With over 3.1 million residents, the County of San Diego is the second largest county by population in California and the fifth largest county by population in the nation. Fifteen years ago the leaders of San Diego County decided that in order to improve services to its customers – the County’s residents, businesses, and visitors – it needed to significantly improve its technology infrastructure and applications. In 1999, the County entered into one of the largest, most publicized and scrutinized technology outsourcing arrangements in the country. The IT Strategy sets a course for implementing technologies to carry out the mission of providing an IT environment that supports the County of San Diego Strategic Plan.

**COUNTY OF SAN DIEGO STRATEGIC PLAN**

The County Strategic Plan identifies key goals and disciplines outlining the County’s priorities for accomplishing the County’s mission and realizing its vision. To be effective, the goals that the County sets and the resources that are allocated are consistent with the purpose of the organization. The context for all strategic and operational planning is provided by the County’s Vision and Mission.

**COUNTY VISION**

A County that is safe, healthy and thriving.

**COUNTY MISSION**

To efficiently provide public services that build strong and sustainable communities.
The County’s Strategic Initiatives provide broad, organization-wide goals and help prioritize specific County efforts and programs.

**COUNTY STRATEGIC INITIATIVES**

- **Safe Communities** – promote safe communities
- **Sustainable Environments** – support environments that foster viable, livable communities while bolstering economic growth
- **Healthy Families** – make it easier for residents to lead healthy lives while improving opportunities for children and adults

The County’s Strategic Plan sets forth Required Disciplines necessary to maintain a high level of operational excellence and are essential to accomplishing the Strategic Initiatives.

**COUNTY REQUIRED DISCIPLINES**

- Accountability, Transparency and Ethical Conduct
- Customer Satisfaction
- Fiscal Stability
- Regional Leadership
- Skilled, Adaptable and Diverse Workforce
- Continuous Improvement and Innovation
- Essential Infrastructure
- Information Services

**Information Services** is a critical enabler of innovation in the delivery of County services and programs. To keep up with advances in Information Technology (IT), the County has and will continue to outsource its IT operations while maintaining strategic oversight of the technological direction. The County’s goal is to provide a reliable, integrated Information Services environment that meets not only today’s needs for communication and business efficiency but also positions the County to leverage new technology innovations and best practices for business transformation and improved service delivery in the future.
The County aims for continuous improvement and increased efficiency in departmental business operations. Prudent use of technology enables the County to deliver services that are more convenient to customers, increasing the volume of business transactions completed remotely. The County will accomplish this by:

- Offering more internet-delivered video and audio communication options as an alternative to services typically conducted in-person
- Providing more robust online customer self-service capabilities, including requests for information or service, status tracking and inquiry
- Reorienting the public website to provide a citizen-centric experience

The County is evaluating, is currently implementing, or is already utilizing the following technologies to expand communication capabilities:

- Virtual Meetings
- Online Chat
- Identity and Access Management
- Electronic Forms
- Digital Signatures
- Customer Relationship Management System
- Responsive Design of Web Sites and Mobile Apps

1. **Provide an IT environment that enhances communication among County employees and their customers**
2. **Leverage technology to increase the speed of County business processes.**

Technology advances are driving increased expectations for fast turnaround times – getting things done at internet speed. The County strives to meet those expectations, using technology to simplify and streamline services to citizens. The County will use technology to:

- Reduce wait times on phone, online, and in line, for both employees and the public
- Enable customers to complete an end-to-end process entirely online
- Make services available on the fastest, most convenient media and devices

The County is evaluating, is currently implementing, or is already utilizing the following technologies to shorten the time to complete County business processes:

- Mobile-enabled Websites and Apps
- Instant Messaging and Presence Tools
- Interactive Voice Response Systems
- Automated Approval and Workflow Systems
- Smart Search Capabilities on Websites

3. **Provide a reliable, predictable, secure and efficient infrastructure.**

Just as consumers expect utilities such as power, light and water to be available 24/7, IT infrastructure must be able to meet the demands of greater wireless coverage at County locations, a growing variety of devices attached to the network, and increased network traffic volumes - punctuated with occasional surges – all delivered seamlessly, securely and with predictable costs. The County’s infrastructure must:

- Provide expanded wireless availability at County facilities, for both employees and the public
- Accommodate increased use of sensors to collect data to comply with regulatory changes
- Handle higher volumes of video traffic as use of cameras expands and County events are streamed online
- Provide storage solutions that flexible and affordable
The County is evaluating, is currently implementing, or is already utilizing the following technologies to shorten the time to provide a robust infrastructure:

- Data Loss Prevention technologies
- Selective use of Cloud Infrastructure Services
- Expanded Wireless Capacity
- Network Redundancy

4. Utilize data collection technologies combined with analytics to enable employees to make decisions in near real-time.

The combination of huge numbers of diverse data collection devices and data stores with expectations for rapid situational analysis will drive the County into a new generation of decision support systems. To support both routine and emergency situations, the County needs technologies that transform data into information, and apply business-rules to information, triggering alerts and other automated responses. The County will:

- Rely on technology to perform analysis and make recommendations
- Share analytics among multiple departments and agencies
- Balance “open” and “secure” access to data and information

The County is evaluating, is currently implementing, or is already utilizing the following technologies to support rapid decision making:

- Business Intelligence Systems including Data Analytics and Predictive Analytics
- Executive Dashboards
- Geographic Information Systems
- Wearable technologies such as health monitors and on-person cameras
- Machine to Machine Technologies
5. Create an IT environment that fosters and supports innovation at the enterprise and business unit levels.

To carry out its Strategic Initiatives, the County of San Diego depends on IT to be an enabler of innovation, both for department-specific needs and enterprise-wide solutions. The County encourages the use of new technologies, and whether driven from the top of the organization down, or the bottom up, innovation comes from the business and IT.

The County will foster innovation by:

- Anticipating change by developing and implementing technologies with an eye to the future
- Adopting policies and methodologies that reduce time to market
- Educating employees about emerging technologies and reducing barriers for usage

The County will continue to evaluate and when appropriate, provide low risk, low cost options to stimulate innovation, such as:

- Cloud solutions for proofs of concept, pilots and development
- ITO Innovation Council technology presentations and County-sponsored educational events for employees
5 Tenets of the IT Strategy Support the County Strategic Initiatives

IT projects align with the 5 Tenets of the IT Strategy, which support the County’s 3 Strategic Initiatives. Projects may enable a particular Strategic Initiative or provide an enterprise-wide capability.
The five Tenets of the IT Strategy - communications, speed, infrastructure, decisions and innovation - set the direction and priorities for IT initiatives. Underpinning the five tenets of the IT Strategy are twelve Functional Domains - IT capabilities that are essential enablers for delivering high quality services to the public.

**IT FUNCTIONAL DOMAINS**

The IT Functional Domains are derived from the Tenets of the IT Strategy, and support the technical direction of the County. The twelve Domains are the core technology components required to successfully support the overall strategic direction of the County of San Diego.

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1. Enterprise Leadership
The Enterprise Leadership domain refers primarily to the integration of business context and direction to Information Technology (IT) vision, initiatives, projects, and sourcing. Where specific technical projects or initiatives are not articulated, Enterprise Leadership develops direction for continuous improvement, emerging and strategic technology, collaboration, thought leadership, governance, operational excellence, increased customer satisfaction, sourcing direction and fiscal responsibility. Attributes of Enterprise Leadership establish a course for meeting the ambitious goal of being a “World Class Information Technology” organization.

Leverage current and emerging technology innovations for business transformation
The County seeks to continually identify and apply new technology in innovative ways to enhance and transform business processes to increase efficiency, reusability, and streamline ways to deliver services. Emerging technologies are always on the watch list and evaluated based on challenges and opportunities provided by the County departments that drive business delivery.

Operational excellence through continuous improvement that allows business to excel
Leadership in planning for the continuous improvement of County IT Operations is essential to becoming a world class IT organization. Achieving operational excellence requires elimination of single points of IT failure, building multiple paths of redundancy for applications, storage, networks and the basic IT foundation, planning for circumstances beyond the County’s control, and responding to events in a timely and efficient manner.

Collaboration
Collaboration is a work behavior that is defined as a set of functions and processes that support people working together. IT is an enabler and also an advisor to the business units in all aspects of increasing the use of and the benefits of collaboration.

Improving County-internal customer satisfaction
Annual IT surveys are used to quantify internal customer satisfaction from year to year with the objective of identifying targets for improvement. The technology is only part of the solution; whereas usability and functionality are critical to a successful implementation of any solution.

Sourcing Strategy
A sourcing direction and strategy needs to adapt to changes in technology, business operations and the competitive landscape. As the cloud environment matures, the County continues to evaluate alternatives for providing essential infrastructure and applications off premise.

Fiscal Responsibility
While striving for solutions and increased customer satisfaction, being fiscally responsible and quantifying costs and benefits are part of every evaluation. One-time and ongoing costs are important evaluation criteria for solutions proposed.
2. **CUSTOMER ENGAGEMENT**

The Customer Engagement domain describes the technology direction that enables business to build on-line services that engage, interact and otherwise provide a beneficial service to customers. Customer Engagement is more than just social media, web presence, forms and standing in lines. This domain is highly dependent on the direction of business in the establishment of services needed to support and engage their respective clients. IT provides the needed platforms, the common and reusable technology, the consulting on the “how”, and the support to develop and execute IT projects that meet business goals. IT will continuously build and improve needed technology to maximize business success by delivering stable, reliable, reusable and time saving components, along with greater capacity to handle future and predicted loads and analytics that quantify and measure success.

**Making it easier for business units to develop new on-line services**
Developing reusable and common IT services and platforms leads to decreases in overall time to market. The intent is to maximize and standardize on tools that facilitate business applications which in turn put on-line services out to customers expeditiously.

**Making it easier for customers to access business services and data**
Delivering more services means organizing and grouping services so they are easy to find, easy to use, and accessible in various ways. This includes organizing a services-based layout on the internet for customers to access, providing end to end processing, and grouping like services to improve overall user experience.

**Develop interactive or two-way channels for feedback and communications to customers and customers**
With the addition of new online services, feedback from customers is essential to get input, new ideas, and ways to constantly improve the delivery. Organizing and disseminating feedback efficiently to the right parties ensures that action can be taken in the lifecycle of improvements. Creating a way for customers to update contact information, get status on service requests and subscribe to alerts about topics of interest are key steps to increasing satisfaction.
3. **Identity and Access Management**

The Identity and Access Management domain is focused on creating a centralized view and control for people and organization identities that need access to data, programs and information provided by the County of San Diego. It will enable enterprise single sign-on, authenticate users, automate user provisioning, add security controls, and become an identity provider at the enterprise level. Automation and self-service capabilities will increase quality, efficiency and cost effectiveness of the services provided to internal and external users.

**Increase internal efficiencies with identity management**

With an organization as large as the County of San Diego, gaining efficiencies on the internal processes are critical. Enabling single sign-on, automating provisioning, and automating attestation and auditing identities will eliminate manual processes, reduce inaccurate setups, and shorten the timeframe to obtain access to information users need.

**Identity lifecycle management**

The identity lifecycle includes the ability to audit, manage, report and verify access and authorization rights. With a full lifecycle management in place, users have a single identity and additional capabilities can be layered on, such as single sign-on, attestation, and security policies for ease of use and stronger controls for security. Lifecycle management of identities would include all employees, customers, business partners, and external entities.

**Self Service**

Enablement of self-service components such as password resets, initiation of workflow requests for access, attestation responses and user validations will increase efficiencies to the workforce and overall administration.
4. **Security**

The Security domain includes measures and systems designed to protect and safeguard information. Secure technology guards creation, storage, use and exchange of information against any unauthorized access, misuse, malfunction, modification, destruction, or improper disclosure. Robust information security measures preserve the value, confidentiality, integrity, and availability of data and systems, enabling business units to perform critical functions.

In order to secure and protect IT resources commensurate with the County’s mitigated risk tolerance, IT Security ensures:

- The ability to change current services and deploy new services rapidly and securely
- The harmonization of information security policies, standards and practices across the organization
- A nuanced approach to information security services based on consistent, thorough IT risk management
- A high degree of assurance that sensitive information is protected throughout the County at rest and in transit, and that the County is compliant with regulatory requirements
- Information security services such as identity management, federated access and mobility solutions to enable the County’s workforce to perform their jobs effectively and allow greater citizen access to County services

5. **Information Management**

The Information Management domain sets the direction and shapes the County’s enterprise information management vision. Effective enterprise information management delivers relevant and actionable information that is reusable, trusted, and available both internally and externally. The Information Management domain will utilize tools from other functional domains to enhance and produce quality information through various methods for consumption by end users, partners and Public Information Act requests.

**Deploy solutions that deliver relevant and actionable information that enable impactful decision making**

Information Management entails the ability to provide reporting of historical and current data, track leading indicators, and present the business driven information through a tool that is easy to use. Validations and sets of controls will ensure that the data is trustworthy and derived from an authoritative source.

**Provide highly reusable and trusted data that can be readily applied in accordance with individual County departments and enterprise needs**

The County will provide trusted data that is accurate and has been through a data quality process. The data has to be meaningful and its metadata attributes provided in a manner that is understood by the end user, regardless of where the data resides within the enterprise.
6. **CLOUD**

The Cloud domain evaluates cloud technologies and establishes guidelines for use of cloud solution providers by County departments. The County will leverage cloud computing technologies to achieve scalability, cost efficiencies, and improved system utilization. Cloud technology will be leveraged to meet business needs through an appropriate blend of internal and cloud platforms.

**Targeted migration (not big bang) from on premise computing to cloud and the integration of both**
The County will review applications that can potentially be moved to the cloud through a governance process that vets County policies and practices to assist in decision making and final best-fit solutions. Cloud solutions are application-specific hence the potential benefit varies and will be assessed individually for benefits to the County on a case by case basis.

**Develop interfaces to move data securely between cloud and on premise**
At times cloud solutions require interfaces to and from County on premise solutions which will be assessed for interoperability between systems with proper security and access requirements.

**External identity management for cloud-based applications and services**
Whether on premise or in the cloud, the solution should be seamless to the end user or customer of the application. The identity management lifecycle and authorization provisioning are important considerations when moving applications to the cloud.

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7. CONTENT MANAGEMENT
The Content Management domain improves the visibility and manageability of unstructured content. Content management establishes a platform foundation that provides single source of truth, and implements controls that increase reusability and information sharing. Version management, record retention and metadata are key functions that enable collaboration. Federation is the final piece that supports content management and search capabilities, making the data accessible and usable.

Improve employee efficiency through collaboration and data sharing
The County will leverage common tools and features to promote interoperability and collaborative experiences. Federation will be a key element into the data sharing and integration of different systems.

Reduce redundant and obsolete content
As data proliferates and copies of documents multiply, the County will evaluate tools that identify and reduce obsolete and duplicate content.

8. ENTERPRISE FOUNDATIONAL SERVICES
The Enterprise Foundational Services domain provides standardized, foundational technology components that ensure stable, efficient and secure operating infrastructure.

Continuous improvement and consolidation of the virtualized infrastructure
The County gains efficiency by leveraging platforms, virtualizing environments, and consolidating servers where possible. The focus is to do constant evaluations and identification of candidates to leverage when integrated within a project or next upgrade to reduce the one-time cost and still gain the benefits of consolidation and virtualization.

Adaptable infrastructure that allow the County to respond rapidly to developing business requirements
Standardizing on platforms and leveraged models will enable the County to shorten timeframes to build or make development/test/productions environments available for use.

Improving reliability and resiliency of infrastructure
The County will improve the reliability of the infrastructure by increasing redundancy and availability, and by pinpointing single point failures and correcting them.
9. Portfolio Management
The Portfolio Management domain provides a consistent approach and improvement across the portfolios, project management and program management through oversight of department key projects and initiatives.

Comprehensive view of all IT projects
The County will assess and evaluate all projects to identify dependencies or risks that would justify oversight or assistance in order to be proactive on those projects/programs. The County will also establish key checkpoints to ensure the projects are evaluated for compliance to County standards.

Manage applications as assets, with documented performance criteria
The County will utilize performance testing tools and establish a practice that evaluates the potential performance of the systems being implemented through a project and also the performance of the project itself. Performance measurements will be built into the project for acceptance to be process.

Close the gap between IT project outcomes and customer satisfaction
The County will establish effective and efficient process improvements to close the gap between what the customer expects as an outcome of a project/program compared to the actual outcome that meets business requirements documented.

10. Unified Communications
The Unified Communications domain includes convergence and integration of multiple, real-time communications services.

Unified Communications will simplify and integrate communication media, and increase workforce productivity
The County will identify additional communication and collaboration features in existing tools that will enable users to interact easily and with familiar tools, such as video and web conferencing. The County will evaluate products that integrate into existing tools, applications, devices to create a seamless user experience.

Unified communications is not a single product, but a set of products that provide a consistent user interface across multiple devices.
The County will enable employees to access communication and collaboration tools from any device, any time. Using the same tool that is accessible from multiple devices will allow users to minimize the learning curve and become efficient users of the tools.
11. Mobility
The Mobility domain provides a consistent approach for enterprise mobile enablement, allowing County employees or customers access to data, programs, and information securely. The County will implement tools to develop mobile applications and deploy them into a secure, supportable, controlled and managed architecture that is device agnostic and product aware.

Mobile Application development platform
The County will create the ability to develop and deploy mobile applications quickly, as time to market is critical in responding to business needs. The goal is to accelerate the transformation of ideas into applications that are product aware and device agnostic.

Mobile Device Management (MDM)
The County will deploy an MDM Platform to provide secure connection to internal County resources from secure devices while managing data on mobile devices.

Enable Bring Your Own Device (BYOD) to increase workforce flexibility
As the variety of mobile devices used by employees increases, the County will adapt existing applications and develop new mobile applications to support employee-owned devices.

12. Geographic Information Systems (GIS)
The GIS domain is a strategic enterprise platform of technology with a high operational impact. Its users seek to create, collect, maintain and distribute high quality, up-to-date, and complete geospatial data and services. The County will raise the awareness of both the beneficial business applications of GIS and seek to cultivate the advanced analytical use of the technology among its users, while lowering costs.

Share the County’s GIS data and services as widely as possible
The County will provide consumable data and services as needed by the public to promote transparency and open government.

Assist agencies to integrate spatial technology into their business processes and applications
As public expectations for and usage of location-based services on mobile devices increases, the County will incorporate those capabilities into business processes and leverage the technology to modernize business applications.

Support emergency planning, response and recovery
GIS must be accurate and timely in emergency situations. The County will continue to improve GIS data and services to support disaster response and recovery.

IT is an abundant field of dreams. However, even the most enticing technologies can disappoint, if they do not enable the business to be more effective. As Bill Gates said “The first rule of any technology used in business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency.” The County will be diligent in evaluating new technologies, adopting new solutions that improve business operations while maintaining a stable and integrated IT environment.

COUNTY TECHNOLOGY OFFICE