

LOB #140:

AGENCIES SOFTWARE SOLUTIONS / DEVELOPMENT SUPPORT

Purpose

The Agencies Software Solutions and Development Support LOB is responsible for software and solutions development and maintenance for County agencies' core applications and data reporting on all technology platforms. It provides technical leadership in the planning, design and architecture/ configuration and data structure phases of system development, working with agencies in understanding their business needs in determining solution design whether a total custom build or implementing a Commercial-Off-the-Shelf (COTS) or Software-as-a-Service solution (SaaS cloud). In that work, this LOB conducts business process and systems analyses, develops programming logic and computer code and applies in-depth technical and theoretical knowledge and experience in solving highly complex architectural design problems associated with the business and associated legislative and other legal and statutory requirements.

Description

Within this LOB, DIT has a center of excellence team with trained staff experts on the SAP enterprise resource planning (ERP) application. This is a highly unusual phenomena, whereby many organizations with major ERPs systems rely on expensive consultants to perform post implementation on-going normal support. According to SAP, Fairfax has been able to implement and run both a large county and school system on a single instance of SAP ERP, an extremely efficient and low cost environment per user. Gartner Research is writing a white paper highlighting Fairfax County's achievement. Ongoing work can be performed to include required upgrades and turning on functionality can be done in-house with minimal augmented contractor support.

Some of the key staff knowledge, skills, and abilities regularly provided include project and systems implementation planning and estimating, change management and enhancement prioritization, implementation, translation of requirements to specifications for solution solicitations, technical negotiation of contract terms and conditions to protect the County's interests, technical project management.

In addition to the portfolio of production applications supported, this LOB also supports a continuous-improvement technology investment program that modernizes systems, and plans for the acquisition and implementation of new systems when existing systems reach end of life. These technology professionals analyze business requirements and determine the appropriate technology options to meet those needs. They provision multiple technical approaches, development platforms and methodologies, and solutions needed to support a diverse enterprise with the 50+ departments in Fairfax County government.

Applications developed and supported by this LOB integrate with the County's award winning e-Government and GIS programs. The analysts and programmers apply business intelligence and data analytics tools to improve data mining and decision support capabilities. They apply interface and integration tools and utilities to provide seamless interoperability between disparate systems and data and transactions. Due to organizational centralization, the County's computer applications support is both leveraged for efficiency and highly effective. Staff are allocated to systems and projects as needs dictate, for both business, data and technical knowledge requirements, and project management.

Directly supported systems are stable, perform reliably, pass the scrutiny of multiple audit functions, and meet the core mission requirements of the many agencies supported. The financial, procurement, human resources and tax systems are reviewed annually by the external audit process for adequate controls.

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Staff supporting this LOB regularly evaluate business process impacts, assist in reviewing alternatives, propose resolutions, and implement resolutions to problems. Staff are also very involved in the development and technical review of multiple Request for Proposal (RFP) documents that are supported by the annual IT investment portfolio. Significant value is added as staff work continuously to leverage and extend this financial investment by finding synergies and efficiencies, such as having multiple departments with similar business needs utilize the same system. The staff in this LOB also serve as the Technical Project Manager for major projects and in that work, are the subject matter expert lead and work with the Technology Infrastructure and Cyber Security LOBs for determining the underlying solution architecture and supporting infrastructure plan.

Both federal and state regulations mandate that Fairfax County report and provide information to numerous federal and state agencies and databases. These application development staff work closely with agencies to fulfill these requirements. Many examples of this include the public safety and human resources areas, including: update of the Virginia Compensation Board's Local Inmate Data System (LIDS) database from the Sheriff's Adult Detention Center Information System (ADCIS) to ensure correct prisoner reimbursements from the state; update of the Virginia Crime Information Network (VCIN) and subsequently the Federal National Crime Information Center (NCIC) from the supported Police Records Management System (PRMS) consisting of numerous databases to enable accurate queries by other law enforcement jurisdictions; provision of mandated Incident-Based Reporting (IBR) statistics to the State Police also from PRMS.

Following the Board of Supervisors' overall charge for IT government "without walls, doors or clocks", many of today's applications, data mining and transparency, and information lookup queries are provided to citizens 24 hours a day, 7 days a week. Even though DIT application development staff work full workdays, many of them are also available after hours and on weekends to provide critical operational support for certain applications and during deadline periods which result in heavy business transaction activity. Certain public safety and critical functions such as the adult detention center and the County website Internet applications require 24x7 IT applications support.

Samples of in-house application development primarily completed by County staff include the Human Services Resource Guide (HSRG), Automated Systems for Integrated Services Teamwork (ASSIST), the Registration system for therapeutic recreation programs (TRACERS), the Victim-Witness System, adoptions System for Circuit Court, Court Services Court Appointed Attorney system to appoint and pay attorneys, warning ticket process and system for the Police Department, Jail Management system, and others. Other major applications supported include the Personal Property Tax system, the Integrated Parcel Lifecycle System (IPLS), Zoning and Planning System, LDSNet and the Plans and Waivers system for DPWES – Land Development Services, the Child Care Management System, Interactive Voice Response system applications, Master Address Repository, hundreds of interfaces between County internal and external systems, and multiple electronic document management and imaging systems for a variety of agencies.

Staff also provide system solutions architecture, reporting, version implementation, and testing and integration services for many commercial-off-the-shelf (COTS) applications. Some examples of COTS software applications supported include: directly supporting the FOCUS SAP application for Finance, and Procurement (used by both the County of Fairfax and Fairfax County Public Schools), and SAP Human Resources/Human Capital Management, Real Estate CAMA System; Harmony Social Services System; Plan Submission, Inspections, Permitting and Complaints Management System (FIDO); Library Card Catalog and checkout system (Sirsi); Police Records Management System; Credible Electronic Health Records for the Community Services Board; and the Customer Relationship Management (CRM) software used by several agencies, including the Board of Supervisors, to track issues, conduct constituent correspondence, track complaints and events, and provide assistance and answers to citizens.

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Benefits

Centralized support of information systems, applications, and data provides IT service staffed with IT subject matter experts that can have both knowledge in County business and technology-specific skills which can be portable in being assigned to various tasks, resulting in better overall utilization and lower cost instead of IT resources being dispersed throughout agencies and not effectively coordinated. The Board appointed Information Technology Advisory Group (ITAG) of County leadership, citizens and IT industry experts advised that maintaining separate organization focus to be a “serious impediment to effective technology utilization”. The establishment of the central DIT organization has been beneficial in that:

- Centralized planning and prioritization of all medium to large application development projects
- Leverages the allocation of IT project funding investments by requiring multiple departments with similar business functions to utilize the same information system (where this makes sense)
- Optimizes use of IT resources, knowledge and expertise and achieves efficient use of software maintenance resources and cost
- Holistic view -prevents duplication of independent systems for the same core purpose; transforms data into information for better management decision making across systems
- Leverages repeatable processes for development and reporting
- Standard methodology and consistency for automating business processes and transactions for more predictable customer service outcomes
- Departmental resources can focus on business needs, thus allowing better use of staffing in departments; allows departments to achieve new customer service and transaction processing efficiencies by utilizing new systems and technologies
- Offers convenience and flexibility for agencies to meet their mission-critical business initiatives by focusing on business value
- Allows fluidity with business changes and requirements
- Enables active user involvement and representation by providing high visibility which results in better business engagement and improved customer satisfaction.
- Leverages customer preferences resulting in a higher-quality product
- Allows quick assembly of the correct resources to development and project efforts tapping readily available technical skills

Mandates

While the Agencies Software Solutions and Development Support LOB itself is not specifically mandated, the application development software and systems and enhancements do support many mandated reporting functions for multiple departments across the County. The LOB is critical for the efficient and effective operation of and services provided by the County government.

Trends and Challenges

Industry trends in software applications is toward 'cloud' based solutions, also referred to as Software-as-a Service (SaaS). This commercial business model, however, is based on the ability for customers to use functionality available in the service without modification. These solutions still require customer involvement to conduct the customer specific configurations, manage data, do specialized reporting, and to ensure that interfacing to the 'cloud' is operable from the customer's IT enterprise. Many County business apps have significant state mandated legislative requirements that are unique to Virginia, thus often times requiring significant changes. This is why DIT still develops certain solutions for agencies as commercial offerings are often not available or feasible. ITPAC has advised DIT to proceed with caution in going to cloud solutions. Another issue is that the SaaS clouds also provide the underlying server infrastructure which is part of the annual cost, thus unless the preponderance of apps are outsourced, there are minimal cost savings achieved.

All applications whether COTS, SaaS, or developed must be WEB and mobile ready, and with integration to Internet capabilities as appropriate for best reach to the public and user experience

Challenges in the market and for DIT include:

- Rapid pace of change in technology industry; often times shortly after contracts are awarded, the firm is acquired by another larger firm and the level of commitment to the just implemented solution is at risk.
- Each year, business departments are regularly required to do more with less, and this increases the demand and expectation upon LOB resources to constantly implement more change in applications (many business functions can only be more efficient with investments in information technology; cannot also make large cuts in IT investments needed to achieve further business efficiency).
- Demand for a more seamless user experience across all devices (mobile and wireless apps)
- Demand for more systems integration with many other systems
- Big Data – the ability to mine data for management decision making and predictive analytics
- Faster systems development and implementation cycles requires more agile application development processes
- Greater security focus to protect and secure data within the application requires this to be a higher priority in application development
- Departmental expectations of high performance, high visibility, and high availability; 24x7 applications with no down time increases demands upon both staff and budget resources
- Need to invest new application development tools and techniques training for staff
- Consideration of new application development platforms and how those opportunities apply to the County and the required changes in staff skillsets (i.e. software as a service; cloud computing, etc.).

A major challenge is to be vigilant in promoting the use of more enterprise like solutions that multiple agencies can use, versus the tendency for agencies to believe that they can go on their own and that a vendor specific product they found meets their needs and a simple 'plug and play' is all that is needed to implement. There are multiple instances where this has been problematic. The ultimate effect has been that risk and costs have been higher to fix the poor solution, to include delays and residual compliance problems. Also, often times this phenomena occurs based on special grant funding initiatives. Another major challenge is that agencies tend to not want to go through business process reviews and change processes to take advantage of new solutions, and/or also look across their silos to be sure that cross-agency processes can be enabled with new technology.

Finally, in this arena, there are some specialized expertise requirements that require salaries beyond the traditional County classification system. Prior studies conducted suggest a separate scale for IT professionals to help achieve competitiveness with the Northern Virginia technology industry marketplace, to have in place a reasonable amount of employees to lead work.

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Resources

Category	FY 2014 Actual	FY 2015 Actual	FY 2016 Adopted
LOB #140: Agencies Software Solutions / Development Support			
FUNDING			
<u>Expenditures:</u>			
Compensation	\$8,306,511	\$8,142,601	\$8,279,865
Operating Expenses	155,522	574,030	741,005
Total Expenditures	\$8,462,033	\$8,716,631	\$9,020,870
General Fund Revenue	\$0	\$0	\$0
Net Cost/(Savings) to General Fund	\$8,462,033	\$8,716,631	\$9,020,870
POSITIONS			
Authorized Positions/Full-Time Equivalents (FTEs)			
<u>Positions:</u>			
Regular	91 / 91	91 / 91	89 / 89
Total Positions	91 / 91	91 / 91	89 / 89

Metrics

Metric Indicator	FY 2013 Actual	FY 2014 Actual	FY 2015 Actual	FY 2016 Estimate	FY 2017 Estimate
Number of Major Applications Developed	72	43	62	45	55
Number of Application Maintenance Activities	273	251	296	305	270

The teams in this LOB support the core operations of the County for over 400+ County agencies' business specific and enterprise-wide computer applications for public safety, public health, human services, revenue and taxation, and land development, finance and accounting, purchasing, payroll and human resource management, libraries and facilities management and many others. Contained within these applications are all of the critical business rules and algorithms and fees structures and approval conditions to support ongoing critical County operational and customer service needs. The teams also provide assistance for hundreds of small agencies' developed Access and SQL databases.