from Metrics being collected, and Strategic Plan reviews to ensure we stay current. In case we do find that we need to make changes to Goals and/or objectives to adapt, we will make the necessary changes to our strategic plan and apply it.

Keywords & phrases: training & training plans, boost morale, task tracking, balance workloads, employee retention, improve efficiency, team building, divide OT fairly, revisit customer liaison assignments, focus PM's on projects, re-evaluate and adapt Boss, onboarding employees, improve RFQ/RFP processes, reduce PMO documentation, streamline PMO, identify efficient project tools, set customer expectations, resource allocation tool, streamline change management, streamline procurement, inventory on hand, improve folder management, scanning, workflows, printer consolidation, standardization, policies, standards, communications, stabilization of systems before hand-off, tools assess effect of multiple application recommendations on one server, system outages, create & maintain knowledge base, service level agreements, decide about ITIL, IT4IT; ticket automation, core applications support model, software license management, issues to close tickets, accurate ticket assignment, canned responses, canned emails, ticket survey, pro-active training, informational emails, tips, root cause analysis, metrics and monitoring.

METRICS:

1. Employ, grow and maintain skilled, productive, happy employees and measure our progress.
2. Evaluate and implement improved electronic admin, purchasing and financial processes.
3. Evaluate and implement improved business office processes (e.g. project management and procurement).
4. Enhance operations and business support model with the efficient use of support tools, automation and standardization.
5. Define and implement policies, standards, procedures, formats, and tools to streamline IT Governance.
6. Set schedules and requirements for re-evaluation and updates to ensure this document is regularly reviewed and updated where necessary, as well as adapting our business and operations to information we learn from metrics.

CONCLUSION

These goals and objectives are a culmination of the strategic direction provided by the Office of the County Executive, input from our employees, executive briefings, a cloud study, as well as strategic discussions and ideas between my Deputy Director, our Strategic Team and myself.

Next steps include establishing teams that will compile the strategies or actions needed to attain our Objectives and ultimately our goals. An additional document, which will be completed by these teams, will outlay the plan of execution. In essence it will be a list of action items that explains the steps we have to take to attain the different objectives. It will also include priorities, metrics, and tracking to measure our performance.

ACRONYMS & CLARIFICATIONS

BIA – Business Impact Analysis
Civility – is claiming and caring for one's identity, needs and beliefs without degrading someone else's in the process. Civility is about more than just politeness, although politeness is a necessary first step. It is about disagreeing without disrespect, seeking common ground as a starting point for dialogue about differences, listening past one's preconceptions, and teaching others to do the same. Civility begins with us.
CJIS – Criminal Justice Information Systems
CVT's – Cities, Villages & Townships
DevOps – a compound of "Development" & "Operations"
DMS – Document Management System
HIPAA – Health Insurance Portability and Accountability Act of 1996
IaaS/ PaaS/SaaS – Infrastructure as a Service/ Platform as a Service/ Software as a Service
IoT – Internet of Things
IP – Internet Protocol
IT – Information Technology
ITIL – Information Technology Infrastructure Library
NIST – National Institute of Standards and Technology
SEMCOG – South Eastern Michigan Council of Governments
SLA – Service Level Agreement