

Proposed Organization for the IT Department of the Egyptian Commercial Sector



PREPARED BY
ATR Task V

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EXECUTIVE SUMMARY

Satisfying the demand for consistent and reliable information, available when needed, requires an appropriate IT organization. An effective IT Department requires clearly defined functions, an appropriate organizational structure, qualified and well-trained personnel, and effective policies and procedures. With these elements in place, management decisions and business operations can be supported with timely, reliable, and secure information.

The assessment conducted by the ATR IT Team and documented in this report analyses the current IT infrastructure and personnel resources. This analysis served as the basis to define the IT department's organization, functions, and personnel requirements to ensure that ECS can support and maintain its IT infrastructure; in addition, it will ensure that the current contractor responsible for the full operation can transfer the knowledge and responsibilities to operate the ECS IT infrastructure to the new IT department.

ATR will assist ECS in the planning and implementation of three major initiatives: (1) creation of the IT Department; (2) technology transfer to migrate the current support from current contractor (LADIS/BIT) to the new IT department; and (3) improvements to the information systems that supports importers/exporters through ECS offices abroad. The proposal herein corresponds to the deliverable associated with the creation of the IT department. In addition to this proposal, ATR will support ECS with the procurement of the necessary IT infrastructure and training to establish the new IT department and also to migrate the portfolio of applications to the herein-proposed target software architecture. ATR will assist ECS in identifying the appropriate personnel for key positions; however, staffing the IT department will be a responsibility of ECS.

Major Findings:

The analysis of the current IT function identified the following gaps:

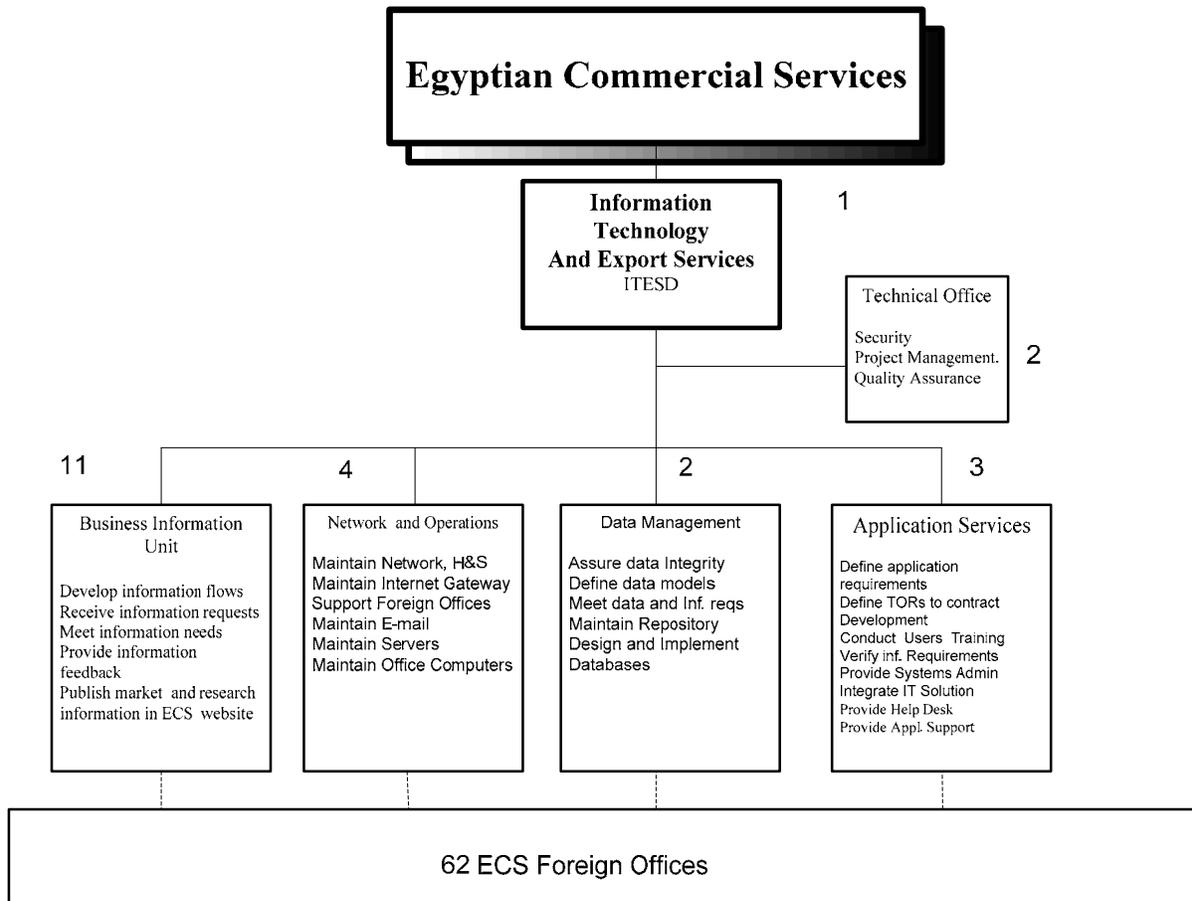
- The Information and Export Services Department (IESD) has carried out a very good effort in staffing a provisional IT function with 4 permanent IT employees and two attaches. These personnel have prepared relevant information to support the ATR analysis and the preparation of this proposal for an IT organization.
- Application development, system administration, system operation, and support and maintenance functions were outsourced to LADIS, an Egyptian software integration company. This approach made ECS wholly dependent on the contractor. Although outsourcing is a valid IT management approach, the institution needs to maintain control of critical system components such as requirements management, information, and system administration. Very limited technology transfer occurred during the three-year contract with LADIS.

- Although the formal IT function has not been established, the two attaches assigned to the IT function are managing the contract with LADIS and acting as liaisons for application administration and data management.
- There is no formal IT strategic plan handled by ECS. LADIS stated that in the absence of reliable sources, they developed a portfolio of applications based on their own interpretation of ECS needs. A well-documented strategic analysis of ECS business associated with IT is not available.
- The current LADIS contract expires in March 2005. ECS wants to use its own IT organization to support and operate the ECS IT infrastructure and build the knowledge base in order to have a sustainable IT department.
- Current IT personnel (permanent staff and attaches) can be integrated within the proposed IT organization. However, they need to upgrade their skills through training to meet the position requirements proposed in this report.

Major Recommendations:

- Reorganize the Information and Export Service Department as the Information Technology and Export Services Department (ITESD)
- Evaluate and approve the proposed Mission and Objectives Statement for the new IT department of ECS.
- Implement the proposed organization for ITESD. The new organization follows.

Proposed ITESD Organization



- **The Technical Office** will support the director of the department in monitoring project execution, defining IT security policies and procedures, ensuring that outsourced contracts fulfill configuration management and quality assurance techniques for software development, and coordinating the work among four units.

Staff: 1 IT analyst (existing IT employee), 1 Business analyst (existing IT attaché)

- **The Business Information Unit** is responsible for identifying information opportunities to serve exporters in Egypt and importers abroad, identifying information to support marketing opportunities for Egyptian products, and responding to the ECS foreign offices with appropriate information to support their activities.

Staff: 1 Manager (existing IT attaché), 10 Information Analysts (existing attaches at ECS Headquarters on a rotation basis)

- **The Data Management Unit** will maintain the repository of data available to serve the information needs and export services of the ECS Foreign Services and Exporters stakeholders. The unit will ensure that the appropriate data models are defined to serve the information requirements of ECS.

Staff: 1 Manager (existing IT employee), 1 Systems Analyst (new essential position)

- **The Application Service Unit** will be responsible for analyzing the information requirements defined by the Business Information Unit and converting those requirements into IT requirements. The Website application and the Paperless applications fall into this category. The Application Service Unit will not develop software. [This](#) unit will define the application information requirements and functionality to meet specific business needs. Application development and implementation should be outsourced. This approach will minimize the impact of personnel turnover due to rotation of attaches.

Staff: 1 Manager (existing IT employee), 2 Systems Analyst (existing IT employees)

- **The Network and Operations Unit** will be responsible for the entire operation of the Network, hardware, and software components. This unit will absorb the role of the current contractor. In addition, this unit will work with the technical office to ensure that the IT infrastructure is secure and is appropriate to support the portfolio of systems in production.

Staff: 1 Manager (IT existing position), 3 Network Specialists (new essential positions)

- Summary of Personnel Needs for ITESD

Unit	Existing Personnel in IESD	Existing Personnel in ECS	New Essential Personnel
Head of the Department	1		
Technical Office	2		
Network and Operations	1		3
Data Management	1		1
Application Services	3		
Business Information	2	9	
Total: 23	10	9	4

- Integrate the software platform to minimize the support and maintenance requirements. Currently, ECS pays for eight consultants to support three different operating systems: Linux (Domain and E-mail security system), Windows 2000 (Website and application under Oracle), and Novell (E-mail). We recommend that ECS migrate to Windows 2003 server as the target software platform to manage the network and applications including E-mail. ATR needs further analysis to determine whether a migration from Oracle to SQL is justifiable. This analysis will be carried out during the Technology Transfer project.
- Implement a training program to provide training courses to the management and technical personnel. Training programs will be personalized to fit specific skills requirements to [each](#) position. Since ECS personnel rotate periodically, training needs [will be](#) defined continuously.
- The Network Unit and the Data Management Unit require core specialized personnel that should not be subject to rotation.
- Head of the ITESD, the four units, and the technical office should take the following courses:
 - Leadership and Supervisory Skills
 - Delegation of Responsibility
 - Introduction to IT Essentials
 - Managing Technology Change
 - Communications and Interpersonal Skills
 - Project Management
 - Strategic Planning for Information Technology
 - Quality Assurance Practices
 - Security for Information Technology

Technical personnel including systems analysts without a formal IT education or experience should take the following courses:

- Windows 2003 Server (Network and Operations)
- Technical Security for Windows-based applications (Network and Operations)
- Information Requirements Analysis (Business Information Unit, Application Services)
- Network Security (Network and Operations)
- Oracle/SQL Design and Development (Data Management)
- Systems Analysis and Requirements Analysis (Data Management, Business Information Unit, Application Services)

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1.0 Background

ECS wants to strengthen the IT function, establishing a permanent staff that can take responsibility for the network operation and can assist ECS in implementing effective information systems to support its mission and strategic objectives.

The Information and Export Services Department (IESD) has taken a very proactive role in establishing an IT Unit. Several documents have been prepared to support this initiative. In addition, IESD has proposed the creation of the Business Information Unit, a very well thought initiative that will allow IESD to serve ECS's business strategists more effectively.

The assessment conducted by the ATR IT Team and documented in this report, used the documents prepared by IESD and interviews with technical and management personnel involved in the IT function as the basis for the analysis of the current and future IT function. In addition, the ATR team analyzed the current IT infrastructure, current plans of IESD, and personnel resources to recommend the reorganization proposal that can give IESD a strategic role in supporting ECS information needs related to its mission and strategic objectives. ATR also considered the ECS requirement to build an in-house capability to support and maintain the network infrastructure currently outsourced to a local company.

ATR will assist ECS in the planning and implementation of three major initiatives: (1) Creation of the IT Department; (2) Technology transfer to migrate the current support from current contractor (LADIS/BIT) to the new IT department; and (3) Improvements to the information system that supports Importers / Exporters through ECS offices abroad. The [following](#) proposal corresponds to the deliverable associated to the creation of the IT department. In addition to this proposal, ATR will support ECS with the procurement of the necessary IT infrastructure to establish the new IT department and also to migrate the portfolio of applications to the proposed target software architecture. ATR will assist ECS in identifying and training the appropriate personnel for key positions; however, staffing the IT department will be a responsibility of ECS.

2.0 Scope of this Report

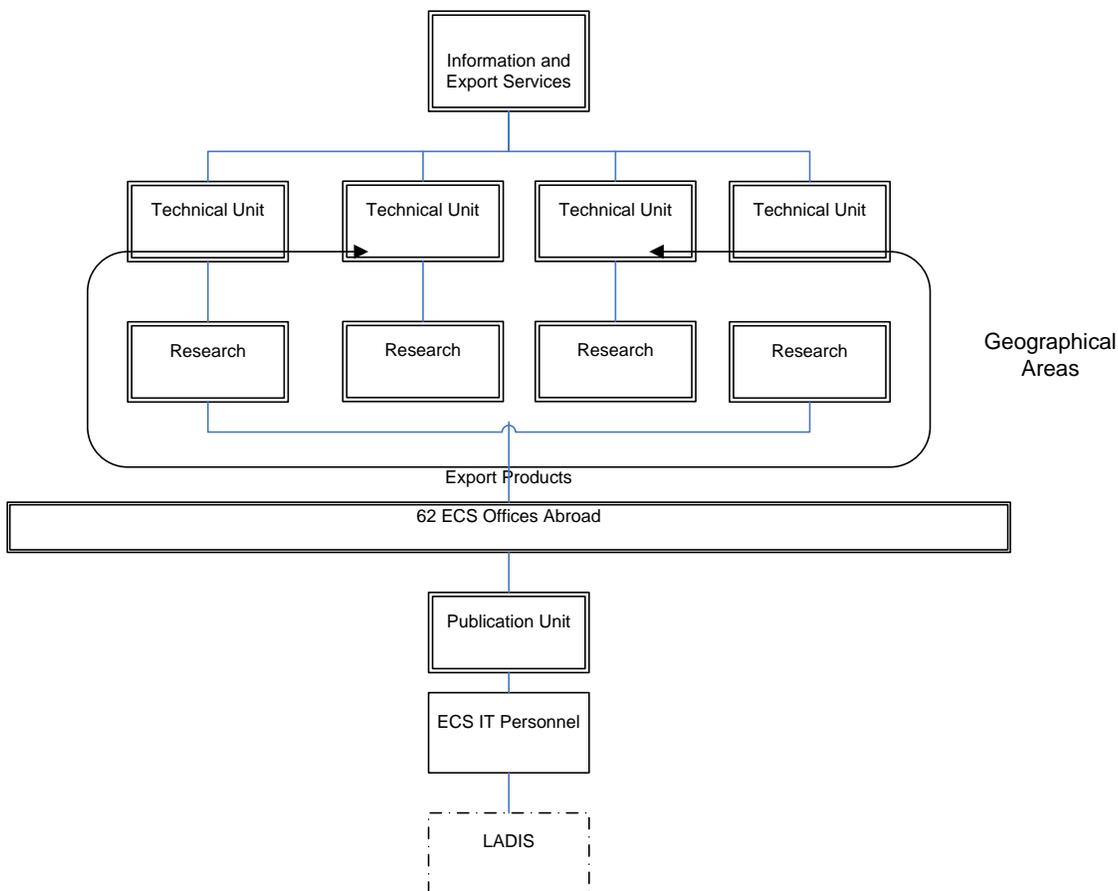
This report is intended to give the head of ECS a recommendation to reorganize the IESD department, balancing strategic activities with IT functions to ensure that IESD can strengthen its role in supporting ECS mission and strategic objectives. IESD, as the department to provide reliable information to export stakeholders in Egypt and abroad, needs to implement a solid and stable IT organization that can deliver reliable information services. This report, proposes a reorganization for IESD with a new name: Information Technology and Export Services (ITESD), defines functions and roles for the proposed units, job descriptions for key personnel to staff these units, and a new IT hardware and software platform.

3.0 Methodology

ATR met with the director of IESD to discuss his vision of the IT services within his current role in ECS. We also interviewed the department's deputy and attaches assigned to the IT function. ATR interviewed LADIS/BIT consultants and managers to understand the current role of the outsourced services. We reviewed the documents prepared by IESD to support the creation of the IT Unit and the Business Development Unit. We used our experience in Information Technology, the understanding of Egypt's IT environment and ECS's information management strategy to propose an organization that will leverage IT with ECS strategic activities. We took into consideration for our analysis, the transient status of ECS personnel and training requirements to ensure uninterrupted and reliable information services.

4.0 Findings

4.1 IESD Functional Organization



IESD has "flat" organization or non-hierarchical organization, except for two management levels in each technical team. Four technical teams are responsible for approximately 25 exportable products. Each team has a head, a deputy, and researchers responsible for specific geographical areas and products. Rotation of products and geographical areas ensure that technicians can be easily replaced, given the rotational status of attaches.

Although [the](#) current functional organization makes information available to possible importers of Egyptian products abroad, the information structure is quite rigid due to inappropriate or outdated information structures and flows. Furthermore, individual information needs for specific offices abroad are not usually met. This is the result of a lack of a formal information technology strategic planning to support ECS offices abroad. IESD anticipates that with the creation of the Business Information Unit (BIU) and the IT unit, the organization will fill the information gaps; however, leverage between these two units does not exist and information flows to respond dynamically to new information needs from offices abroad are not appropriately established. Current IT personnel are permanent and not subject to rotation.

4.2 Current IT Infrastructure, Processes and Functions

4.2.1 Management Function

IESD carries out processes to deliver information through the Publication Unit which makes the information available in the ECS website. The management function for specific geographical areas and products is well defined and sustainable through one or two deputies in each technical unit. The IT functions are currently outsourced and the two assigned attaches and the permanent IT personnel are trying to integrate themselves within the information management function; however, with the lack of a formal functional organization for IT, this integration has not occurred.

4.2.2 Technical Support

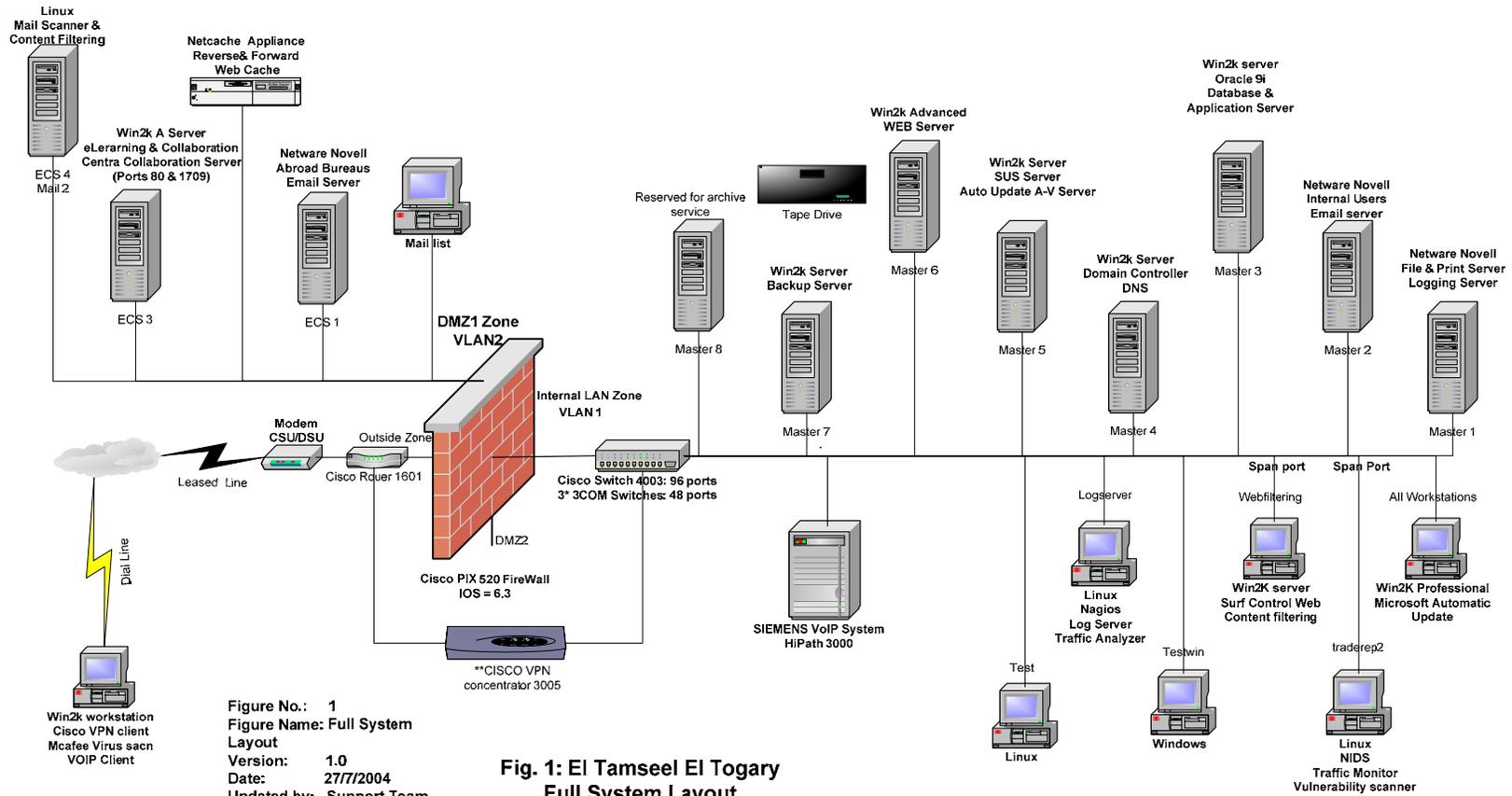
The technical support for the network, applications, hardware, and software components have been outsourced to LADIS. This company also defined the portfolio of applications that ECS should implement, conducted the requirements analysis, and implemented the systems. Outsourcing is adequate especially in the absence of an IT organization capable to absorb these responsibilities. However, ECS feels that at this point they do not have sufficient control on the information and they lack flexibility to respond to new requirements from ECS users. LADIS currently provides the following support functions:

- Network Management
- Database Administration
- Data Entry
- Application support and Maintenance
- Training

The network management includes support and maintenance for the hardware (PCs, servers, and network components), operating systems, and internet gateways.

4.2.3 Current IT Infrastructure

The current IT infrastructure is based on three different software architectures: Novell, Linux, and Windows. The components are shown below.



4.2.4 Application Support and Maintenance Requirements

The current application portfolio of ECS is shown in Table 4.2.4. These applications were defined and partially implemented by LADIS. The main application referred by ECS as the Website, provides form downloading capabilities; however, information provided by offices abroad is attached to emails, printed in hardcopy, edited manually, and re-entered to a database for further publication on the ECS website or to be sent back to offices abroad as email attachments.

**Table 4.2.4
ECS Application Portfolio¹**

Number	Application Description	Support Requirements	Current Status Future Strategy
1	Follow up system for management of Egypt Information Directory	To be determined	Not implemented Further Analysis
2	Information system to manage exporter's directories to specific countries	To be determined	Not implemented Further analysis
3	Exporters Secure Internet Site	To be determined	Not implemented Further analysis
4	ECS Internet/Intranet site	Windows HTML/Java	Implemented
5	E-learning engine and site	e-learning software	Implemented
6	Content Management and Databases Admin system	Oracle, Content Mgmt Software	Implemented Redesign
7	Government ERP system (Includes around 8 Modules covering finance, HR and other standard government back office applications).	Oracle Source code belongs to LADIS/BIT	Partially Implemented Possible migration
8	ECS Offices Management system (ASP Model)	To be determined	Not implemented Needs further analysis
9	ECS legal system	To be determined	Not implemented Needs further analysis
10	Repository for WEB links in different countries	To be determined	Not implemented Needs further analysis
11	Q & A Database and search tool	To be determined	To be integrated in website
12	12-Export Opportunities follow up system.	To be determined	Not implemented To be integrated with Website

¹ Information provided by LADIS/BIT

13	ECS Planning and follow up system	To be determined	Not implemented Needs further analysis
14	ECS Periodic reporting system.	To be determined	Not implemented Needs further analysis
15	Studies follow up and studies search tool.	To be determined	Not implemented Needs further analysis

In the Table above, applications 4, 5, 6 are implemented; however, they need additional functionality and a possible redesign to meet information requirements more effectively. Therefore, the migration to an integrated software platform is feasible. Application 7 has been partially implemented under Oracle. The source code belongs to LADIS and data entry for this application has been also outsourced to LADIS. ECS will need to evaluate the cost/benefit of continuing with this application or implementing a COTS (Commercial Off The Shelf) solution that can meet most of ECS administrative support information needs.

5.0 Recommendations

5.1 Proposed mission and objectives for the IT Department

Mission

The Information Technology and Export Services department will maintain and support a reliable Information Technology infrastructure to effectively contribute to the mission, business objectives, and strategies of the Egyptian Commercial Sector.

Objectives

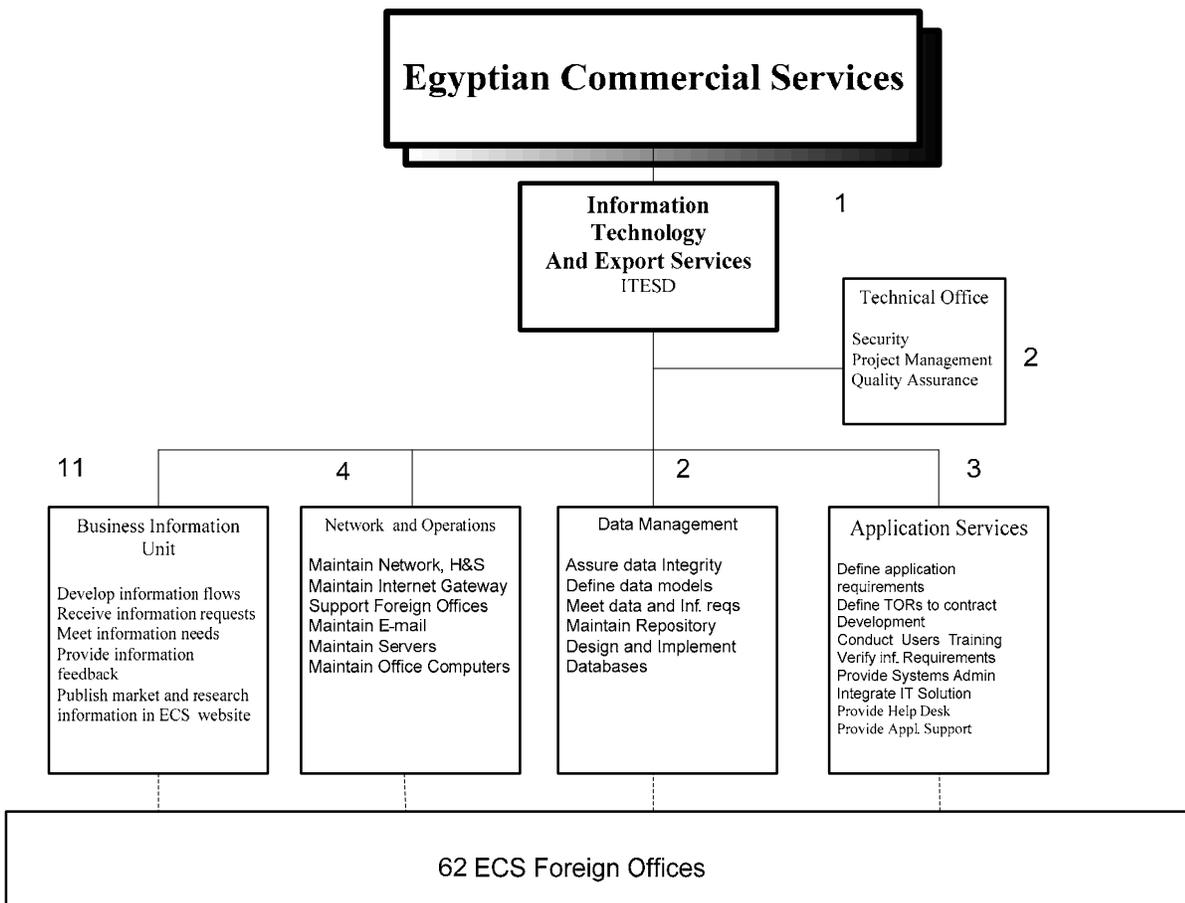
1. *Implement a solid and reliable IT infrastructure and organization to effectively support ECS and ECS offices abroad.*
2. *Make information to support the export business reliable, available when needed, and accessible to ECS offices abroad and external users worldwide.*
3. *Implement E-mail and Internet services to ensure that this capability is reliable and available to all ECS employees.*
4. *Secure and protect the information infrastructure to ensure information integrity, availability, and reliability.*
5. *Disseminate via Internet the information and services that ECS provides to importers abroad and exporters and manufacturers in Egypt.*

Critical Success Factors for this project

1. Review and approve the proposed IT organization
2. Issue the executive decree to formalize the creation of the IT department
3. Staff critical positions
4. Conduct Training
5. Procure Hardware, Software, and Network components

5.2 Proposed Organization

Proposed ITESD Organization



5.3 Functional Areas

ATR proposes five functional units reporting directly to the Head of the Information Technology and Export Services Department (ITESD). The four strategic units (Business, Network and Operations, Data Management, and Application Services) will meet the information needs of ECS (including ECS headquarters and offices abroad) and export/import stakeholders. Each unit will have a manager and a deputy and manage the relevant component in ECS offices abroad as follows:

- Business Unit: Information needs
- Network and Operations: Internet links, hardware, software, application installation
- Data Management: In/Out Data flows

- Application Services: User Training, Help Desk, Application requirements, System Administration

5.3.1 Technical Office

The Technical Office is responsible for assisting the IT manager in defining security policies, standards, and procedures, coordinating the implementation IT security requirements, defining quality assurance policies for IT and coordinating the work among all strategic units of ITESD. Specific main functions include:

- Define and design IT projects and monitor project execution
- Define Information Technology policies and procedures
- Define guidelines to verify the quality of IT infrastructure including networks, servers, and outsourced software applications.
- Conduct QA of IT components and report non-compliance/compliance in accord with QA guidelines and procedures.
- Subscribe to QA publications and upgrades in consistency to ISO 9001-2000 series publications and customize guidelines as needed to make them suitable to ECS.
- Define testing procedures and guidelines and conduct QA testing of specific IT components. Document and communicate results to the appropriate IT Unit or outsourced contractor responsible for the development of IT products.

5.3.2 Application Services Unit

The Application Services Unit receives applications that have been fully tested by the outsourced contractor and the Technical office (Quality Assurance and Testing Unit). It validates that all software requirements for ECS users are met. In conjunction with the outsourced contractor will install the application in the appropriate application servers/PCs. It will conduct user training and pilot testing and will assist users with the deployed applications. The Application Support Unit will also work with the Business Information Unit and the IT manager to analyze information requirements from offices abroad or headquarters ECS users and define strategies to meet those requirements. In conjunction with the technical office, the Unit defines information policies and procedures to successfully integrate new systems/applications with the organization. The main functions for this unit are:

- Exercise administrative coordination and management authority over the design, development, implementation, and support of business and administrative application solutions outsourced to contractors.

- Serve as the primary contact for the Business Information Unit to receive the information requirements from offices abroad and meet those requirements.
- Deliver or coordinate training of users to ensure effective utilization of business and administrative software solutions.
- Support the information requirements identified by the Business Development Unit and define the most effective way to meet those requirements. Verify that information provided to users is reliable and available on a timely basis.
- Establish a Desk Help function to assist users in using applications deployed abroad and ECS headquarters.

5.3.3 Business Information Unit

The Business Information Unit will receive the information needs or business opportunities identified by the ECS offices abroad and convert those needs to information requirements. It will analyze the existing information sources to see if those information requirements can be met and will provide feedback to offices abroad on a timely manner. If information requirements cannot be met through existing systems/applications, it will coordinate with the Application Services Unit the development and deployment of new applications to meet those requirements. It will use the existing infrastructure to make information available to offices abroad using web-enabled applications, Website, and Email capabilities. It will conduct research and marketing on relevant information to support business opportunities abroad and will work with the other units to make this information available to offices abroad on a regular basis. Major functions are:

- Develop information flows. The unit will analyze information needs from offices abroad and users from ECS strategic departments and identify sources and information flows to effectively meet those requirements.
- Receive information requests. Offices abroad will identify business opportunities and needs for information. The BIU will conduct research on the appropriate information to address a business opportunity and will work with other units to satisfy the information request. It will work with offices abroad to establish mechanisms to structure information needs and provide the necessary information to support the information research.
- Meet information needs. Once information requested is properly collected or prepared, it will establish the most effective way to make this information available to offices

abroad and/or users at ECS headquarters, using the ECS IT infrastructure and the cooperation from the Applications Service and Network and Operations Units.

- Publish market and research information in ECS website. In cooperation with the Website Administrator, the BIU will be responsible for the Website content. It will ensure that data published in the Website is accurate and up-to-date and the quality of published documents is assured.
- The BIU will establish appropriate backup information to support exports of specific Egyptian products to specific countries. Strategies and information will be customized to meet specific information needs based on product type, international standards, and country regulations for imports.

5.3.4 Network and Operations Unit

The Network and Operations Unit will ensure that the network, servers, PCs, and operating systems are fully operational. It will manage the network and implement security initiatives to ensure that all security requirements are met. It will work with the Application Service Unit to successfully meet E-mail requirements. It monitors network performance and implements improvements as needed to maintain the IT infrastructure operational and suitable to meet the information requirements identified by the Business Information Unit and the Application Services Unit. The Unit will have the following functions:

- Prepare operational plans for applications in production to ensure that the operational requirements are effectively met.
- Administer and maintain the IT components that support the operation of applications in production.
- Implement security routines that comply with security policies to prevent unauthorized access to systems and networks.
- Ensure that systems in production and associated network infrastructure are operational
- Maintain backups for all systems/programs in accord with security policies and procedures defined by the Technical Office.
- Maintain the backup library
- Maintain a log of operational problems. If problems are related to application functionality or data, refer the problem to the Application Support Unit.
- Implement the Help Desk to receive support or maintenance requests from users regarding PCs or network problems.
- Preserve the physical integrity of all IT components deployed at ECS.
- Maintain the operational requirements of the E-Mail application assigning accounts and passwords to authorized users.
- Implement the network security requirements to prevent unauthorized access to the IT infrastructure.

- Define a plan to secure provisions for operational supplies of systems in production.
- Prepare contingency plans to ensure the availability and integrity of the IT infrastructure that supports ECS.

5.3.5 Data Management Unit

The Data Management Unit is responsible for data integrity, consistency, and availability. It will provide the necessary data relationships to support application development. It is responsible for database administration and security. It will define views and data relationships to maximize the storage and retrieval of data. It maintains data models to effectively support business information requirements of ECS including Websites and Web-based applications.

Specific responsibilities include:

- Participate in the definition of software and data architecture to support IT solutions.
- Define data models based on information requirements to support ECS strategic programs.
- Define logical data relationships to support the implementation of the IT strategic plan.
- Define the physical design for the corporate database and rules to maintain data quality and data integrity.
- Provide data models and views to software developers/outsourced contractors
- Maintain the Asset Repository up-to-date with respect to data models, data relationships, business relationships and associated data, and location of data.
- Define and implement policy and standards for data
- Implement security practices to ensure integrity, availability, and confidentiality of data
- Maintain data dictionaries and business rules to support implementation of system and applications.
- Define contingency plans to preserve data integrity and access (availability) to authorized users without significant interruptions
- Maintain audit trails to identify modification to sensitive data
- Facilitate the data management and requirement of Websites and Intranet web-based applications.

5.4 Training

The following courses should be included in the training plan for existing and new IT personnel in their new proposed roles and responsibilities.

Table 4-1
Recommended Training for Key IT positions

IT Key Position	Training Requirements
IT Manager and Heads of the 4 proposed units and Technical Office Specialist	Leadership and Supervisory Skills Delegation of Responsibility Introduction to IT Essentials Managing Technology Change Communications and Interpersonal Skills Project Management Strategic Planning for Information Technology Quality Assurance Practices Security for Information Technology
Business Analysts (BIU)	Strategic Planning for Information Technology Assessment of Information Needs
IT Analysts (ASU) Web Administrator	SQL database design, Crystal Reports Website Administration and Support
Database Administrator (DAU) IT Analyst (DAU)	SQL database design
Network Analyst (NOU)	Network Management and Administration Network Design

5.5 Job Descriptions and Qualifications for Key Positions

Job descriptions and qualifications for key positions are included as ANNEX I of this report.

5.6 Proposed IT Architecture

The proposed target architecture is shown below.

5.7 Hardware, Software, and Network Components

- ATR proposes migrating all the servers' operating systems to MS windows 2003. This step will help in finding the appropriate human resources for supporting the IT organization and will create consistency in the network. Also it will make the maintenance and support much easier and faster.
- For the same reasons, ATR proposes migrating the E-mail servers to MS exchange 2003. One E-mail server will be dedicated to handle the internal email traffic (inside the firewall) and another server will be responsible for the external accounts that belong to the outside offices. Both servers will be in the same site.
- The domain controller will be upgraded to Windows 2003 domain. Additional server will be added to act as a backup domain controller to ensure network authentication in case of any failure in any one of the domain controller servers.
- The Web server will be upgraded to Windows 2003 rather than windows 2000.
- SUS server will be upgraded to windows 2003 and will provide updates to all the network machines including servers and workstations. It will act as antivirus server as well.
- The backup server and the archive server will be upgraded to windows 2003.
- The file and print server will be migrated to windows 2003 server and an additional storage device will be added to the network to support the storage services.
- The e-learning & collaboration application will remain as it is and the operation system will be upgraded to windows 2003 server.
- The operating system for the mail scanner & content filtering server will be upgraded to windows 2003 as well.
- All the clients will be upgraded to windows XP professional and will be automatically updated by the SUS server. ATR will develop a plan to upgrade clients' hardware and software.
- Servers: taking into consideration that running windows 2003 server will not require more configuration than the existing, we are going to use the current server configuration. However, we can upgrade the server memory if needed. Also we can consider additional hard drives.
- The internet connection service will have 2 MB connection to support the email traffic and the website hosting. Taking into account the move to the new building, the sharing of gateways to Internet will be analyzed to identify possible upgrades. ATR proposes one (1) MB connection from 2 different service providers to provide load balance and fault tolerance.
- The database application server will remain as it is (oracle 9i) and the migration to MS SQL 2003 server will be studied in the next stage.

ANNEX I – Job Descriptions and Qualifications

Job Title: Head of the Information Technology and Export Services

A senior IT expert in management leads the Information Technology and Export Services Department (ITESD). The head of the ITESD plans and manages ITESD resources. He defines strategic policies regarding information, and ensures that commercial representations get reliable information to promote exports/investments. He conducts IT strategic planning to effectively support ECS strategic objectives and programs, and [periodically](#) reviews this plan to ensure that necessary modifications are incorporated to reflect new or modified business objectives and strategies. Main responsibilities are [as](#) follow.

Responsibilities

- Manage the technical office and the four units within ITESD
- Define information technology and export services policies and standards
- Prepare and maintain up-to-date IT strategic plans to support ECS strategic programs
- Keep tracking of implementation plans in execution by ITESD units.
- Prepare plans for implementing ITESD projects including all stages of system development and implementation.
- Coordinate the deployment of IT infrastructure in ECS offices abroad
- Coordinate with ECS the establishment of new procedures and changes to integrate IT components within MOFTI.
- Ensure that the IT infrastructure is solid and [effectively](#) supports the implementation of the ECS strategic plan.
- Define security policies and standards for businesses, applications, data, and network infrastructure.
- Define contingency plans to ensure the continuation in services without disrupting critical information components that support ECS.
- Define training plans to maintain ITESD personnel up-to-date with new technology trends and new software and hardware technologies that could be apply to improve effectiveness in information services.
- Enforce compliance with ITESD policies and standards
- Participate in the process of information requirements analysis, preparation of terms of reference, bids, procurement and installation of IT components
- Coordinate the QA of all IT components (hardware, software, applications, Network), services and deliverables from contractors
- Conduct periodic performance evaluations of key ITESD personnel (heads of units).

Qualifications

Professional Requirements:

- Engineering or Management Degree (mandatory)
- Master's Degree in Business Administration, or Management of Information Technology (desirable).
- Export Business Knowledge

Experience:

- At least 10 years proven experience as manager or IT organizations.
- At least 10 years of experience in implementing Information Technology solutions using web-based, micro-based, and three-tier architecture software technology.
- Database design.
- Knowledge on Enterprise Architecture concepts and frameworks
- Project Management
- Quality Assurance
- Configuration Management.

Skills:

- Capability to manage IT organizations
- Effective communication skills verbally and in writing
- Leadership to organize and delegate work
- MS Project management
- IT policy drafting
- IT and Business Strategic Planning
- Bilingual (English/Arabic)

Job Title: Web Administrator

The Web Administrator maintains the website up-to-[date](#); ensuring that the dynamic information is updated periodically and that information published in the website is reliable.

Responsibilities

Analyze Web-based information requirements and work with the Website developer to ensure those requirements are successfully implemented.

Identify the appropriate data structure and administration to support websites and Web-based applications. Work with contractors for website development to ensure that document management systems that are use in the website are properly integrated within the website administration function.

Work with users to clarify information needs and feasibility of publishing information on the Internet

In conjunction with users, evaluate accuracy and reliability of information to be posted in intranets or the Internet.

Test User Interface screens and Administrative screens developed by the Website developer contractor.

Manage the email received to the Webmaster E-mail box.

Qualifications

Experience:

At least two years of experience in Web Administration.

Skills:

Familiar with Website technology and navigation skills

Bilingual (English/Arabic)

Excellent writing skills in the two languages

Excellent communications skills

Familiar with Website administration

Job Title: Head of the Application Services Unit

The Head of the Application Services Unit plans, organizes, oversees, and administers the applications in production for ECS. S/he is responsible for ensuring that information users are fully satisfied with services and functionality of deployed systems. Responsibilities also include support for application administration, pilot implementations, and training. The head of the application support unit is the primary contact between ECS users and ITESD and works in conjunction with the head of operations and network manager to address network, hardware, and/or operating systems issues. S/he is the liaison between contractors for application development and implementation. It also works with the head of ITESD to ensure that the IT infrastructure is operational, reliable, and secured.

Responsibilities

- Verifies the output of the requirements analysis to ensure that users' information needs are met.
- Ensures that users sign off for the system delivered in production from contractors.
- Maintains a log of application problems reported by users and identify the correct source to fix the problem.
- Prepare users training and associated documentation
- Conduct users training or coordinate outsourced training
- Prepare application deployment plans and monitor their execution
- Assign analyst to specific support of applications as needed.
- Prepare pilot testing plans.
- Conduct pilot testing to test operational requirements. Participate and coordinate testing of applications functionality developed by external contractors to verify compliance with functional requirements
- Prepare economic assessments of applications in production and suggest improvements to minimize operational costs.
- Prepare terms of reference to outsourced application development and support as needed.
- Ensure the compliance of security standards in deployed applications.
- Coordinate with business managers the definition/modification of processes and functions to properly integrated deployed applications with organizational infrastructure.

Qualifications

Professional Requirements:

University Degree in Information Technology or related technical field

Experience:

At least 10 years of experience in implementing and/or supervising IT applications

At least 5 years of experience in user support activities

Skills:

Excellent interpersonal skills

Knowledge of micro-based application implementation

Knowledge of Internet technology applied to Web-based application

Knowledge of MS Office products

Excellent writing skills

Bilingual (English/Arabic)

Extensive knowledge of ECS business strategies

Job Title: Head of the Data Management Unit

The Head of the Data Management Unit is responsible for the integrity, consistency, and availability of data that serves the information needs of ECS. S/he will provide the necessary data relationships to support application development (a proposed outsourced function) and is responsible for database administration and security. S/he will also define views and data relationships to maximize the storage and retrieval data requirements. Responsibilities also include maintaining data models to effectively support business information requirements, ECS Websites, and Web-based applications. S/he also interprets data, and provides advice and consultation regarding implications of using data elements; S/he supports needs assessments, outsourced development and designs and creates databases, and participates in testing and implementation of new applications. S/he provides assistance and training to system users in data interpretation and data use.

Responsibilities:

- Participate in the definition of software and data architecture to support IT solutions.
- Define data models based on information requirements to support ECS strategic programs.
- Define logical data relationships to support the implementation of the IT strategic plan.
- Define the physical design for the corporate database and rules to maintain data quality and data integrity.
- Maintain the Asset Repository up-to-date with respect to data models, data relationships, business relationships and associated data, and location of data.
- Define and implement policy and standards for data
- Implement security practices to ensure integrity, availability, and confidentiality of data
- Maintain data dictionaries and business rules to support implementation of system and applications.
- Define contingency plans to preserve data integrity and access (availability) to authorized users without significant interruptions
- Maintain audit trails to identify modification to sensitive data
- Facilitate the data management and requirement of Websites and Intranet web-based applications.
- Support the development of n-tier application architectures that use multiple databases and servers.
- Support ECS offices abroad with in/out data flows linked to applications.
- Evaluate QA standards and regulations based on ISO 9004-2000 series and select those applicable to the four layers of IT: business, data, applications, and IT infrastructure.

- Prepare QA testing plans

Qualifications

Professional Requirements:

University degree in Management Information Systems or Equivalent

Experience:

- Analysis, interpretation, and manipulation of data
- Implementation of data management and retrieval methods;
- Ability to test and implement modifications and enhancements to database logical and physical designs
- Communicate [with ??](#) and train staff on information resources and data.
- At least 5 years in database design and implementation of IT application solutions.
- Preserve the confidentiality of all proprietary and confidential data and information residing in ECS databases, in accordance with IT Department and Data Management security policies and standards.

Skills:

- Ability to resolve data input, storage and/or retrieval problems and to design solutions and modifications.
- Ability to define data consistency rules and implement them in the database.
- Ability to define applications to collect, maintains, and analyzes data.
- Ability to communicate effectively, both orally and in writing.
- Ability to supervise and train assigned staff.
- Knowledge of database construction, management, and retrieval methods using ORACLE, SQL, Access and other client support languages/databases.
- Ability to analyze operational data requirements and to create and develop data models to meet specific information requirements. .
- Ability to interact with other ITESD Units and understand their roles and responsibilities.
- Ability to maintain the data model repository that supports the Enterprise Architecture

Job Title: Technical Office Specialist

The position reports to the head of ITESD. The security specialist implements and supports information security initiatives throughout the head of ITESD. Acts as a focus and resource for ECS information security matters. Investigates and recommends secure solutions that implement information security policy and standards. Coordinates information security activities and implements security policies recommended in ISO 9000 Series. S/he defines and coordinates the implementation of QA activities to evaluate the compliance with QA standards and regulations for all components of the IT infrastructure deployed at ECS. S/he defines QA policy and standards in accord to ISO 9001-2000 series. S/he implements QA procedures to be observed by the Application Service, the Business Information Unit, the Data Management Unit, and the Network and Operations Unit.

Responsibilities:

- Maintains working knowledge of security policies and standards
- In conjunction with the manager of Network and operations applies information security management knowledge to enhance the security of the open network and associated systems and services.
- Formulates security policy and standards
- Interprets and translates security requirements for implementation in the four units.
- Drafts appropriate information security policies, standards, guidelines and procedures.
- Works effectively with other information security personnel
- Prepares effective presentations and communicates information security objectives to IT personnel and ECS business managers and users.
- Monitors Information Security Program compliance and effectiveness.
- Acts as a resource for matters of information security. Provides pertinent and useful information.
- Provide project management and operational responsibility for the administration, coordination and implementation of information security policies and procedures across ECS
- Assists information technology proponents with security standards compliance.
- Conducts investigations of information security violations and computer crimes.
- Reviews instances of noncompliance and works effectively and tactfully to correct deficiencies.

Qualifications

Education

- A university degree is required and knowledge of IT

Experience

At least 5 years in management and/or implementing information technology

Skills

- Knowledge of Information Security principles and practices.
- Knowledge of all aspects of information security
- Knowledge of security policy formulation
- Excellent writing and verbal communications skills
- Bilingual capability (English/Arabic)

Job Title: Head of the Network and Operations Unit

The Head of Network and Operations unit manages the IT infrastructure of ECS including the intranet, Wide Area Network, hardware (servers, printers, and PCs), operating systems, and electrical networks that serves ECS headquarters and ECS offices abroad. S/he ensures an efficient, stable, and reliable infrastructure to effectively support business strategies and operations for ECS users. S/he is responsible for managing and developing network integration, administration and maintenance policies, procedures and standards, and network and security standards and policies. It ensures that all ECS offices abroad have access to the Internet/Intranet gateways.

Responsibilities

- Plans, organizes, manages and evaluates the work of the Network and Operations Department;
- Participates in IT strategic and operational plans and initiatives to meet ECS goals and objectives;
- Implements operational plans, processes, procedures and policies required to achieve overall ECS information-related performance results;
- Participates in the implementation of the IT Strategic Plan for ECS, specifically related to the network, hardware, and software architecture of ECS and offices abroad;
- Plans and evaluates the performance of assigned staff; establishes performance requirements and personal development targets; regularly monitors performance and provides coaching for performance improvement and development;
- Provides leadership and works with staff to create a high performance, customer service oriented work environment that supports the department's mission, objectives and service expectations;
- Manages and participates in the design, implementation, configuration, upgrading, testing, troubleshooting, tuning and maintenance of the ECS network infrastructure including a variety of network services such as: exchange mail services, web and proxy servers, print and file services and VPN services.
- Designs, plans, develops and maintains the network hardware and operating systems, including planning network topology, installations and changes; manages and may participates in the configuration of network routing and switching software to serve ECS and offices abroad.
- Serves as network security administrator, including administering the firewall rule base; monitors network intrusions; develops, recommends, implements and enforces the ECS network security policy and remote access standards and guidelines; maintains security on network and server equipment.
- Manages and utilizes network management software and remote network management tools to monitor and analyze network traffic; analyzes network capacity and growth requirements and recommends network upgrades and

enhancements to meet ECS needs; develops and recommends specifications for network hardware, software and cabling upgrades and enhancements; develops and recommends cabling and connectivity standards, uses and levels; may participate in the most complex troubleshooting and problem resolution issues.

- Maintains and updates schematics and documentation of network structure and devices; develops and recommends network contingency and disaster recovery plans.
- Support Application Services with the Help Desk function, including: installation, configuration, troubleshooting and maintenance of computer hardware, peripherals, devices and software; responses to customer requests for services and resolution of problems associated operational problems of computer hardware, standard and specialized software, peripheral equipment, devices, network connectivity and other technology tools;
- Supports QA activities of the Technical Office to ensure that the IT infrastructure complies with QA policies, standards and procedures. Reviews new or revised projects for conformance to established technical, system and operational standards;
- Manages network administration tasks; designs and ensures the recoverability of lost data through proper and adequate backup and data recovery methods, in coordination with the Application Services and Data Management Units.
- Coordinates work with other departments' staff to ensure appropriate network availability to meet end user and operational information needs.
- Provides back-up support to ECS users as needed.

QUALIFICATIONS

Education

- University degree with a major in computer sciences, management information systems, computer engineering or a related field preferred; and seven years of progressively responsible experience in the analysis, design, development and administration of local and wide area network (LAN/WAN) infrastructures, including two years of supervisor or project management experience; or some combination of education, training and experience that produces the requisite knowledge and ability.
- Microsoft Certified Systems Engineer (MCSE); Cisco Certified Network Administrator or the equivalents.

Experience

- Develop conceptual frameworks and apply state-of-the-art technology to the design and management of network infrastructures.
- Install, configure, maintain and manage the operations of IT infrastructure to achieve optimal technical performance and end user support.

- Analyze and troubleshoot complex computer system and network issues, identify the reasons for network and network device problems, failures and malfunctions and develop optimal solutions.
- Read, interpret and apply complex technical publications, manuals and other documentation.
- Communicate clearly, both orally and in writing.
- Exercise sound, expert independent judgment within general policy guidelines.
- Establish and maintain effective working relationships other Head Unit Managers and end users.

Skills

- Network architectures and theory and principles of local and wide area enterprise network design and integration, including topologies and protocols.
- Principles and practices of advanced network administration.
- Industry design and configuration standards for enterprise networks, including: hardware, network protocols and network operating systems.
- Network management systems, including principles and practices of security management and security design.
- Operating principles, parameters, uses, capabilities, characteristics and limitations of servers, network operating systems, PC's, mid-range computers and related equipment.
- Standard principles, practices and methods of project management.
- Principal and practices of effective management and supervision.

Job Title: IT Analyst

The IT analyst will support the functions of the Data Management Unit. S/he will provide the necessary data relationships to support application development (a proposed outsourced function) and is responsible for database administration and security. S/he will also define views and data relationships to maximize the storage and retrieval data requirements. Responsibilities also include maintaining data models to effectively support business information requirements, ECS Websites, and Web-based applications. S/he also interprets data, and provides advice and consultation regarding implications of using data elements; S/he supports needs assessments, outsourced development and designs and creates databases, and participates in testing and implementation of new applications. S/he provides assistance and training to system users in data interpretation and data use.

Responsibilities

- Define data models based on information requirements to support ECS strategic programs.
- Define logical data relationships to support the implementation of the IT strategic plan.
- Define the physical design for the corporate database and rules to maintain data quality and data integrity.
- Maintain the Asset Repository up-to-date with respect to data models, data relationships, business relationships and associated data, and location of data.
- Maintain data dictionaries and business rules to support implementation of system and applications.
- Facilitate the data management and requirement of Websites and Intranet web-based applications.
- Support the development of n-tier application architectures that use multiple databases and servers.

University degree in Management Information Systems or Equivalent

Experience:

- Analysis, interpretation, and manipulation of data
- SQL database design
- Implementation of data management and retrieval methods;
- Ability to test and implement modifications and enhancements to database logical and physical designs.

Skills:

- SQL database design

- Ability to analyze operational data requirements and to create and develop data models to meet specific information requirements. .
- Ability to interact with other ITESD Units and understand their roles and responsibilities.
- Ability to maintain the data model repository that supports the Enterprise Architecture

Education

- SQL Database Design
- Systems Analysis

Job Title: Network Analyst

The Network Analyst supports the IT infrastructure of ECS including the intranet, Wide Area Network, hardware (servers, printers, and PCs), operating systems, and electrical networks that serves ECS headquarters and ECS offices abroad. S/he ensures an efficient, stable, and reliable infrastructure to effectively support business strategies and operations for ECS users.

Responsibilities

- Participates in the implementation of applications to meet network, hardware, and software requirements including network components, PCs, and operating systems of ECS and offices abroad;
- Designs networks and verifies the implementation of network requirements with contractors.
- Support the network requirements and services such as: exchange mail services, web and proxy servers, print and file services and VPN services.
- Designs, plans, develops and maintains the network hardware and operating systems, including planning network topology, installations and changes; manages and may participates in the configuration of network routing and switching software to serve ECS and offices abroad.
- Maintains security on network and server equipment.
- Manages and utilizes network management software and remote network management tools to monitor and analyze network traffic; analyzes network capacity and growth requirements and recommends network upgrades and enhancements to meet ECS needs;
- Develops and recommends specifications for network hardware, software and cabling upgrades and enhancements; develops and recommends cabling and connectivity standards, uses and levels; may participate in the most complex troubleshooting and problem resolution issues.
- Maintains and updates schematics and documentation of network structure and devices;
- Support Application Services with the Help Desk function, including: installation, configuration, troubleshooting and maintenance of computer hardware, peripherals, devices and software; responses to customer requests for services and resolution of problems associated operational problems of computer hardware, standard and specialized software, peripheral equipment, devices, network connectivity and other technology tools;
- Supports QA activities of the Technical Office to ensure that the IT infrastructure complies with QA policies, standards and procedures. Reviews new or revised projects for conformance to established technical, system and operational standards;
- Performs network administration tasks; designs and ensures the recoverability of lost data through proper and adequate backup and data recovery methods, in coordination with the Application Services and Data Management Units.

QUALIFICATIONS

Education

- University degree with a major in computer engineering or a related field preferred; and seven years of progressively responsible experience in the analysis, design, development and administration of local and wide area network (LAN/WAN) infrastructures under Windows 2003 operating system
- Microsoft Certified Systems Engineer (MCSE); Cisco Certified Network Administrator or the equivalents.

Experience

- Installing, configuring, maintaining, and managing the operations of IT infrastructures to achieve optimal technical performance and end user support.
- Analyzing and troubleshoot network issues, identifying reasons for network and network device problems, failures and malfunctions and developing optimal solutions.
- Network Administration Systems based on Windows 2003 Operating System.

Skills

- Network architectures and theory and principles of local and wide area enterprise network design and integration, including topologies and protocols based on Windows 2003 operating systems.
- Principles and practices of advanced network administration.
- Industry design and configuration standards for enterprise networks, including: hardware, network protocols and Windows-based network operating systems.
- Network management systems, including principles and practices of security management and security design.
- Operating principles, parameters, uses, capabilities, characteristics and limitations of servers, network operating systems, PC's, mid-range computers and related equipment.