Nevada County Enterprise Architecture Plan

Guiding Strategies and Framework for Current, New and Future Information Technology Projects and Systems

Table of Contents

1.   <u>Introduction</u>

An Enterprise Architecture (EA) describes the people, processes, and technologies that an organization utilizes to develop their technology solutions. This document is meant as a guide to assist customer department business managers and Information Systems Department staff in working together to implement and mature Information Technology (IT) projects and services at the County of Nevada.

EA's came from the need for larger organizations to take an enterprise perspective as they developed their IT systems. Highly decentralized organizations such as the Federal and State Government, and large Counties struggle with duplicative IT systems, services, staffing, infrastructures, and data stores across the enterprise that do not always work well together. This environment is extremely costly and counter productive to the larger organization's mission. EA's help organizations get on the same page and align decentralized departmental IT initiatives with the greater enterprise organization's business objectives and mission.

Nevada County enjoys an IT governance and technical environment that is not plagued by the above issues. This is due to several factors.   First, we are a smaller organization where it is practical for top level executives to be informed and involved on all major IT initiatives. Second, we operate a 100% centralized IT Department model in which all IT projects, systems, infrastructures, and IT staff fall under the direction of a single Chief Information Officer. Third, and most importantly, Nevada County enjoys a highly functional collaborative IT Governance model called the Nevada County Technical Partnership which places information technology strategies and decisions in the hands of departmental business managers. Due to our unique environment, this EA document will focus more on people, processes, and technical strategies and not include the in-depth technical specifications, standards, and policies which can be found in the IS Department's documentation collections.

Since 2000, the IT Governance model and resulting Enterprise Information Technology Strategic Plans have led Nevada County through significant technology investments that have been in full alignment with the greater County's mission and business objectives. These investments have replaced major legacy applications, rebuilt core infrastructures, and put in place a list of robust enterprise technical services and capabilities. Due to our IT Governance process and central IT structure, a consistent enterprise perspective has always been maintained throughout all the County's IT projects.

However, as technologies have advanced and matured, it has become important to have an EA framework in place to properly direct and coordinate new IT projects and fully mature existing systems and infrastructures. At any one time, Nevada County has numerous concurrent IT initiatives taking place. It is important that the different IT development teams, project teams, technical professionals, IT users, and County department management teams are consistently coordinated, informed, and in alignment with the County's IT strategies and business objectives.

<u>A side note for information architects:</u> This document takes a streamlined EA approach customized to Nevada County. We believe it is more important to coordinate people and processes with overall IT strategy and direction than following broad industry EA models that are designed for larger, decentralized organizations. Thus, much liberty was taken with models, domains, and terminology. While the Federal OMB and Gartner's EA models, NASCIO's EA tool-kit, and even The Zachman Framework to list a few are all very solid EA methodologies, they are deemed overly complex and unnecessary for our particular requirements.

2. Purpose - Nevada County Enterprise Architecture (NCEA)

The NCEA is a framework that assists and directs new Information Technology projects into the Nevada County IT Environment (NCITE).

A. To reduce IT infrastructure redundancy, total cost of ownership, and maximize the County's investment in the NCITE.
B. To insure that the NCITE is reliable, available, and sustainable.
C. To build and enhance enterprise IT capabilities available to all County departments.
D. To insure the NCITE is current with Federal, State, and Industry standards and will continue to stay so as it evolves and grows into the future.
E. To insure the NCITE is manageable and does not become too complex.
F. To ensure the NCITE meets the County's needs and expectations.

3. The Nevada County Enterprise Architecture Framework Diagram
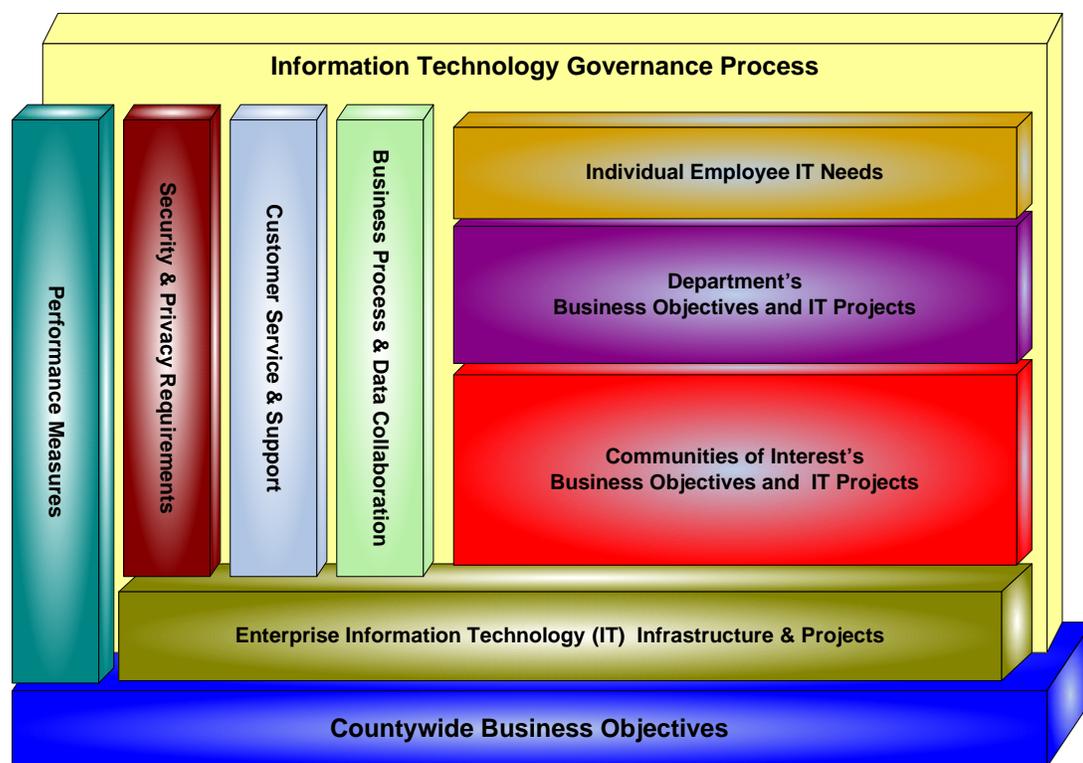
4. Guiding Principles

County Department's (IT consumers) business process needs and requirements have higher priority than rigid IT technical standards. Countywide business objectives drive IT direction and are the foundation for this framework.

A. IT projects do not live in a "vacuum", they must co-exist effectively and interoperate with other systems in the NCITE. To insure this, each new IT project must be evaluated with the NCEA as a guiding tool.

B. The number of IT systems and technologies the County can support has a limit. New projects must whenever possible leverage existing resources, both technical and human to accomplish their goals.

C. The County has a very robust enterprise IT infrastructure in place now. These resources should be first fully evaluated for applicability in new IT projects before additional technologies are purchased or implemented. Common business solutions should be shared across the enterprise. When new projects introduce new technologies, they should if possible do so in an enterprise manner, building a new foundation for future projects to leverage. An enterprise-wide perspective should always take priority.

D. Systems and infrastructures should be evaluated and implemented to insure as much interoperability as possible within the existing NCITE.

E. Data is an enterprise asset and should be managed from this perspective.

F. IT security is a growing concern; new projects should meet County IT security requirements and help sustain on-going IT security efforts.

G. New IT projects should fund the immediate and long term costs of all related impacts from the project on the NCITE.

H. The NCEA should foster and support an agile NCITE adhering to industry standards, allowing the rapid, dynamic delivery of high value IT solutions to Nevada County Departments. The NCITE should mature to a Service Oriented Architecture or SOA. With a SOA, the County can focus on building composite process solutions.

I. Technology is a constantly changing and fluid industry and environment. The NCEA is a living and guiding document that cannot address every concern, issue, and question in detail. Final determinations for standards and policies (for example: security and network infrastructure) will take place as new IT projects progress through the appropriate IS Department management personnel.
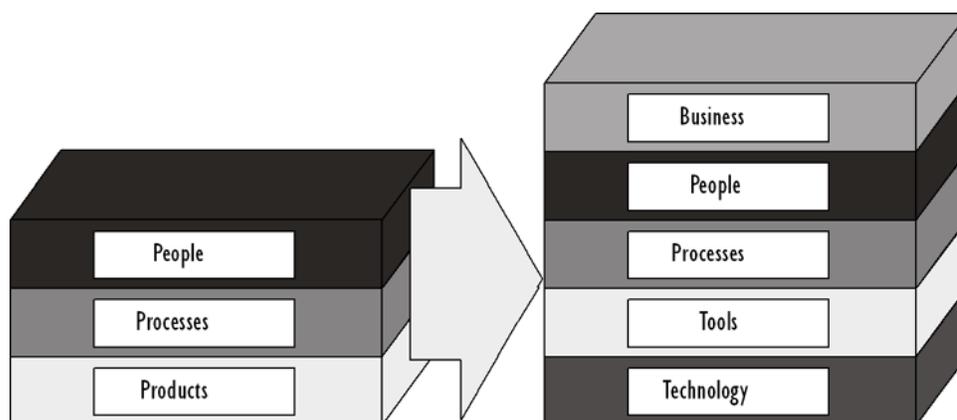
5. Nevada County IT Governance and Funding Models

In 2000, a Collaborative IT Governance (user centric) model was introduced and implemented in Nevada County. The governance system places IT decisions in the hands of County departmental business managers. Key to the process is the concept of "Communities of Interest" (COI) which form virtual organizations comprised of departments that take part in like activities. Each COI evaluates and collaborates on new IT projects that touch their COI members. They resolve issues related to project funding, data access and sharing, and IT resource sharing. Once in alignment, the COI brings the project to the Information Systems Steering Board (ISSB), which evaluates each project on an enterprise perspective. If approved by the ISSB, the project then goes to the Board of Supervisors for final authorization. The full IT governance model can be found in detail in the "Nevada County Enterprise Information Technology Strategic Plan 2000" found at: http://new.mynevadacounty.com/is/index.cfm?ccs=622 The plan's appendices contain COI and ISSB charters, activities, and membership details.

A. Nevada County Technology Partnership
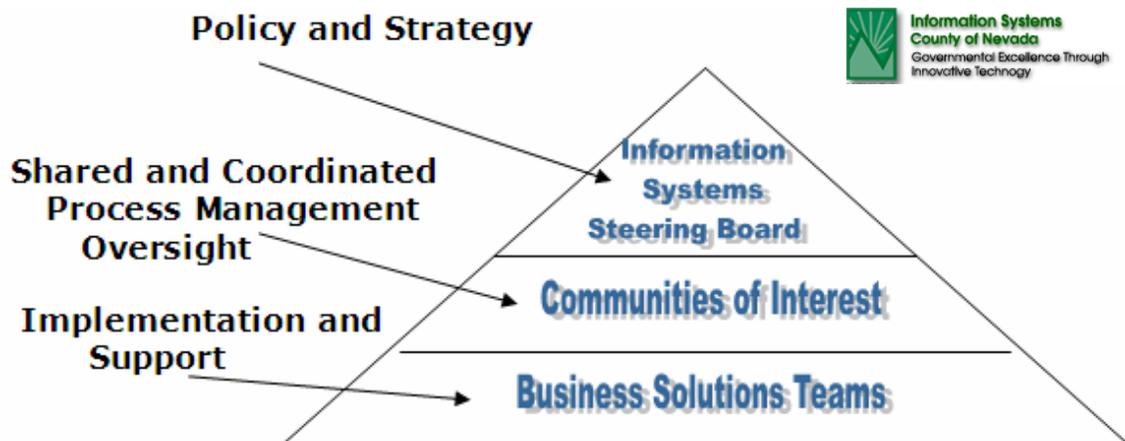
IT Governance Model Diagram:

Information Systems Steering Board – Top level IT enterprise-wide decision-making board.

Communities of Interest – virtual organizations with a shared objective.
- Justice
- Public Safety
- Community and Social Services
- Internal Services
- Environment and Land Management
- Enterprise Information Technology Management

Business Solution Teams – Project teams that form and dissolve as needed. May run a major project implementation, research a solution, or analyze a cross department business process.

B.   User Centric Organizational Relationships Diagram

Information Systems Steering Board

- Approve standards and policy
- Recommend funding allocations to COIs
- Set vision and strategic direction
- Sponsor infrastructure and strategic initiatives
- Recommend infrastructure investments
- Authorize/approve COI budget expenditures
- Enterprise evaluation and perspective

Communities of Interest

- Recommend standards and policy
- Prioritize related initiatives
- Determine spending priorities within COIs
- Identify integration, automation opportunities
- Enforce project milestones
- Oversee budget allocations
- Business process and data collaborations

Chief Information Officer

- Recommend standards and policy
- Establish enterprise architectures
- Enterprise infrastructure support
- Process automation
- Customer support
- Manage/define IT security
- Sponsor training
- Project management services
- Strategic planning
- Data guardian

Business Solution Teams

- Multi-departmental working teams
- Task forces
- Project implementation
- Business process improvement and automation

C. When evaluating new IT projects, some questions include:

Communities of Interest

Evaluate projects from a community perspective, not from a "silo" departmental view.

- **Evaluate and prioritize the project using the standard evaluation worksheet.**
- **What are any opportunities for collaboration?**
  - Does another member(s) have a similar need or existing solution?
  - What existing IT resources can be used for this project?
- **How will this affect other members?**
  - Data sharing.
  - Cross department business processes.
  - Software licensing issues.
  - If an existing system is removed, how does that affect other members – both with data access and shared funding?
- **What are the funding options?**
  - Collaborative grants.
  - Share the cost/pro-rated participation.
  - How will it be funded long term?
  - If grant funded for purchase, how will annual cost be funded in the future.
- **How can this project build a foundation for future projects to leverage?**
- **Does this project support the NCEA guiding principles?**
- **Review the Project's project management plan and budget.**

Information Systems Steering Board

Evaluate projects from an enterprise-wide perspective. Anticipate and have satisfactory answers for all questions that the Board of Supervisors would/will ask.

- **Review the projects using the standard evaluation worksheet.**
- **Are there any opportunities for collaboration across COI's?**
- **How will this project affect other COI's?**
- **Are there cross COI funding opportunities?**
- **Does the project follow the NCEA goals and principles?**
- **Does the project fully fund any impacts on existing systems and infrastructures?**
- **Does the project follow industry best practices?**
- **Does the project meet County, Federal, and State requirements?**
  - Information security and privacy
  - Accounting/reporting
  - Interoperability standards with other systems and jurisdictions
  - ADA requirements
  - Grant funding requirements
- **Does this project compromise the success of any other projects?**
- **Prioritize this project with other current projects that are currently being or planned to be implemented.**
- **Is this the most cost effective solution? Are there current County IT resources that can met this need more cost effectively?**
- **Has the project's risks been properly identified, measured, and addressed?**
- **What is the project's impact on current Information Systems staff and resources, for implementation and on-going support?**
- **Review the Project's project management plan and budget.**

D.   IT Project Funding Process

IT project funding is tightly integrated into the County's IT governance process. All County IT projects must be processed through a COI and then the ISSB. No IT project is allowed to be presented to the Board of Supervisors for approval or be included in a Department's annual budget without first obtaining ISSB authorization. The following diagram depicts this process.

Department wants to do a Project

- **Dept Head fills out a project description and rating sheet**
- **Project sheet should have these components:**
  -A high level schedule
  -Responsibilities by all parties involved
  -Project Scope
  -Any assumptions and dependencies of the project
  -Budget and Resources

COI & ISSB Review and Approval

- **Manager presents to COI for review, input**
- **With COI approval goes to ISSB for final authorization**

IT Project Approval Process

Procurement

- Work with IS for contract, RFP creation
- Take to BOS for final approval

Statement of Work with IS Manager

Project Implementation

- **Conduct the Kickoff meeting with Project team including IS and department staff**
- **Set Requirements for IS (Network, Applications, and Desktop) resources and timeframe**

Completion

- **Staff notifies manager of completion**
- **Set post-install review, get Dept. head sign off**

6.   Information Systems Departmental Structure and Dimensions

The Nevada County Information Systems Department is compressed of five divisions with 33 total full time staff members.   The IS staff manages and maintains a wide variety of systems and technologies that continuously become more sophisticated and inter-reliant upon one another. Understanding the structure, roles, and responsibilities of the IS department helps customer and IS projects teams more effectively work together.

Below is a diagram depicting the five major activities the IS Department pursues. It is important to note that 90% of the IS departmental staffing and budget is allocated to the activity of Services and Support of existing County technical systems and infrastructures.

The following is an overview of the IS department's divisional structure, activities, and staffing levels.

Activities & Staffing

Project Services
- Project Management
- Vender Management
- Contract Management
- RFI and RFP preparation and mgmt
- Project Coordination
- PM Training and coaching
- Business Process Re-engineering
- Staffing
  - Project Services Manager (1)
  - Information Systems Analyst (2)

Network Services
- Server Farm - NOS admin / HW
- Network Security - Firewall - Intrusion Detection
- Data Backup and Disaster Recovery
- Anti Virus
- Main Computer room
- WAN Infrastructure
- Core Services
  - E-mail & Scheduling
  - Internet Access
  - Database admin
  - File & Print Services
- Network Operation Center
- Remote access / VPN / all Modems, etc.
- Staffing
  - Network Services Manager (1)
  - Network Systems Analyst III (2)
  - Network Systems Analyst II (1)

Application Services
- Major Application Support
- Programming Services
- Geographic Information Services
- E-Government Service
  - Internet Site - Web Development
  - Internet Applications - CRM
- Document Imaging
- Work flow
- Departmental technology planning
- Business Process Re-engineering
- Staffing
  - Application Services Manager (1)
  - Programmer Analyst III (6)
  - (MOU PA III = 2)
  - Programmer Analyst II (2)
  - GIS Analyst II (1)
  - Technician (2)

Desktop Services
- Customer Service
- Help Desk Call Center and Web Site
- Desktop support - on site
- User Accounts/passwords
- Phone/PBX systems
- LAN infrastructure & wiring
- Remote Closets
- Equipment inventory
- Staffing
  - Desktop Services Manager (1)
  - Network Systems Analyst I (3)
  - Computer Services Technician II & III (7)
  - (MOU CST = 3.5)

Administration Services
- Budget
- Billing
- Strategic Planning - NCTP
- User group coordination
- Training programs - in house & countywide
- General Departmental Operations
- IS Policy and Procedures
- Standards and policy
- Partnership Building/ vender relations
- Grant management/development
- Community technology issues
- Staffing
  - Chief Information Officer (1)
  - Administrative Assistant II (1)
  - Senior Administrative Analyst (1)

Information Systems Department Division Activities - 33 FTE

7. <u>Key Contacts in the IS Department:</u>

Desktop Services: PC's, printers, phones, Xerox copiers, scanners, PDA's, HelpDesk, video conferencing, audio/video streaming services, accounts/passwords, and Central/Printing Services. <u>HelpDesk: x2500 or 470-2500 available 24/7/365.</u>

Bill Miller: Information Systems Manager I – 265-1687

Application Services: Document imaging, Websites, GIS, major application support, business process automation, programming services, web reports, executive portals, and IVR.
Diana Carolan –Information Systems Manager I – 265-7100

Network Services: Network infrastructure, data connections, databases administration, disaster recovery, remote connections/access, wireless services, all servers, data centers, and IT security.
Gary Spriggs: Information Systems Manager I - 265-1694

Project Services: Business needs assessments, system requirements, and product evaluations, RFI and RFP development, project management and implementation services, vendor contract development and review, vendor coordination services.
Dale Fadenrecht – Information Systems Manager I - 470-2514

Administrative Services: Budget, billing, rates, IT policies & standards, IT governance, training services, and strategic planning.
Steve Monaghan – Chief Information Officer - 265-1239
Mary Ross – Chief Fiscal Administrative Officer - 265-1705
Christina McClung – Senior Administrative Analyst - 265-1558
Pam Clemens – Administrative Assistant II – 265-1242

8.   Project Management Strategy

New IT projects are typically managed in two methods depending on scope, cost, and risk. A first step in both methods includes the development of a Statement of Work (SOW). The SOW provides an executive overview of the project, its objectives, assumptions and dependencies, risk, costs, and participant's responsibilities. The customer Department Head and the Chief Information Officer must sign the SOW before any works begins.

If the project is small in scope, cost, and risk, a SOW may be all that is needed to execute the project. When a project is larger in scope, cost, or risk, then a more in-depth formalized project management methodology based on the Project Management Institutes PMBOK is utilized. In these cases, an IS Department Project Manager trained in IT Project Management (ITPM) is assigned to the project team to provide ITPM services.

The proper establishment of a Project Team is critical to the success of every technology project. The IS Department will fully assist customer departments with the process of forming and establishing the team. The customer department MUST take full ownership of their technology projects and provide an overall Project Leader to the team. Each project team must be empowered by a COI, the ISSB, or/and the customer department(s) that the project is serving. The customer department's management team must fully and positively support the project and provide authorization, empowerment, time, and assistance to their departmental project team members so they can be effective team participants. Each project team will produce a team charter and utilize an on-line team site for project documentation, tasks lists, communications, and other files.

9. Business Process Automation Strategy

The active pursuit of improving and automating County business processes is the single most strategic initiative and will have a profound affect on the County as an organization. These affects will be in increased productivity, efficiencies, and effectiveness. In addition, business process automation will bring increase customer service levels to our citizens as well as reshaping how the County interacts with our citizens providing a higher level of service, and a new level of accessibility and accountability.

The County of Nevada is in its third phase of IT evolution. The **First Phase** encompassed the replacement of all but one (Property Tax System) major legacy application with vendor supplied packaged applications. This phase greatly updated the County's applications, technologies, and software capabilities for the user departments. It also allowed the IS department to reallocate technical human resources to achieve the second phase. In the **Second Phase**, the County implemented a number of core enterprise services. These enterprise services are available to all departments and included Geographic Information Systems (GIS), Business Process Management (BPM) system, Document Imaging and Management (DMS), website Content Management System (CMS), Interactive Voice Response (IVR) system, VoIP phone services, video conferencing services, video and audio streaming services, on-line e-payment services, collaboration (groupware) services, and Web-enable database report writing services.

Third Phase: The current third phase focuses on bridging the gaps between the new vendor supplied applications from the first phase with the enterprise core services implemented in the second phase. This entails automating departmental business processes that live outside of their major applications utilizing a core service technology. These target business processes are estimated to encompass over 50% of any given department's total business processes. Most are manually and paper intensive processes.

Nevada County is currently targeting high impact enterprise business processes to automate. Human Services' Personnel Action Form (PAF) is a solid example of a process that when automated will bring increased efficiency and effectiveness to the entire County organization. The PAF will be launched Countywide in January 2006. Processes already automated include Citizen Request Management (CRM) for numerous departments, Helpdesk requests, Facilities Maintenance requests, Board of Supervisors order tracking, Project tracking, and License tracking to list a few.

The recent IS Surveys conducted of all County Departments discovered that many departments have the same or similar process and automation requirements. For example, a CRM solution designed for one department can be rapidly customized and then deployed in another department. The core business process is the same and thus the BPM (CRM is based on the County's BPM platform) routine can be reused after some modification. This is also the case for many other core services such as Document Imaging, GIS, report writing, and IVR.

Due to the "reusability" of these "custom solutions" based on the County's current core services, the strategy for business automation is to standardize these basic business processes, fully documenting the components as they are implemented with the core services technologies. The IS Department is currently developing methodologies and procedures so that new solutions can be rapidly implemented as required by simply pulling proven components "off the shelf" and re-using them to automate a new business processes for any County department.

Standardizing on the County's current set of core services and underlying infrastructure is critical to the success of this phase. It is too costly to introduce new core services that may be redundant to current abilities, as well as the human resources aspect of maintaining a wider breath of technologies and systems.

The Fourth Phase of Nevada County's technical evolution will be achieved when the IS department builds and enables standardized common web services between our major applications and each core service technology. Web services are industry standard methods for applications/technologies to interact with one another. This is referred to as a Service Oriented Architecture or SOA. The County will then focus on composite process solutions as opposed to traditional application suites. In this environment, any core application could display data in a GIS map presentation, output to a web executive portal, or initiate an external business process. Solutions automated with our BPM system could place and retrieve documents from the DMS, output data to GIS, and place phone calls via the IVR system. In order to achieve this level of automation, the IS Department must fully mature, stabilize, document, and standardize the underling technical platforms, systems, and infrastructures. Much progress has been made to date toward these goals. A solid, adhered to Technical Enterprise Architecture is critical to achieve this level of automation. Later sections will cover more on these efforts which include the current IS Department's adoption of the ITIL (Information Technology Infrastructure Library) framework and best practices.
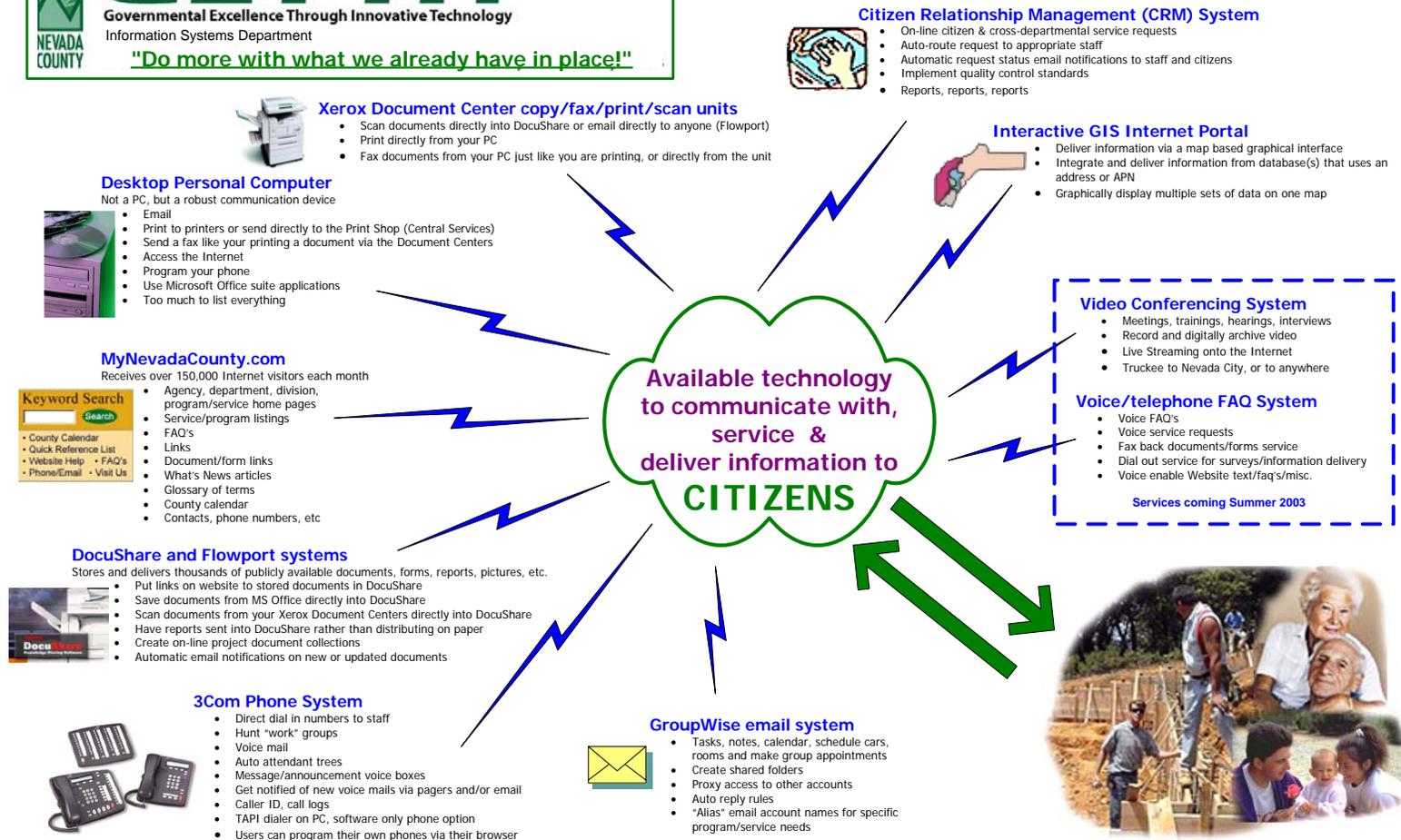
Automating a business processes is only half of the equation. The first phase and most significant element is Process Improvement. This is the actual re-evaluation and re-design (reengineering) of the business process. County managers at all levels needs to be trained to properly evaluate, improve, design, and review the business process that they manage. Not every business process should be automated, and those that are, should be fully examined and re-evaluated before technology is introduced.
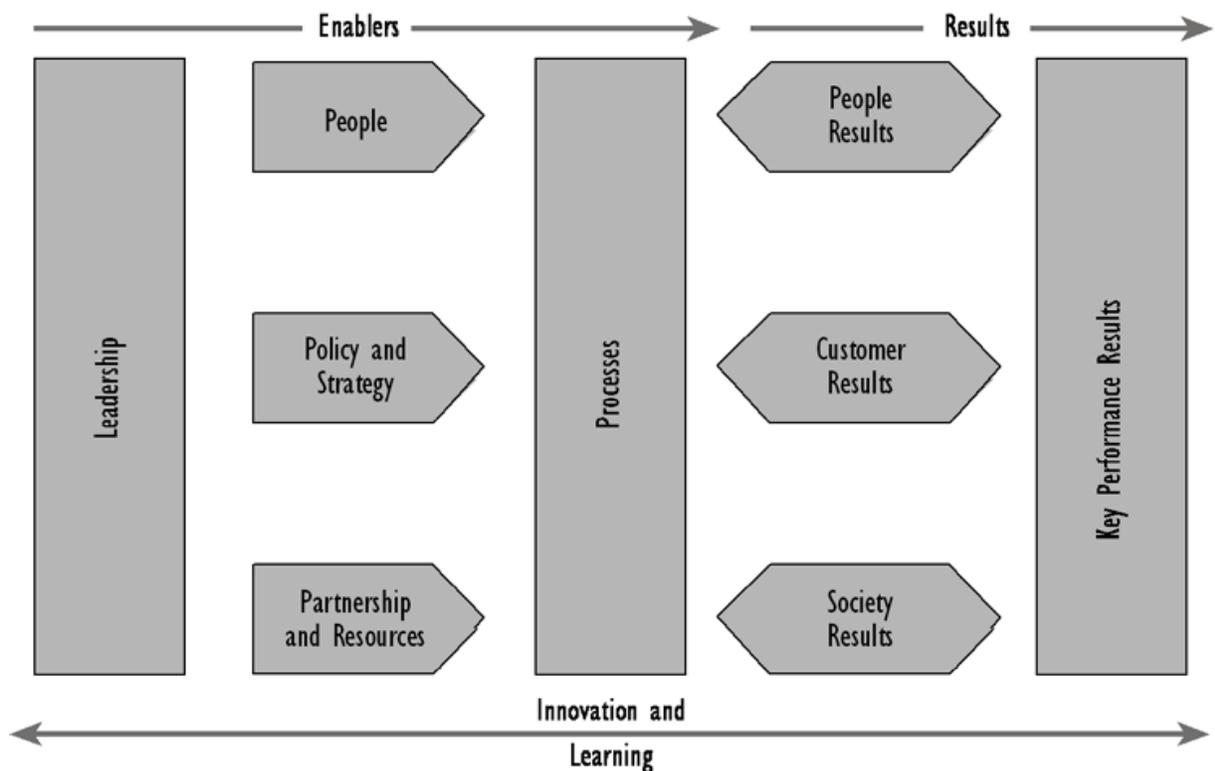
©EFQM. The EFQM excellence Model is a registered trademark

10. Available Technology Maps

Technology is only beneficial when it dependable, available, and properly utilized by the intended consumers. Nevada County has made significant investments and progress in updating it technological capabilities. To fully maximize these investments and bring more benefit to the organization, the IS Department launched a technology awareness and education campaign beginning in 2003. This effort was called the GET IT! Campaign and utilized the theme of "Do more with what we already have in place!" The later campaign introduced to the organization two technology maps that visually depict how County Departments can use many of the current core service technologies to be more effective and efficient in their daily operations. A robust countywide training campaign was introduced at the same time.

GET IT!
Governmental Excellence Through Innovative Technology
Information Systems Department
"Do more with what we already have in place!"

Citizen Relationship Management (CRM) System
- On-line citizen & cross-departmental service requests
- Auto-route request to appropriate staff
- Automatic request status email notifications to staff and citizens
- Implement quality control standards
- Reports, reports, reports

Xerox Document Center copy/fax/print/scan units
- Scan documents directly into DocuShare or email directly to anyone (Flowport)
- Print directly from your PC
- Fax documents from your PC just like you are printing, or directly from the unit

Interactive GIS Internet Portal
- Deliver information via a map based graphical interface
- Integrate and deliver information from database(s) that uses an address or APN
- Graphically display multiple sets of data on one map

Desktop Personal Computer
Not a PC, but a robust communication device
- Email
- Print to printers or send directly to the Print Shop (Central Services)
- Send a fax like your printing a document via the Document Centers
- Access the Internet
- Program your phone
- Use Microsoft Office suite applications
- Too much to list everything

Video Conferencing System
- Meetings, trainings, hearings, interviews
- Record and digitally archive video
- Live Streaming onto the Internet
- Truckee to Nevada City, or to anywhere

MyNevadaCounty.com
Receives over 150,000 Internet visitors each month
- Agency, department, division, program/service home pages
- Service/program listings
- FAQ's
- Links
- Document/form links
- What's News articles
- Glossary of terms
- County calendar
- Contacts, phone numbers, etc

Keyword Search
- County Calendar
- Quick Reference List
- Website Help · FAQ's
- Phone/Email · Visit Us

Voice/telephone FAQ System
- Voice FAQ's
- Voice service requests
- Fax back documents/forms service
- Dial out service for surveys/information delivery
- Voice enable Website text/faq's/misc.

Services coming Summer 2003

Available technology to communicate with, service & deliver information to CITIZENS

DocuShare and Flowport systems
Stores and delivers thousands of publicly available documents, forms, reports, pictures, etc.
- Put links on website to stored documents in DocuShare
- Save documents from MS Office directly into DocuShare
- Scan documents from your Xerox Document Centers directly into DocuShare
- Have reports sent into DocuShare rather than distributing on paper
- Create on-line project document collections
- Automatic email notifications on new or updated documents

3Com Phone System
- Direct dial in numbers to staff
- Hunt "work" groups
- Voice mail
- Auto attendant trees
- Message/announcement voice boxes
- Get notified of new voice mails via pagers and/or email
- Caller ID, call logs
- TAPI dialer on PC, software only phone option
- Users can program their own phones via their browser

GroupWise email system
- Tasks, notes, calendar, schedule cars, rooms and make group appointments
- Create shared folders
- Proxy access to other accounts
- Auto reply rules
- "Alias" email account names for specific program/service needs

GET IT!
Governmental Excellence Through Innovative Technology
Information Systems Department
"Do more with what we already have in place!"

NEVADA COUNTY

Available technology to communicate with, build workgroups & be more productive for
County Staff

Interactive GIS Intranet Applications
- Analyze information via a map based graphical interface
- Integrate and deliver information from database(s) that uses an address or APN – BOS presentations!!
- Graphically display multiple sets of data on one map

Conference rooms
- Northstar room
  - Video conferencing
  - E-white board and printer
  - PC and projector
  - VCR and DVD
  - Conference phone
- Empire room
  - Projector
  - TV and VCR
  - Network connections for labptop

Video Conferencing System
- Meetings, trainings, hearings, interviews
- Record and digitally archive video
- Live Streaming onto the County Intranet
- Truckee, Rood, CH, HEW, CCS, Library, BOS Chambers

Xerox Document Center copy/fax/print/scan units
- Scan documents directly into DocuShare or email directly to anyone (Flowport)
- Print directly from your PC
- Fax documents from your PC like your printing, or directly from the unit
- Finish documents with staples, collate, make booklets, and more

Training room and resources
- 12 seat plus instructor multimedia training room
- PC Projector
- VCR and DVD
- White Board and E-whiteboard
- Computer Based Training CD-ROMS on Office Suite 97 & 2000 and GroupWise
- Regular instructor lead training classes

Eworks Business Process Management (BPM) System
- Implement ready routines for CRM and project tracking
- Automate any business process
- Auto-route request to appropriate staff
- Automatic request status email notifications to staff and citizens
- Implement quality control standards
- Reports, reports, reports

Remote / tele-working
- Remote access to GroupWise and DocuShare
- Remote access to Pentamation and TAZ
- Remote access to phone system services
- Other services available

3Com Phone System
- Direct dial in numbers to staff
- Hunt "work" groups
- Voice mail
- Auto attendant trees
- Message/announcement voice boxes
- Get notified of new voice mails via pagers and/or email
- Caller ID, call logs
- TAPI dialer on PC, software only phone option
- Users can program their own phones via their browser

Information Systems Helpdesk
- Submit services request via website, phone, or email
- On-site service and support
- Self help intranet site for users

GroupWise email system
- Tasks, notes, calendar, schedule cars, rooms and make group appointments
- Create shared folders
- Proxy access to other accounts
- Process mail by rules
- "Alias" email account names for specific program/service needs
- Web access from home/remotely/PDA
- Synchronize with PDA

E-guide
- Web based employee directory
- Employees can update their own information
- Employee data is linked to GroupWise
- Can include photo, assistant info, etc

Desktop Personal Computer
Not a PC, but a robust communication device
- Email
- Print to printers or send directly to the Print Shop (Central Services)
- Send a fax just like printing a document via the Document Centers
- Access the Internet
- Program your phone
- Use Microsoft Office suite applications
- Too much to list everything

http://infonet County Intranet
Internal websites for county staff only.
- Agency, department, division, program/service home pages
- Service/program listings
- FAQ's and Links
- Forums –build communities/teams
- Document/form links
- Countywide employee newsletter
- Glossary of terms
- County calendar
- Contacts, phone numbers, etc

Document scanning and management
Store, index, retrieve and deliver documents, forms, electronic files, reports, pictures, etc.
- Put links on website to stored documents in DocuShare
- Save documents from MS Office directly into DocuShare
- Scan and index documents from your Xerox Document Centers directly into DocuShare, also from PC's with scanners.
- Link to databases or zone/barcode for auto indexing
- Have reports sent into DocuShare rather than distributing on paper
- Create on-line project document collections
- Automatic email notifications on new or updated documents

11. Countywide Business Objectives Alignment Strategy

Countywide business objectives drive IT direction and are the foundation for this EA framework. The County's Board of Supervisors annually updates the County's goals and a list of detailed objectives. These goals and objectives drive the annual County budget process. Each County Department incorporates these goals and objectives into their annual departmental work plans and budgets. Many County IT projects are identified from these work plan requirements. Once a need for an IT project is identified, the conceptual project is then vetted through the County's IT Governance process.
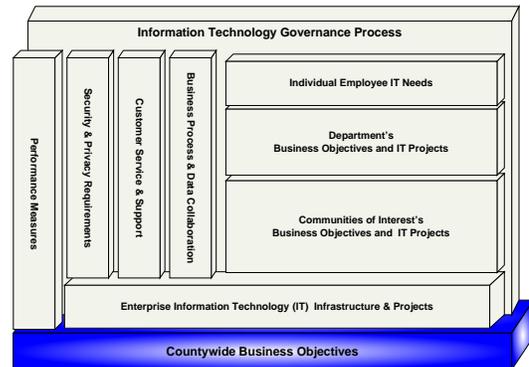
Specific strategies include:
- Actively maintaining the Nevada County Technical Partnership IT governance model which is facilitated by County department heads participation.
- Continue to update the County's Enterprise Information Technology Strategic Plan every two years.
- Insure that the NCEA supports the County's long range Vision, Mission, and Values that the Board of Supervisors publishes to serve our citizenry.
- Continue to perform individual County Department technology needs surveys as part of the strategic planning process.

12. Enterprise Information Technology Strategy

The County has a very robust enterprise IT infrastructure in place now.   The County is too small to afford and manage any duplicative technologies. If the organization is to perform at maximum efficiency and effectiveness, then every County employee must have a minimum set of technical capabilities and services available to them on their desktop. The lines of demarcation are fading within our organization; no County service and thus IT project is an island in itself. Our citizens view us as one entity and we must operate as such.
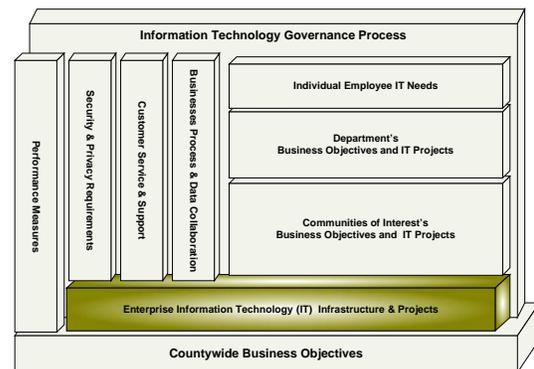
Specific strategies include:
- These resources should be first fully evaluated for applicability in new IT projects before additional technologies are purchased or implemented.
- Common business solutions should be shared across the enterprise.
- When new projects introduce new technologies, they should if possible do so in an enterprise manner, building a new foundation for future projects to leverage.
- Enterprises perspectives and needs should always take priority over individual departmental preferences.
- Every County employee should have access to each enterprise technology "Core Service" (email, work flow, document management, etc). This will enable departments to share

resources and best practices as well as to automate cross-departmental and enterprise business processes. In addition, it provides a consistent E-Government experience to our citizens.

● Enterprise systems and infrastructures need to be judiciously maintained and sustained in order to not degrade previous investments and current technical capabilities.

13.   __Performance Management Strategy__

Nevada County uses a Performance Measurement system established by the Board of Supervisors and administered by the County Executive's Office.

Individual County Departments create their specific performance measures to deliver on annually published Board goals and objectives. Department specific business objectives are considered as well. These business objectives and resulting performance measures drive many of the County's IT initiatives.

All IT projects then fall under the oversight and direction of the County's IT governance process.   Direct IT project oversight is provided by either a COI or the ISSB. Information Systems Department's performance is overseen by the Chief Information Officer, ISSB, and the County Executive's Office.
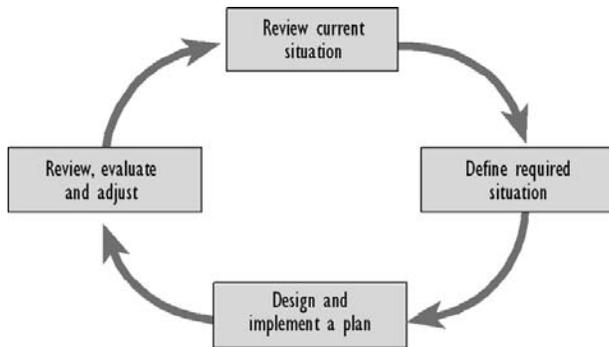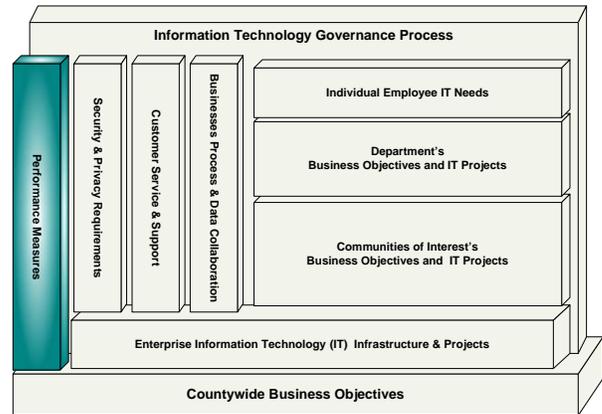
The Information Systems Department's Management team performs regular project cycle monitoring.   The ISSB monitors specific IT project investment performance.

14. Business Process & Data Collaboration Strategy

A fundamental principle of the IT governance model is the active pursuit of cross-departmental and enterprise collaborations. These collaborations cover funding, data access, equipment, staff, services, training, and business processes. Many of the Enterprise strategies apply here.

Specific strategies include:
- County services and their resulting IT projects do not live in a "vacuum", they must co-exists effectively and interoperate with other systems in the NCITE.
- The number of IT systems and technologies the County can support has a limit. New projects must whenever possible leverage existing resources, both technical and human to accomplish their goals.
- Systems and infrastructures should be evaluated and implemented to insure as much interoperability as possible within the existing NCITE.
- Data is an enterprise asset and should be managed from this perspective.
- Common business processes should be shared across the enterprise.
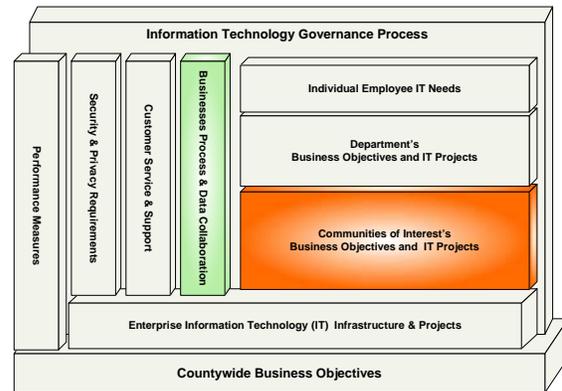
15. Customer Service & Support Strategy

As stated earlier, technology systems and services are only useful and beneficial to the organization when they are available, accessable, and fully functional. Each new IT component must be evaluated for on-going support considerations.

Specific strategies include:
- Selecting vendors that will provide as much turn key support for their products, applications, and core service packages as possible.
- Have IS staff focus on their core competencies, provide adequate training for them.
- Continue to implement ITIL methodologies across the IS Department.
- Work in partnership with customer departments to develop well defined, documented, responsive support solutions that meet their business operational requirements.
- Implement capacity monitoring and planning systems for critical NCITE components.
- Empower and enable Helpdesk staff to solve most customer issues on the first call.
- Evaluate and design IS department business processes and polices with a customer centric perspective.
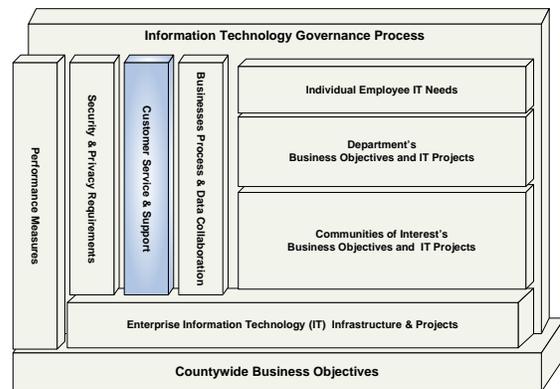
16. End-User Training Strategy

It is critical to properly train the users and owners of technology on its proper use and capabilities. Users must "own" their applications and systems and be vested in their operations. IT should be a mainstream component that lives in the heart of all county department's operations.

Specific strategies include:
- Continue the on-going "GET IT!" tips and tricks education campaign and the "Doing more with what we already have in Place!" outreach.
- Reach out to departments and custom design training programs to meet their unique needs.
- Continue the regular technology demonstrations at the CEO's monthly Department Head meetings.
- Actively facilitate, promote, and foster customer user groups on the County's most used core applications and core services.
- Continue the annual County employee educational technology fairs "Tech-O-Rama's".
- Support and foster a learning organization culture.
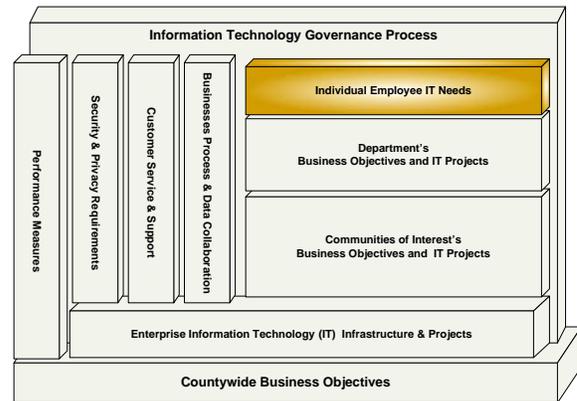

17. Departmental Business Alignment Strategy

While taking an enterprise perspective is a high priority, individual departmental IT requirements must be met in order for them to achieve their business objectives.
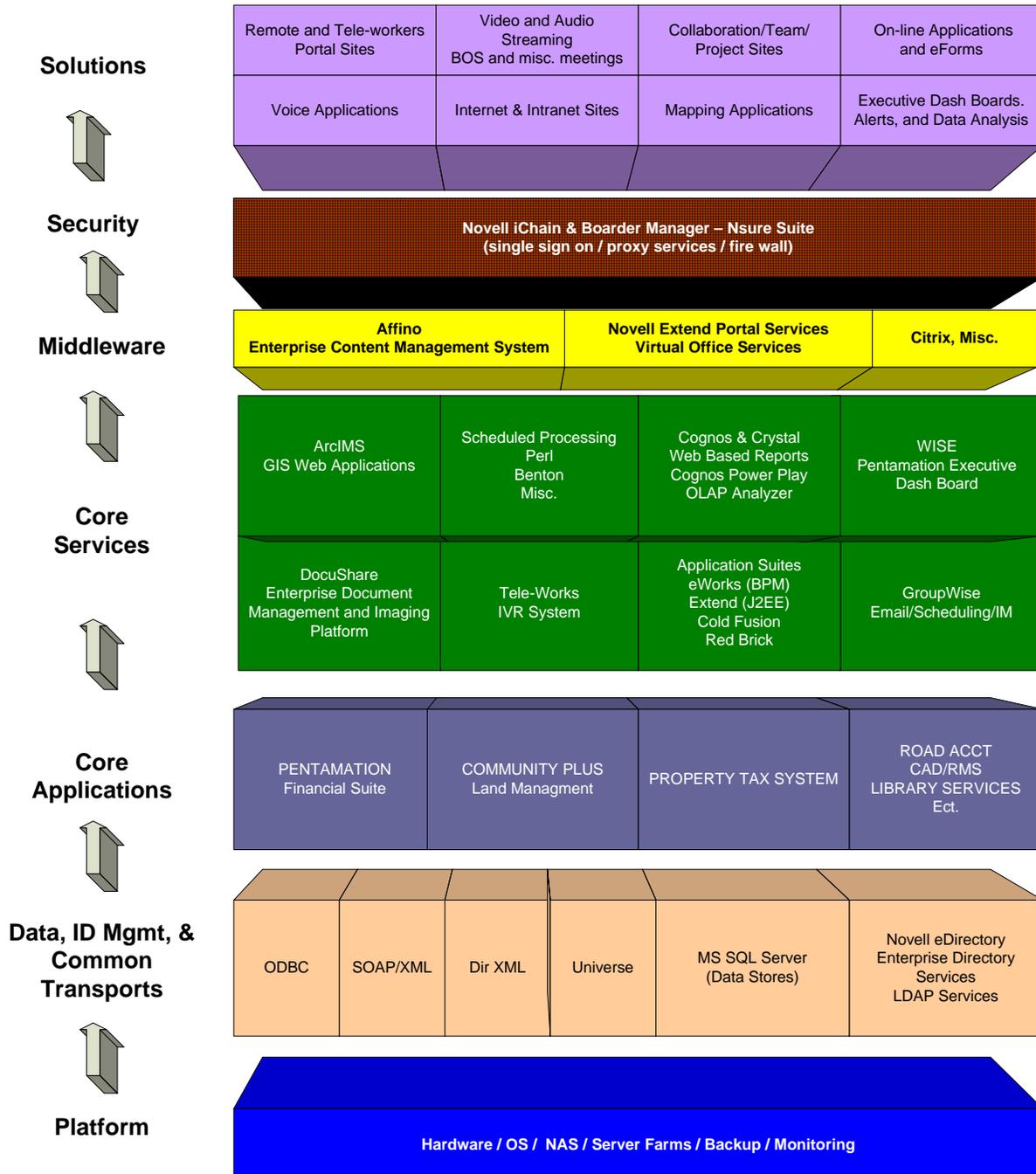

Specific strategies include:
- Continue to perform individual County Department technology needs surveys as part of the County's IT strategic planning process.
- Insure each County department is actively participating in at least one Community of Interest.
- Build active partnerships between County Departments' management teams and the Information Systems Department management team.
- Continue the active execution of the Information Systems Department's external communication plan and feedback channels.
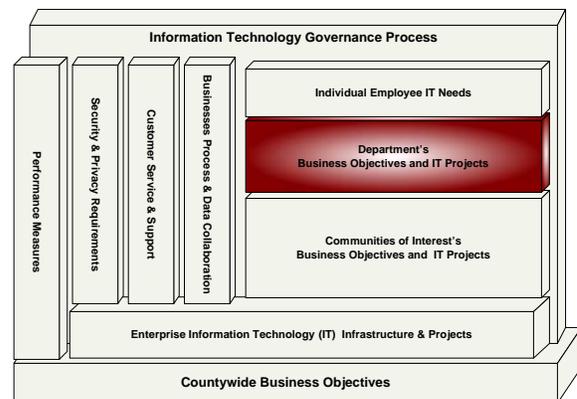
18. Enterprise Architecture Technical Overview

An Enterprise Architecture describes the people, processes, and technologies that an organization utilizes to develop their technology solutions. The previous sections reviewed the people and processes. This section focuses on the technical framework, and the specific technology components "building blocks" that make up that framework. This is referred to as the Nevada County Information Technology Enterprise (NCITE). The following diagram is a simplistic "Technology Stack" that depicts the current NCITE in a broad perspective. Each "layer" in the stack is a strategic grouping of common technologies that serve a particular set of functions for the Nevada County organization. Each layer has a specific set of strategic objectives and each is currently in a differing stage of maturity and development. Each layer's strategic objectives will be outlined later in this document.

Solutions

Remote and Tele-workers Portal Sites	Video and Audio Streaming BOS and misc. meetings	Collaboration/Team/ Project Sites	On-line Applications and eForms
Voice Applications	Internet & Intranet Sites	Mapping Applications	Executive Dash Boards. Alerts, and Data Analysis

Security

Novell iChain & Boarder Manager – Nsure Suite
(single sign on / proxy services / fire wall)

Middleware

Affino Enterprise Content Management System	Novell Extend Portal Services Virtual Office Services	Citrix, Misc.

Core Services

ArcIMS GIS Web Applications	Scheduled Processing Perl Benton Misc.	Cognos & Crystal Web Based Reports Cognos Power Play OLAP Analyzer	WISE Pentamation Executive Dash Board
DocuShare Enterprise Document Management and Imaging Platform	Tele-Works IVR System	Application Suites eWorks (BPM) Extend (J2EE) Cold Fusion Red Brick	GroupWise Email/Scheduling/IM

Core Applications

PENTAMATION Financial Suite	COMMUNITY PLUS Land Managment	PROPERTY TAX SYSTEM	ROAD ACCT CAD/RMS LIBRARY SERVICES Ect.

Data, ID Mgmt, & Common Transports

ODBC	SOAP/XML	Dir XML	Universe	MS SQL Server (Data Stores)	Novell eDirectory Enterprise Directory Services LDAP Services

Platform

Hardware / OS / NAS / Server Farms / Backup / Monitoring

19. Platform Strategy

The platform "layer" consists of traditional server hardware, network operating systems, and data center components. This is the most remote layer from the actual customer users, but critical to most new projects' success. Typically the Network Services Division handles most issues at this layer. Even when a vendor supplied server is used, it takes this groups participation to integrate the equipment into the Nevada County environment, then to insure that proper monitoring and data backup routines are put in place.

This layer is considered a "utility" layer in that it must function like "electricity". When you flip the switch, the lights must come on. To achieve this level of availability and reliability, the Information Systems Department is actively implementing ITIL (Information Technology Infrastructure Library) framework and best practices. ITIL is to IT operations as TQM and ISO-9000 is to manufacturing. It is an internationally accepted framework of best practices that IT organizations adopt to achieve high levels of operational efficiencies and effectiveness. Nevada County is currently adopting ITIL methodologies for the Services Desk and Change Management areas and will expand this further in the future.

Specific strategies for this layer include:
- That all layer components are 100% monitored by the County's central network monitoring and alerting console – 24/7/365 (ManageWise or other).
- That all components are 100% documented for current system configurations, setup, backup, and disaster recover procedures.
- That all servers are protected against viruses and other dangers.
- That critical systems be actively monitored for real time changes (Tripwire).
- That servers utilize the central data backup infrastructure.
- That servers have a 1 GB core network connection.
- That all data subnets be actively monitored for traffic, capacity, and QOS.
- That all production Internet accessible servers utilize a proxy server.
- That all infrastructure routers and switches have current images backed up.
- That all new components be evaluated from a security perspective.
- That most equipment use a DHCP assigned NAT IP address.
- Minimize the cost and effort required to administer these components through the use of automated active monitoring and administrative utilities, as well as applying consistent configuration and documentation standards.
- NOS's will be kept current to their latest production releases in order to not hold back other dependent technologies which may require their most current versions.

Specific key County policies for this layer include:
- Only Information Systems department staff, specifically Network Services Division personnel can install, modify, and remove production components in this layer.
- That new equipment follows the established naming convention.
- All component changes will be entered into the change management system and documented.

20. Data, ID Management, and Common Transport Strategy

ODBC	SOAP/XML	Dir XML	Universe	MS SQL Server (Data Stores)	Novell eDirectory Enterprise Directory Services LDAP Services

The Data, ID Management, and Common Transport "layer" consist of foundational enterprise networking, ID management, database, and messaging services. This layer is also a "utility" layer in that these services must be available and functioning 24/7/365. This is a very strategic and critical layer in such that how this layer operates, its capabilities, services offered, and robustness greatly impacts each layer above it.

Specific Strategies for this layer include:

Directory Services
- All network connected devices are managed via Directory Services.
- All County employees and other network users ID's, security and access rights, and other permissions are managed via Directory Services.
- User "Roles" are used as a strategic method of managing security for network resources and eventually application access rights as well as business process workflow via the BPM system.
- Applications and core service technologies should utilize Directory Services for user account and password information rather than internal proprietary account databases.
- The Novell Directory Services will be available 24/7/365 to process requests and will publish the services in alternate standards such as LDAP to support cross platform interoperability.
- The Novell Directory Services will maintain a functional live interface to the Microsoft Active Directory and other domains via Dir XML for seamless services across platforms.
- A live synchronized "employee" flat tree will be maintained to facilitate context-less user logins and to promote a ubiquitous network access strategy.
- Directory Services will be the heart of the County's user ID management, security, and provisioning strategy. Other strategic services such as organizational roles and single sign on rely on this critical layer.

Data Stores and Access
- Network & Application Services Divisions will share in providing DBA services depending on the application.
- ODBC and other data access methods will be well documented and standardized.
- Data Dictionaries will be well defined and documented for all major applications and data stores.
- Critical data stores will be configured with fault tolerant hardware and may incorporate live redundant "mirrored" data services.
- Maintaining as few different database platforms as possible with a preference for Microsoft SQL Server.
- Database maintenance activities will be coordinated and utilize shared resources across applications.

WEB Services
- Common messaging transports will follow industry open standards for Web Services.
- Available web services will move to "utility" status with corresponding requirements.

- The County should standardize on a subset of web services to specialize and be expert in.
- Develop a standard service oriented architecture model (SOA) for NCITE, this is critical to the Core Services layer's success.

21.   Core Applications Strategy

PENTAMATION Financial Suite	COMMUNITY PLUS Land Managment	PROPERTY TAX SYSTEM	ROAD ACCT CAD/RMS LIBRARY SERVICES Ect.

Over the last five years, Nevada County has taken an active strategy to replace our in-house custom programmed legacy applications with vendor supplied packaged applications.   This approach has updated the applications the customer department's use, increasing their operational effectiveness and underlying technical abilities. In addition, it has allowed the Information Systems Department to re-allocate human resources so that new strategic core service technologies could be implemented and maintained.

Almost every major County service utilizes a dedicated core application. Examples include: Jail Management System, Library Catalog Services, Probation Case Management, 911 Computer Aided Dispatch, Land Management, Road Accounting, and our Financial Accounting Suite.

Specific strategies for this layer include:
- IS Department human resource should be strategically focused on adding value to the core applications by bridging them with core service technologies. Our limited human resources should not be expended by programming and maintaining core software applications.
- Vendor supplied packaged solution should be considered first when evaluating the replacement of any core application.
- Software source code should be placed in escrow for when purchasing vendor supplied applications.
- The Information Systems Department can deliver more value to our customers by enhancing their vendor supplied systems with robust web-based report and integrating them with our GIS, BPM, and document imaging systems than by actually writing the core application in-house.
- Having the vendor support the core application directly with the customer users for issues that reside internal to the business processes in the application.
- Only selecting vendor applications that integrate effectively with the previous strategies of the "Data, ID Management, and Common Transport" and "Platform" layers.
- Selecting vendor applications that are proven and in-use in other Counties or local government agencies; preferably from vendors who maintain active users groups and are local to our region.
- Core applications should utilize Directory Services for user account and password information rather than internal proprietary account databases.
- Core applications should plan on the future use of organizational roles from directory services to provision security rights and facilitate routing.

22. Core Services Strategy

ArcIMS GIS Web Applications	Scheduled Processing Perl Benton Misc.	Cognos & Crystal Web Based Reports Cognos Power Play OLAP Analyzer	WISE Pentamation Executive Dash Board
DocuShare Enterprise Document Management and Imaging Platform	Tele-Works IVR System	Application Suites eWorks (BPM) Extend (J2EE) Cold Fusion Red Brick	GroupWise Email/Scheduling/IM

Core services are critical to the County's strategic technology goals and initiatives. Core services add value to existing core applications and fill the gaps that are found between them. They deliver most of the "E – Government" services that interact directly with our citizens. Over 50% of any given department's total business processes are found outside of their core applications and are the value-added "opportunities" for core services to automate. Most are manually and paper intensive processes. Once thought as "optional" or "value-add", core services are evolving into "utility" services as much as some of the underlying infrastructure has. Some core services are even becoming "packaged" and available as Internet based application services from numerous providers. Take email for an example. Once considered non-essential or even optional, email is now a critical core service that must operate with the same dependability and availability as phone systems. In Nevada County, this same transition is taking place with other core services such as document management, process scheduling services, GIS, report servers, video conferencing, and our CMS (websites) to name a few.

The Information Systems Department must take a similar approach to the core service layer as it does with the "Data, ID Management, and Common Transport" and "Platform" layers. To this end, the IS Department has created dedicated cross divisional matrix teams called Strategic Service Teams (SST) to guide, develop, and mature key core services such as BPM, DMS, Web Services, and Voice & Video Services.   Each SST has a charter, meets regularly, works on goals and objectives, and maintains web based team sites for documentation and communications. As the IS Department's ITIL initiatives progress, the SST's will explore ITIL elements that can assist them in their goal to build a solid, reliable, available core services infrastructure.

While building a reliable core services infrastructure is critical, so is maturing and standardizing on modular reusable components "web services" / "building blocks" that will enable each core service to interact with another, our core applications, or even with external agencies' web services. With this in place, the IS Department will be fully positioned to rapidly construct custom high value solutions with these "building blocks" for our customer departments. This is not traditional top down or object oriented programming, but business process automation with minimal code generation by utilizing "off the shelf" reusable processes.

Specific strategies for this layer include:
- Developing core services standards for documentation, naming conventions, and coding.
- Developing standards for all core service customer solutions.
- Constructing common "building blocks" or "Web Services" that allow core services to interact with one another and core applications.
- Automating the active live monitoring of core services through the IS Department's central network monitoring and alerting console.

- Limiting the number of core services that must be maintained in the County environment.
- Using the services that we have creatively.
- Considering any critical enterprise technology that is not in another layer as a "core service".
- Building deeper capacity in IS department staff to support each core service.
- Core services should utilize Directory Services for user account and password information rather than internal proprietary account databases.
- Core services should plan on the future use of organizational roles from directory services to provision security rights and facilitate routing.
- Develop a standard service oriented architecture model (SOA) for NCITE.

GIS
- Build the capacity and ability to rapidly deploy custom web based GIS applications to user departments.
- Build and maintain a robust spatial data store containing all County data layers.
- Coordinate Geo data across all land management departments.
- Foster and maintain an active customer user group community.

Scheduled Processing Services
- Processing services can add great value and functionality between applications and core services when implemented diligently, otherwise they can be the weakest component for overall process reliability.
- Processing services should be centralized when possible.
- Approach and structure scheduled processing services as "utility" services.
- Processing services should follow common naming and documentation standards.
- Processing services should write to shared central activity logs that can be monitored and alerted on.
- A central catalog of all processing services should be maintained and always current.

DocuShare
- All critical County documents should be stored in DocuShare or connected off-line storage.
- DocuShare is the sole depository for presenting documents to the public.
- Continuous end user training classes are to be conducted on DocuShare and its related technologies and systems.
- Countywide document index standards need to be published, updated, and incorporated into the training classes.
- An active customer user group community will be fostered and maintained.
- Universal search capabilities that cross systems and services needs to be developed.

Report Writing
- The County needs to focus on one central web report-writing infrastructure.
- New applications and solutions should leverage this main report writing service.
- The IS Department can deliver high value by building and empowering customer departments to build their own web based reports.
- Reports should be stored in DocuShare rather than printed on paper.

IVR /Tele-Works
- Tele-Works is a very robust IVR platform and will be the single system used for interactive voice services.
- Voice automation is more ubiquitous with citizens than web services and should be explored as new citizen service offerings are considered.

BPM / eWorks
- The success of the County's Business Process Management initiatives will transform how this organization operates and serves its citizenry.
- Customer department business managers need to be empowered to design and modify their own business processes. They need to be educated on general BPM concepts and techniques as well as trained in the business manager designer eWorks application.
- High value and high profile enterprise business processes need to be targeted first to help move BPM into the central culture of the County organization.
- The IS Department needs to lead by example and automate their internal processes as mush as possible.
- An active customer user group community will be fostered and maintained.
- The BPM strategic service team will review all BPM proposals and oversee all BPM projects.

23.   Middleware Strategy

Affino Enterprise Content Management System	Novell Extend Portal Services Virtual Office Services	Citrix, Misc.

The Middleware layer presents to the users many of the services and applications found in lower layers. Users should not need to know how to find particular services, but have a "home or "portal" that presents them with the services they regularly use. A good example is with how the CMS is used to present documents that are stored in DocuShare to citizens. Virtual Office Services can present network resources to remote and mobile workers. The space between the Middleware and Security layers with the Core Service layer is very "gray" and overlapping at times. The Middleware layer is very useful for presenting lower layer resources like file, print, and directory services to users. Remote and mobile access solutions live at this layer.

Specific strategies for this layer include:
- Middleware can greatly increase the experience that citizens and County employees have utilizing IT resources.
- The number of middleware systems should be greatly limited due to both cost and complexity concerns.
- Middleware should be configured from a customer total usability perspective.

24.   IT Security Strategy

Novell iChain & Boarder Manager – Nsure Suite (single sign on / proxy services / fire wall)

Information Security for all the County's technology systems is the sole responsibility and under the authority of the Information Systems Department per the County's Administrative Code. Much progress has been made in this area through published policies and procedures and the County's HIPAA efforts. All projects must be reviewed for security issues by IS staff.

Specific strategies for this layer include:
- All servers providing Internet services will do so through a proxy.
- Critical servers will be configures with change alerting software such as TripWire.

- Every County PC and Server will be configured with Anti-Virus software and other safeguards.
- An active Information Security education campaign, end user handbook, and InfoNet site will be maintained. Training will be provided to all new County employees during their orientation session.
- Nevada County will follow the IT Security Best Practices as published by the California County Information Services Directors Association.

25. Solutions Strategy

Remote and Tele-workers Portal Sites	Video and Audio Streaming BOS and misc. meetings	Collaboration/Team/ Project Sites	On-line Applications and eForms
Voice Applications	Internet & Intranet Sites	Mapping Applications	Executive Dash Boards. Alerts, and Data Analysis

This top layer is where customer department value-added solutions are created. This is where the Information Systems Department staff and analysts need to spend their limited and valuable resource of time. This can only be achieved if the lower layer technologies are mature, available, standardized, dependable, and documented; thus the push for ITIL methodologies to be implemented in those lower layers. This layer is the varied combination of infrastructures, core applications, core services, middleware, and security services that together comprise high value solutions for County departments. These composite process solutions will only be achievable once the NCITE is fully Service Oriented Architecture (SOA) enabled.

Many components of the lower layers can be outsourced and supported by external IT vendors and contractors. We do this for core applications such as DocuShare, Affino, Novell, GIS, etc. Each organization's enterprise architecture is unique as they select and purchase different core applications, core services, and various technologies over time. Nevada County has a unique information architecture that is different from any other organization. This is why only Nevada County Information Systems Department staff has the specific knowledge and ability to combine these components into high value solutions for our County departments. This cannot be outsourced and is the reason why IS staff needs to spend their time and energy in this layer.

Specific strategies for this layer include:
- Building solutions that can meet multiple customer department needs.
- Having the ability and capacity to rapidly construct new solutions from reusable components "composite process solutions".
- Implementing a Service Oriented Architecture model.
- Targeting high value enterprise solutions first.
- Targeting high value direct citizen (E-Gov) solutions.
- Only using the building blocks from the lower layers, not introducing new technologies.
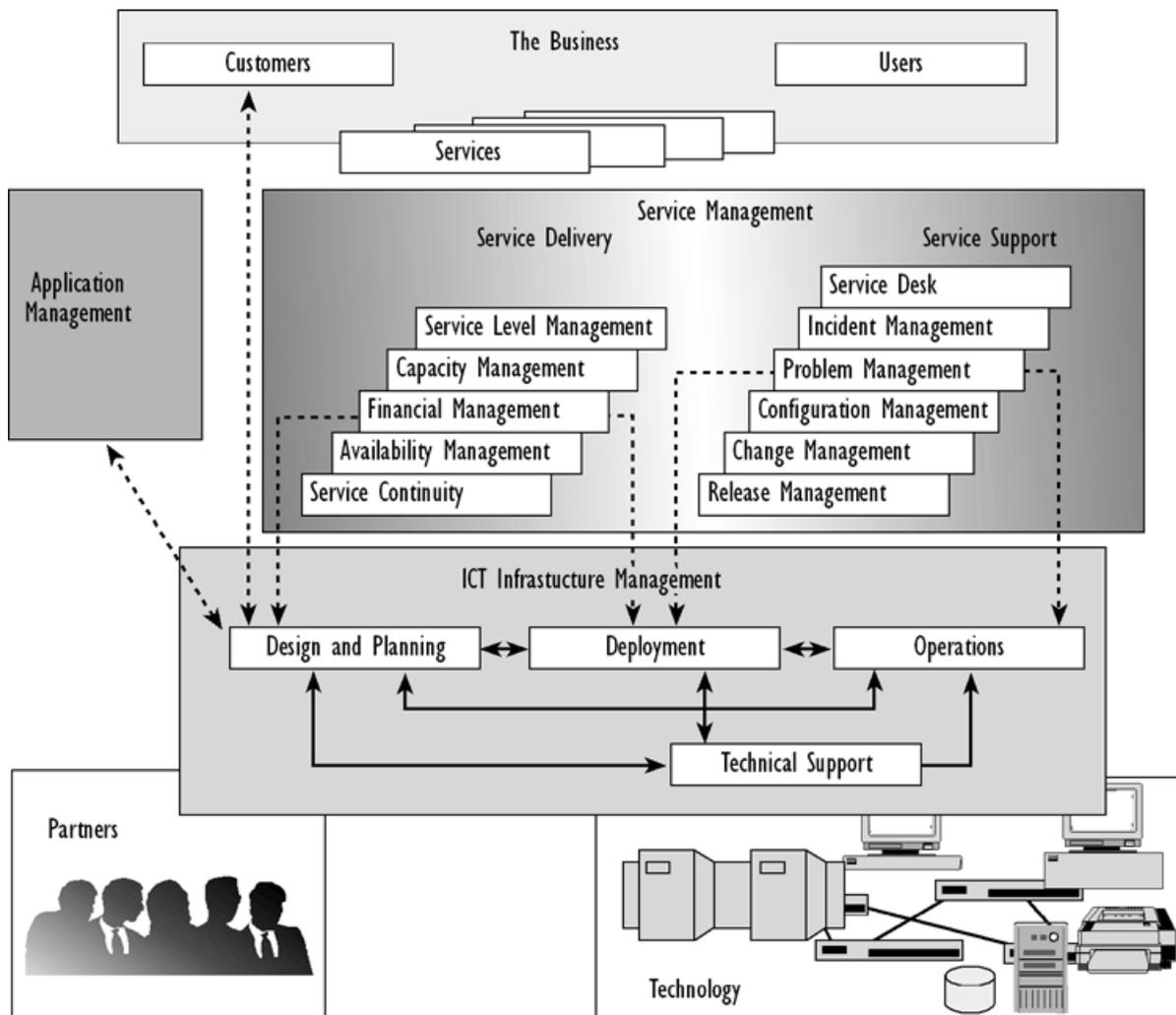
26. EA Technical Alignment Strategy

It is critical that all technical staff stay current and informed with the technical enterprise architecture. The NCITE is a dynamic and evolving technical environment. Changes in one layer can have profound affects on another. IS Department staff needs to have the latest information available to them at all times.

Specific strategies for this layer include:
- Continue the active execution of the Information Systems Department's internal communication plan and feedback channels.
- Support, foster and promote the cross-divisional matrix teams – Strategic Services Teams (SST).
- Actively facilitate cross SST leadership communication meetings.
- Further pursue and implement ITIL change management and other processes.
- Maintain a high level of IS staff technical training and cross training to keep up with changing technology.

The ITIL Framework

*** DOCUMENT END ***