

Best Practices of IT Organization Design

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1. Introduction

This document is a guide to conducting IT organizational design for the IT departments in the kingdom of Saudi Arabia government. It is a living document, and it will be further developed and regularly reviewed to ensure that it continues to serve the IT department needs in the government.

1.1. Purpose

The purpose of this document is to provide guidance for IT managers in selecting appropriate unit structure that suits their strategy, needs and constraints. It has an Arabic version of it residing on the government website (Yesser) for public use.

The document is targeting the IT managers as the main audience, because they make the decision makers regarding the application the design process or not.

1.2. Document Structure

The document starts with an executive summary, to provide a brief of the content of this document. Then it moves to emphasize the approach of organizational design, and briefly explain its steps. After that, it describes a simplified IT organizational model, to bring consensus on the basic concepts used throughout the document. Finally, it provides detailed description of each step in the organizational design process.

The design of the document aims for simplicity and straightforward reading. It moved the too detailed and long material into appendices, to keep the reader in the context; It also uses references to other documents in the program, see Section [1.5 Reference](#).

1.3. Referenced Documents

The documents listed below represent relevant material to the subject of IT organization structure and they provide details on their designated subjects:

1. Guidelines for Project Management
2. IT Job Descriptions
3. Guidance for IT Strategic Planning
4. IT Processes Documentation

2. Executive Summary

The IT organization structure should serve the purpose of the IT department depending on its strategy. IT managers must select the most appropriate structure based on sound justification and based on explicit coverage of their needs. If the structure does not fit the purpose, problems will begin to arise in performance, roles, communications and many others.

As the Information Technology field is continuously changing and emerging, IT department managers should review the structure of their IT departments and adjust them according to any changes in the strategy or any input that contributed in the current structure.

The IT Organization structure should not be a mere chart of units and positions. It is actually a design produced by a systematic and well thought process based on facts, standards and experience.

The process of designing the IT department starts by validating the need for re-design. It is important to make sure that the IT department has problems related or caused by the structure. The process then moves to collection of facts, and making strategic decisions about how the IT department wishes to proceed with the process. The IT department can adopt a comprehensive design, and then tune it according to their need, or it can build the design progressively following a series of logical steps. The process also describes how to use the facts to action the design, by staffing it, then adapt it to the existing situation of the IT department, and finally implement it.

As there are so many options and variations of the IT organization design, the approach of the process strived to make it as generic as possible in terms of fitting to all types of IT Organizations/Departments in the government. Nevertheless, the process produces a very specific and custom structure that aligns with and complies to the IT department strategy, needs, and situation.

3. Towards IT Organizational Design

IT Organization Design is a broader and more comprehensive concept than mere organizational chart or structure. The following table summarizes the main differences:

Table 1 - Comparison between Organization Chart Vs Organization Design

Criteria	Organization chart	Organization Design
Nature	An output in a diagram or chart	A process that produces not only the organization chart, but also the supporting justification and details
Driver	Driven by the laws and regulations in the Government	Meets the laws and regulations but driven by Vision, Mission, Strategy, Goals and objectives
Scope	Focus on structure and the static part of the IT department	Focus on requirements, structure and behavioral (how it works) aspects of the IT department
Flexibility	Tends to be stable, with minimal changes	Flexible and reacts to changes in its drivers and requirements
Communication	Defines hieratical communication paths and reporting	Defines all communication paths (horizontal and vertical), roles and functional responsibilities
Integration	All variations need to be aligned with its static form	Integrated and aligned with business goals and environmental changes

In designing an organization, it is very tempting to move into chartering the required sections, assigning managers, and distribute the current staff or planned staff over the identified sections. However, we have to keep in mind that the IT organization design process is systematic, well thought and logical. It moves from high-level requirements that emerge from the objectives and goals, into clear factors that affect the design, and then carries on to build the design itself incrementally with multiple iterations of designing and validating until the process reaches an appropriate design.

In describing the best practice of the IT Organization design, the document provides a detailed and explained process with supporting examples and templates. This approach will:

1. Allow the IT departments to quickly adapt a ready design
2. Clarify process steps as it is applied by example
3. Encourage customization and tuning according to specific IT department needs

3.1. IT Organization Design Goals

The IT management conducts the IT organization design process at strategic and tactical levels. It aims to achieve the following objectives:

1. Alignment to new strategic directions of the organization
2. Solve problems resulting from structure inefficiencies
3. Eliminate job conflicts
4. Minimize errors and deficiency resulting from human behavior
5. Clarify uncertainty regarding the hierarchy and distribution of work and responsibilities
6. Enable the ability of predicting results by minimizing the personal behavior options

3.2. IT Organization Design Activities

The purpose of this process is to change the current IT department structure into the one that fits the purpose {being vision, strategy, goals, etc...}. The input to this process is a management decision to initiate it. The output of it is an actionable plan to implement the change or the decision to abort this exercise. The following table summarizes the process:

Input	Steps	Output
<p>§ Initiation from the IT manager to apply the IT Organization Design process</p>	<ol style="list-style-type: none"> 1. Validation of the need to change 2. Identify critical design factors 3. Construct a candidate design 4. Transform into actual design 5. Plan for implementation 	<p>§ New Organization Structure and how to implement it</p>
<p>The purpose of this process is to change the IT department structure in order to meet set plans and objectives</p>		

Table 2 - IT Organization Design Process

The following diagram depicts the main process steps and their activities:

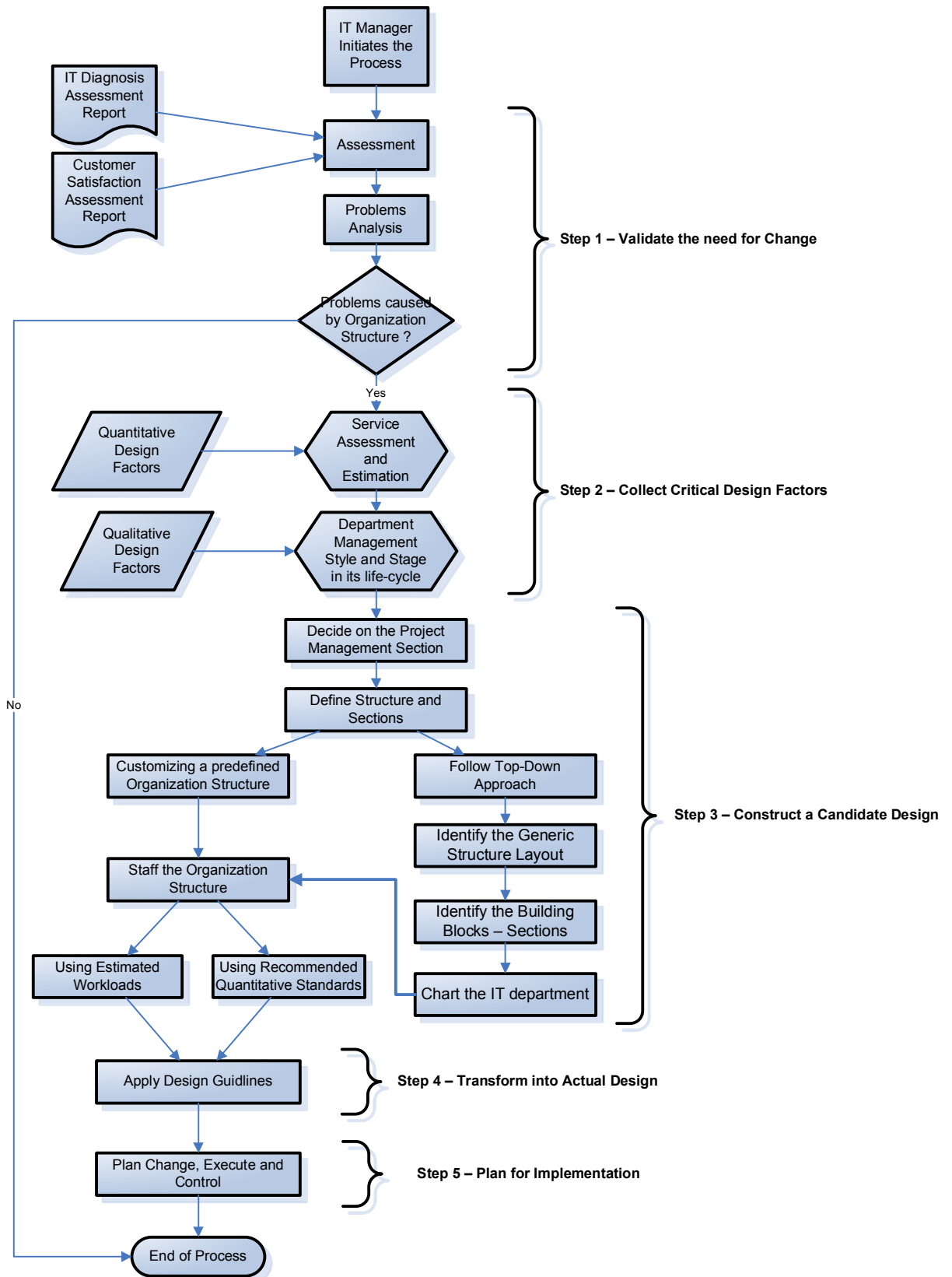


Figure 1 - Process Flow Chart for Organization Structure

Please refer to [Section 5.0 IT Organization Design Activities](#) to have the details required to implement each step.

4. Overview of IT Organizations

4.1. IT Vision and Mission

The purpose of the IT department represented by its vision and mission statements has direct influence on the recommended IT organization design activities.

4.1.1. Vision

Most IT Organizations/Departments are looking for providing a quality professional service for its customers. They aim to achieve customer satisfaction and support the business of the entity they belong to it.

During the analysis of some IT Organizations/Departments in the Government of Saudi Arabia, their IT managers provided the following set of vision statements:

“To be a service based entity that provides quality and professional services to the internal organization users”

“Enhance the services on a national level and be a raw model for cultural improvements by increasing the computer usage, the Internet, the awareness of IT, training and reduce piracy”

“To provide the best possible services with quality, professionalism and on time, resulting in happy and satisfied end users”

“To provide service and support for the all the business departments”

4.1.2. Mission

Very few IT Organizations/Departments are differentiating its vision statement from the mission statement. However, those who do, have a mission statement stating a goal to achieve short-term plans and objectives.

The mission statement encourages and directs the daily actions of the IT staff toward the achievement of the most important and aspired objectives. It is usually focused, specific, simple and easy to remember. Below are some examples:

“Achieve customer satisfaction”

“Execute the yearly plan”

“Meet or exceed each customer expectation in each service”

It is important to spend time while setting the vision and mission. More details on that will be covered in the IT Strategic Planning document: [“Best Practices of IT Strategic Planning”](#).

4.2. IT Strategy, Goals and Objectives

The IT strategy summarizes the long-term goals and direction. It affects the design of the IT department directly. Moving from generic to specific, the planning focus moves chronologically in the following order:

1. Vision and Mission
2. IT strategy Plan
3. Goals and Objectives
4. Detailed plans for
 - a. Budget
 - b. Projects
 - c. Work (Tasks per resources)

For more details regarding the IT strategy, please refer to "[Best Practices of IT Strategic Planning](#)"

4.3. IT Model

This following model is a simplification of the generic IT elements in most of the IT Departments. This model establishes the main concepts addressed in this document:

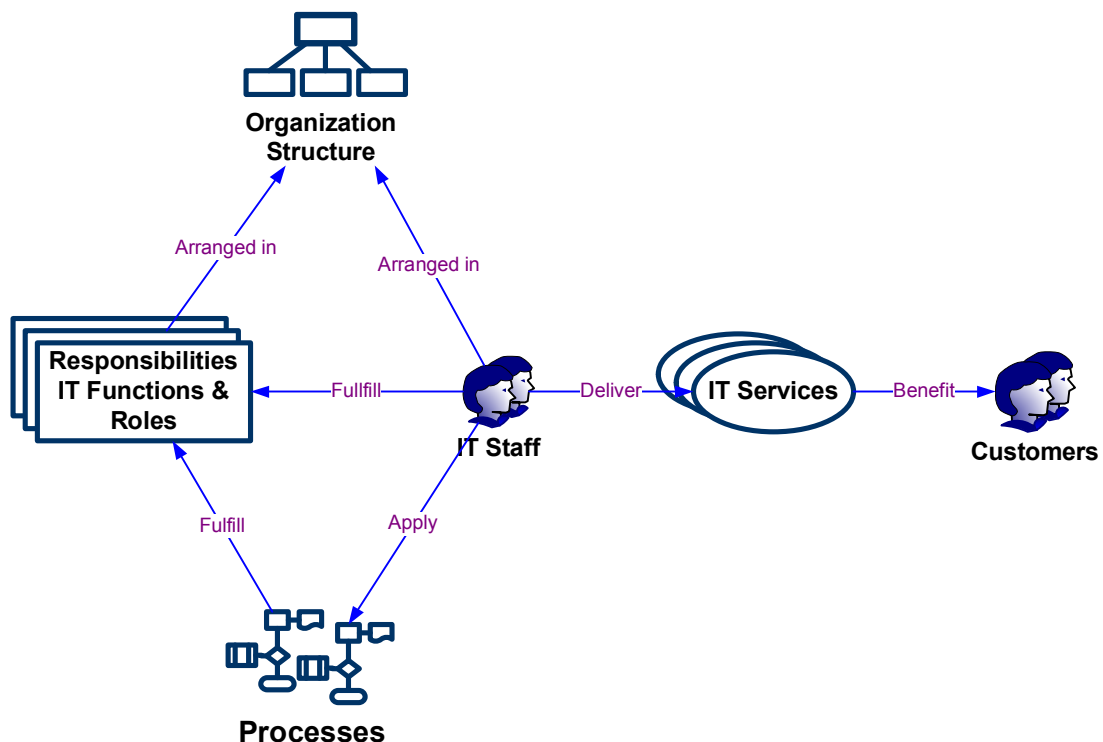


Figure 2 - IT Model

It is important to emphasize that the customers are not very much interested in the IT department internals or work procedures. They only see and make use of the provided services.

4.4. IT Customers

The majority of IT department customers are the internal employees and end users in the governmental entity. However, some IT departments extend service to external customers like:

1. Other IT departments in the government
2. Vendors and suppliers of HW/SW
3. Citizens with problems, issues or suggestions, especially customers of e-Services

The IT staff itself is an internal customer. Especially if human resources development, training, recognition and reward systems exist and properly managed.

4.5. IT Services

The IT department exists to provide services to its customers. These services vary in nature and importance, and they require different skill sets from its providers. The IT services are very important because they:

1. Form the relation between the IT departments and its customers
2. Shape the structure of the IT department
3. Coupled with scale and demand, they justify the budget
4. Drive resource requirement and IT staff development

Some services do not have direct and visible value to the customers; however, these services contribute to the stability and reliability of intrinsic infrastructure benefits. They also prevent problems or loss of data.

The following summarizes the possible services from a customer perspective:

Table 3 - services from a customer perspective

Category	Services
Project Management	<ul style="list-style-type: none"> § Business process support § Automation § Tools and utilities § Office tools § Applications
Help Desk- Desktop Support	<ul style="list-style-type: none"> § Hardware § Operating systems § Office tools and applications support § Personal Applications § User Training

Category	Services
Help Desk-Connectivity	<ul style="list-style-type: none"> § Telecommunications § Internet/Intranet § Email § Printing § Storage
Help Desk- Business Applications Support	<ul style="list-style-type: none"> § Issues § Management Reports § Integration § Applications § Data and information
Indirect Services	<ul style="list-style-type: none"> § Quality § Security § Reliability § Availability § Performance enhancement § Disaster recovery § Procurement § Sourcing and supplier management

4.6. IT Functions

The purpose of this section is to define the functions carried out to develop, deliver and support the services defined in [section 3.3 IT Services](#)

The IT Organization functions form the basis of the IT organization design. They are the building blocks of the department sections and processes performed by the IT staff.

The focus on functions is important because functions provide specialization and visibility to the IT work. Unlike processes, they provide the how-to, and they span multiple functions, sections and IT staff members. The following table summarized the differences:

Table 4 - Comparison Between IT Functions and IT Processes

Criteria	IT Function	IT Process
Answers	What need to be done	How it will be done, by whom and when
Nature	High level description of a group of related and similar tasks or activities	As set of ordered steps or activities to achieve a defined purpose or output
Performed by	A role, specialist	A group of people who are involved in the process

Criteria	IT Function	IT Process
Grouping	Similar functions are grouped based on nature, subject specialty and the needed skills	Grouping of activities depend on the purpose of the process
Output	Fulfillment of a job description or a responsibility	Defined purpose
Combination	Can be combined or further broken down depending on the demand or limitations	Each process is atomic and independent. Two processes cannot be combined, however, complex activities can be further broken down for simplicity but not as a response to demand or low resources
Resources	As less as possible, also might be fulfilled by multiple people of the same role	Spans anyone who is involved or affected by the process
Integration	Designed to be as less inter-dependent on each other	Integrates multiple activities, many people from different sections to achieve the purpose
Importance	IT functions are the principles by which processes are designed and implemented. They solve special cases and situations where there is no identified process or when the process conditions differ.	Processes have specific purpose and conditions, if the conditions differ (or an exceptional situation appears), the process will not be adequate to solve the situation. Then, people refer to the basic principles of work: the IT functions.

When designing an IT organization, the design process maps each supported function explicitly to an organization structure role that fulfills it. The design process also groups the IT functions according to similarity of work, specialization and domain experience. It does not however, link, map, or group the IT Functions to the recommended structure.

The design process can simply list the IT Functions. However, listing them without a solid reference and categorization will lead to duplication and redundancy, a long with confusion and difficulty to manage, grasp and update them.

The solution to the listing issue is framing. If we frame the dimensions and the aspects of the IT functions, we can then use a solid reference. A reference that capture and categorize systematically and clearly any IT function.

In light of the above, the process depended on few concepts/aspects and used them to create this frame:

1. **Engineering:** The concept of engineering relies on technology. It uses the technology to produce technical solutions using design, development, testing, etc...
2. **Management:** The IT department as any organization (or part of and organization or institute) needs management effort. In fact, it requires mature and keen management because it depends on people, the most valuable asset. These functions are the basic management functions: Organizing, Planning, Controlling, etc...

3. **Generic Business Support:** These functions support running any organization, they relate to the regular, well-known and applied functions, like accounting, procurement, customer service, recruitment, training, etc...
4. **IT Specific Elements:** There are elements that are specific to the Information Technology domain. The previous three aspects actually act on these elements, producing variations and shapes that suit the IT needs. These elements include Computer Hardware, software, operating systems, networking, applications, etc...
5. **Work Nature:** Recently, the industry put huge focus on projects and there difference from regular day-to-day operations. The project is unique in nature and has time requirement and an end result/product. However, operations are continuous and long term with requirements on productivity and efficiency. There is also a mix between the two, some work functions take place several times and each time, there is a time allocated for it, we call it Recurring work.

The following diagram depicts the described aspects:

Table 5 - IT Functions Aspects / Dimentions

Technical Engineering	Pure Management	Generic Business Elements	IT Technology Areas
§ Analysis	§ Organizing	§ Budgeting	§ Computers
§ Research	§ Planning	§ Marketing	§ Operating Systems
§ Design	§ Executing & Controlling	§ Accounting	§ Networks and Connectivity
§ Development / Implementation	§ Supervision	§ Procurement	§ Office Applications and tools
§ Testing / Quality	§ Investigation	§ Recruitment	§ Business Applications-Automation
§ Deployment / Deliver	§ Evaluation	§ Outsourcing	§ Telecommunications
§ Support / Maintain	§ Coordination	§ Asset management	§ Security
§ Evaluate Performance	§ Communicating	§ Business Continuity	§ Data-Information-Knowledge
§ Enhance and Update	§ Leading/Directing	§ Logistics	§ Tools
§ Specialization		§ Compliance with regulations	§ Software Development
		§ Services	§ IT Staff
		§ User Incidents	§ Users
		§ Training	
		§ Configuration	
		§ Disaster Recovery	
		§ Audit	

The following table represents all the possible IT functions. In this table, the IT specific elements are represented as columns, while different functional categories apply on these elements in different ways as follows:

1. As Project: The function is applied under a project context, the project is a unique and temporary effort conducted to achieve a specific objective.
2. As Operation: The function is applied as an operation; the operation is a continuous nature of work.
3. As Recurring Function: The function is applied periodically, but it is not continuous, and at the same time not temporary, it has time line, but it recurs every week, month, or sometimes yearly.

Each entry in the table below represents a possible IT function. Each filled entry with (P: Project, O: Operation, R: Recurring) represents a known IT function that can be later on managed, assigned, and organized under the responsibility of a section, or a person in the organization structure.

Table 6 - IT Functions Frame

Functions	Computers	Operating Systems	Networks and Connectivity	Office Applications and Tools	Business Applications-	Telecommunications	Security	Data-Information-Knowledge	Tools	Software development	IT Staff	Users	Category
Analysis	R	R	R	R	P	R	R	P	R	P		R	Technical/Engineering
Research	R	R	R	R	P	P	O	P	R	P			Technical/Engineering
Design	R	R	R	R	P	P	O	R	R	P			Technical/Engineering
Development/Implementation					P	P	O	P	P	P			Technical/Engineering
Testing/Quality	R	R	R	R	P	R	O	R	R	P			Technical/Engineering
Deployment/Deliver	R	R	R	R	P	R	O	R	P	P			Technical/Engineering
Support/ Maintain	O	O	O	O	O	O	O	O	O	O		O	Technical/Engineering
Evaluate Performance	R	O	O	R	R	O	O	O	R	R			Technical/Engineering
Enhance and Update	O	O	O	O	R	O	O	O	R	R			Technical/Engineering
Specialization	O	O	O	O		O	O	O	R	R			Technical/Engineering
Organizing							R	R			O		Pure Management
Planning	R		O	R	P	R	R	R	R	P	O	R	Pure Management
Executing & Controlling	O		O	P	P	O	O	R	R	P	O	O	Pure Management
Supervision	R		R		P	R	O	R		P	O		Pure Management
Investigation							R	R			R		Pure Management
Evaluation					R		R			R	O	R	Pure Management
Coordination											O	R	Pure Management
Communicating											O	R	Pure Management
Leading/Directing					R					R	O		Pure Management
Budgeting	R	R	R	R	R	R	R	R	R	R	R	R	Business Support

Functions	Computers	Operating Systems	Networks and Connectivity	Office Applications and Tools	Business Applications-	Telecommunications	Security	Data-Information-Knowledge	Tools	Software development	IT Staff	Users	Category
Marketing			R		R		R	R		R	O	R	Business Support
Accounting	R	R	R	R	P	R	R	R	R	P	R		Business Support
Procurement	R	R	R	R	P	R	R	R	R	P			Business Support
Recruitment											O		Business Support
Outsourcing	P	P	P	R	P	P		P	P	P			Business Support
Asset management	O	O	O	O	R	O	O	R	R	P	O		Business Support
Business Continuity	R	O	O	R	O	O	O	R		O	O		Business Support
Logistics	O		O		P	O	O			P	O		Business Support
Compliance with regulations	R	O	O	O	R	O	O	R		P	O		Business Support
Services	O	O	O	O	O	O	O	O	O	P		O	Business Support
User Incidents	O	O	O	O	O	O	O	O	O	O		O	Business Support
Training	R	R	R	R	R	R	R	R	R	R	R	R	Business Support
Configuration	O	O	O	O	O	O	O	O	O	O			Business Support
Disaster Recovery	O	O	O	O	O	O	O	O	O	O	O		Business Support
Audit	R	R	R	R	R	R	R	R		P	R		Business Support

P= Project type
O=Operation Type
R=Recurring

5. IT Organization Design Activities

5.1. Step 1 – Validate the Need for Change

Some IT departments are well established and mature. Thus, before spending time and effort in collecting data, and creating organizational design, it is important to validate that the IT department needs this exercise. That is why this step is vital at the beginning. Following are the steps to validate the need for IT Department restructuring or re-design:

1. Conduct self assessment of the IT organization using the “[IT Diagnosis Template](#)”
2. Record all problems, issues, unmet objectives and slippage
3. Conduct customer satisfaction assessment by letting customers anonymously answer the questions in the customer satisfaction assessment template below:

Table 7 - Customer Satisfaction Assessment Template

Question	Answer [1 Poor – 5 Far Exceed]
1. Are the services provided by the IT department are consistent with what was communicated or announced?	
2. Does the IT staff meet the expectations in terms of the Quality of service?	
3. Does the IT staff meet the expectations in terms of the Professional interaction?	
4. Does the IT staff meet the expectations in terms of the Response time?	
5. Does the IT staff meet the expectations in terms of the Technical expertise?	
6. Does the IT staff meet the expectations in terms of the understanding the domain specific business?	
7. How do you evaluate the value of the provided services?	
8. Are you encouraged to call the IT department if you faced a problem?	
9. Are there any services needed that are not currently provided by the IT department? Please specify.	
10. Is the IT staff available during regular business hours?	
11. Does the IT staff provide explanation and clarification on the actions and resolutions performed to solve the problems?	
12. Do you feel embarrassed when you report a problem or incident?	
13. Does the IT department understand your needs?	
14. Does the IT department provide adequate business applications that facilitate or automate your work?	

Question	Answer [1 Poor – 5 Far Exceed]
15. Is the technology infrastructure adequate to your business and technology needs?	
16. Are you happy with the IT services? Why?	

4. Conduct cause-effect analysis, were problems are analyzed to find the real causes. Appendix IV gives a brief description of this process.
5. If there are real causes related to the organization structure, proceed. Otherwise, there is no need to continue this exercise! The following checklist can be used to decide weather there are problems caused by the organization structure or not:

Table 8 - Checklist for Problems caused by Organization Structure

Question	Answer [1 Poor – 5 Far Exceed]
Delays in work and not meeting deadlines	
Arising of unanticipated problems	
Ineffective coordination of activities	
Competing and overlapping responsibilities	
Duplication of work	
Insufficient staff competencies	
invisibility of work of the lower-level employees	

The output of this process is a decision on whether the IT department needs redesign or not.

5.2. Step 2 – Collect Critical Design Factors

The Purpose of this step is to gather the information/factors affecting the organization design in order to base the IT department design on solid grounds. For that, the IT department should collect this information based on facts. Step three (3) and step four (4) depend on them to construct the organization structure design.

These factors can be quantitative or qualitative according to their nature, which affects the activities as follows:

5.2.1. Quantitative Factors

1. Define the different location categories and their numbers. For example:
 - a. Headquarters (One location)
 - b. Large Location(3 locations: Jeddah, Riyadh and Dammam)
 - c. Small Location (1 location in Medina)
2. Identify the needed services at each location and specify if the IT department is currently providing these services or planning to provide them in the future. This will help determining the requirements to provide the planned services.
3. Prioritize and assess the **services** in terms of:
 - a. **Importance:** High, medium or low, taking into account the customer opinion on it and the IT perspective as well because some customers may not fully understand the importance of a service until they lose it!
 - b. **Remote:** Can the service be provided remotely or not
 - c. **Demand:** The expected number of service requests per day

The IT Services definition template below facilitates this assessment:

Table 9 - Services Definition Template

Location	Service	Importance	Remote/ Onsite	Provided/ Planned	Demand/day
Head Quarters	Phone and extension – Connectivity, Help Desk	High	Onsite	Provided	.33
Olayya Branch	Phone and extension – Connectivity, Help Desk	High	Remote	Planned	.75

4. Estimate the average time for providing the service based on the associated roles. This step covers the activities of the “Operation” and “Recurring” nature. However, The IT department handles the activities of “Project” nature on case-by-case basis, because they depend on the scope of the project.

You can use the template for Service Effort Estimation below. This (with the information collected in the previous point) will help in quantifying the expected workload per role, and hence will help in identifying the needed manpower per role and section. This is also a major input in identifying the recommended size of the IT team as whole. The following table is used to estimate the effort needed to provide IT services:

Table 10- ervice Effort Estimation

Location	Service	Roles involved	Required Effort-Hours
Head Quarters	Phone and extension – Connectivity, Help Desk	Service Desk	0.15
		Telecommunication Engineer	1
		Telecommunication Manager	0.5
			<u>1.65</u>
Head Quarters	Internet Access – Connectivity, Help Desk	Service Desk	0.15
		System Administrator	.5
		IT System Manager	.2
			<u>0.85</u>

5. Identify the estimated workloads of the roles required to provide the services. Note that this step covers both existing and planned IT services.

5.2.2. Qualitative Factors

1. Determine the planned management style (Autocratic, Consultative, Participative, or empowering/Delegating). This will help in determining the level of supervision and section level structure.
2. Identify the stage in the life cycle of the IT department (Starting, building, Stabilizing, mature). This in combination of the management style will determine the basic characteristics of the IT Organization structure:
 - a. **Starting:** The IT organization is very young or very small (2-3 people)
 - b. **Building:** The IT organization is at the beginning of its first expansion, It is being established, and there is a considerable demand on systems, infrastructure services and IT people
 - c. **Stabilizing:** IT Processes are being applied, most of the infrastructure systems have been created, and the IT department is looking for a structure that best suits the maintenance and support demand together with the demand for project and new systems
 - d. **Mature:** Processes are optimized, stability achieved, minor problems and issues are arising.
3. Identify constraints of time, money, and people.

5.3. Step 3 - Construct a candidate design

The organization structure consists of sections, positions, roles, and IT functions. All linked together as in the following hierarchal view:

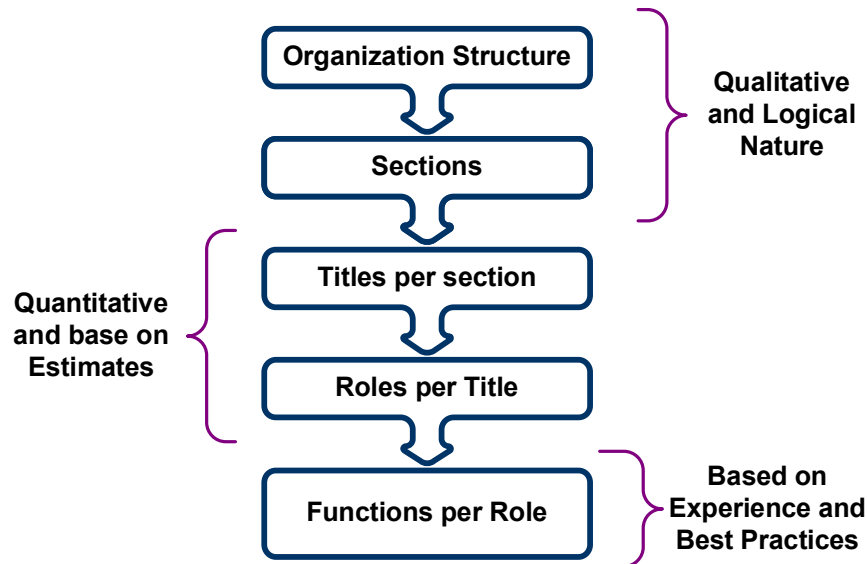


Figure 3 - Organization Structure Components

As the diagram above clarifies, the Structure and sections depend on logical interpretation of the qualitative factors. However, how we staff the IT departments with Titles and Roles depend on estimated workload on each role.

On the other hand, the responsibilities per role depend on similarities and the structure of proven methodologies.

5.3.1. Coverage

Depending on the strategy for the implementation, this step can cover:

1. The existing services only, if there is no immediate plans for expansion
2. The existing and planned services together, where implementation will be done immediately in one shot for both existing and new services

If the IT department wishes to implement the appropriate structure for the current services, and then move as second implementation phase to implement the structure changes for the new/planned services altogether, the IT department should cover poin-1 and point-2 above.

The recommended approach is to cover both because this will allow looking at a comprehensive view of the three structures and find the appropriate strategy implementation accordingly. The following diagram clarifies the recommendation:

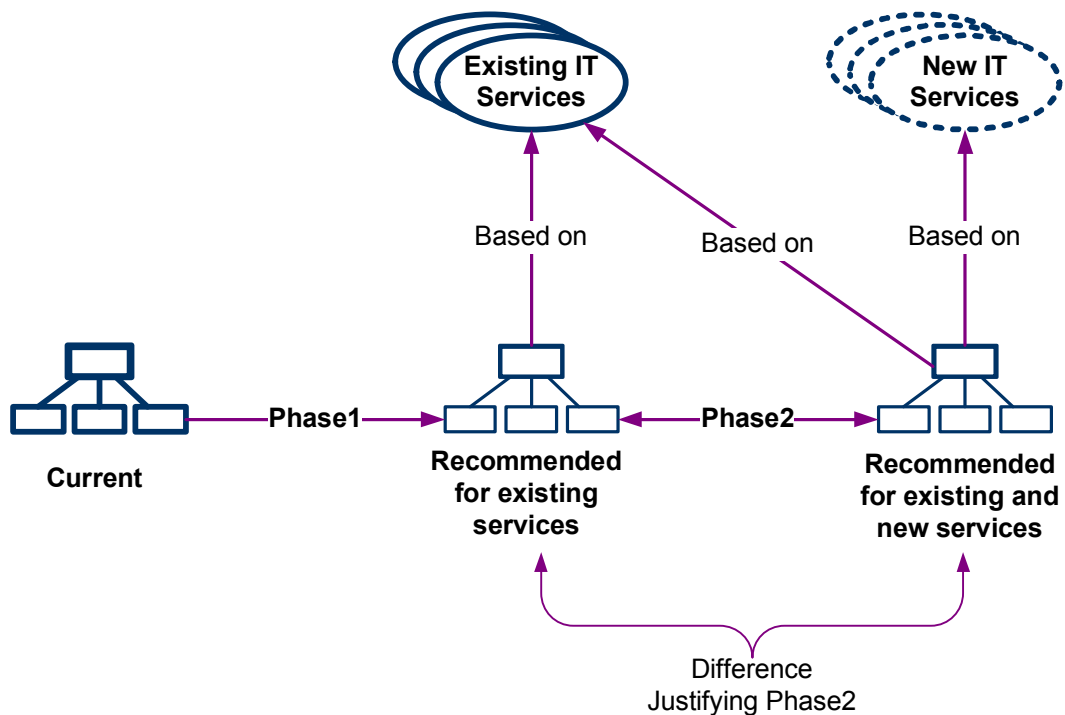


Figure 4 - Strategy According to Structure Gaps

If the difference between recommended structure for existing services and the one covering all services (existing and new), then the implementation can be divided into two stages.

5.3.2. Project Management

The design approach focuses on the activities of “Operation” and “Recurring” nature. However, Project management by nature is a temporary effort, which means the size of its team and its structure is totally dependants on the number and duration of current and planned projects. It is also flexible and driven by project needs.

Most of the IT department standards do not concentrate on the projects, due to their temporary and highly flexible and varying nature. Nevertheless, there are specific standards that focus on project management as a practice regardless of being part of an IT department or not.

Recently, organizations are recognizing the need for dedicated project management unit as “Special Projects Department”. This department has a manager as a project director, and project manager and team for each project.

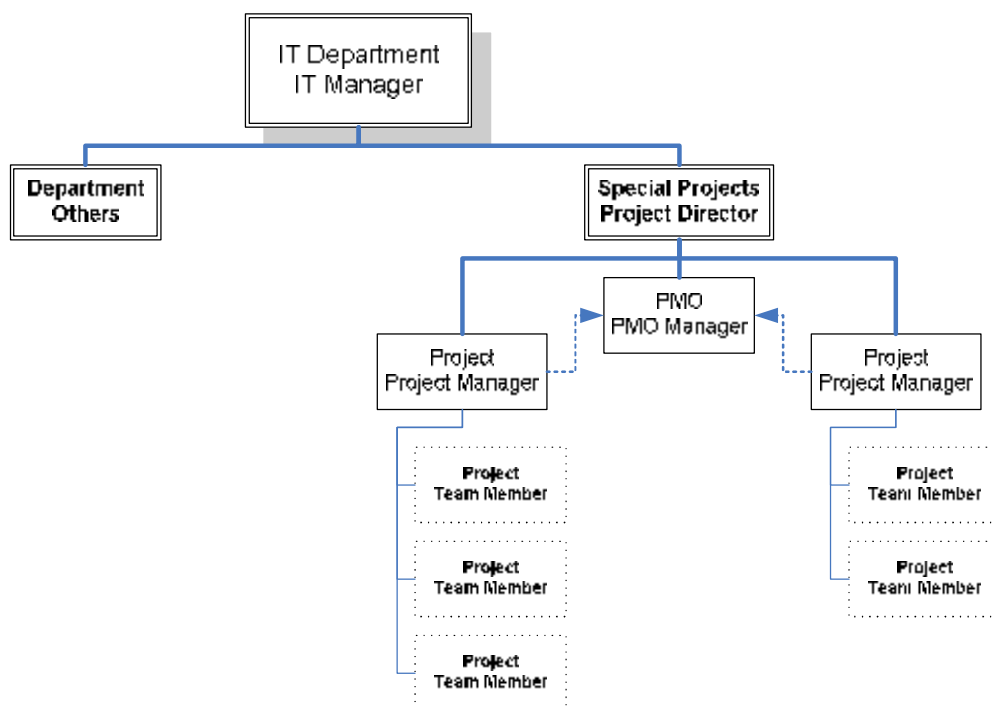


Figure 5 - Special Projects Department

The main concern in the special projects department is staffing projects. It is difficult to determine whether the team member is dedicated to a project/s, or supporting them by the required percentage of his time. This issue depends actually on the situation. However, staffing project should never depend on people who are fully dedicated to operations work. The IT department allocates the project team from the special projects department or from other departments that have recurring work nature and can afford to contribute to the project and carry the assigned project responsibilities.

Allocating a dedicated unit for project is actually a form of realizing a strong matrix organization structure. Instead of classifying how the organization prioritizes all of its projects (and how it allocates and authorizes project managers on an organization level), the process recommends handling each project alone.

Some project may have higher priorities than every thing else in the IT department, while others can work simultaneously with supporting operations depending on the availability of its team.

The [project management best practices document](#) elaborates on the methodology and processes of project management.

5.3.3. Alternatives

There are many approaches to conduct this step. Each approach can combine any of the quantitative structure decisions with the qualitative ones as follows:

1. Structure and sections (qualitative)
 - a. Apply the guidelines to build the structure incrementally in top-down mechanism
 - b. Alternatively, adapt the initial proposed comprehensive design and tune it according to the management style, organization state, constraints to reach a strong structure candidate. The initial comprehensive design is outlined in [Comprehensive IT Structure](#)
2. Job titles and roles (quantitative)
 - a. Applying the workload estimates in man-days to divide the work and estimate the size of each section
 - b. Alternatively, apply standard recommendations to staff the IT department. These estimates can be applied independently of the estimated workload

The following diagram represents the available options:

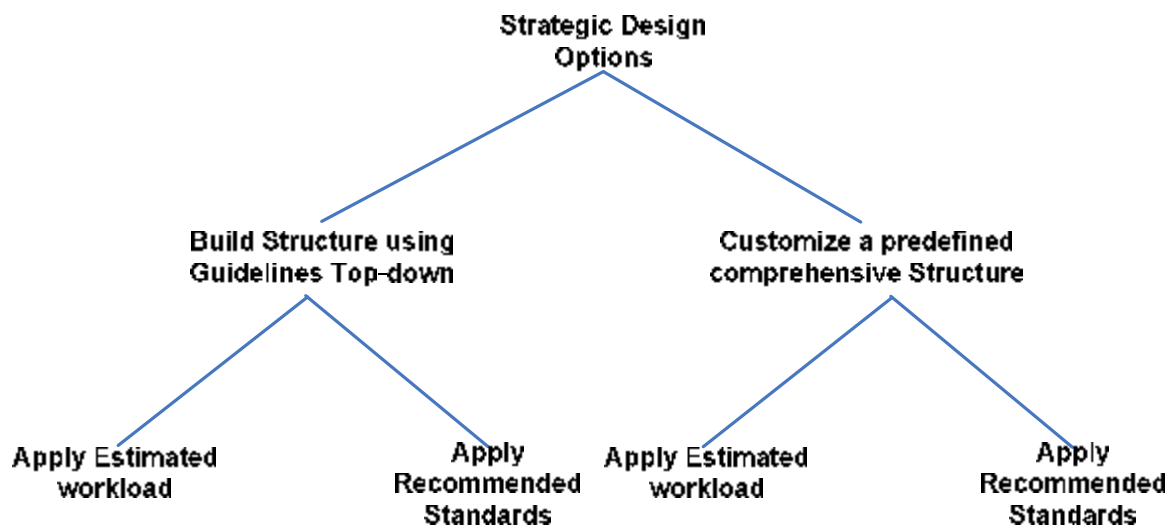


Figure 6 - Strategic Options

The proceeding sections clarify each option.

5.3.4. Structure and sections

Structure and sections define the layout, communication direction, and level. The two options are:

5.3.4.1. Top Down Approach

The top down approach to design the organization depend on the qualitative design factors. It also moves from top sections to lower level sections as follows:

5.3.4.1.1. Identify the Generic Structure Layout

The generic structure layout depends on the management style of IT department as follows:

1. The horizontal layout applies to autocratic and consultative management style. It looks like a flat or semi-flat layout that exposes the manager to a large set of IT staff. See the sample chart below:

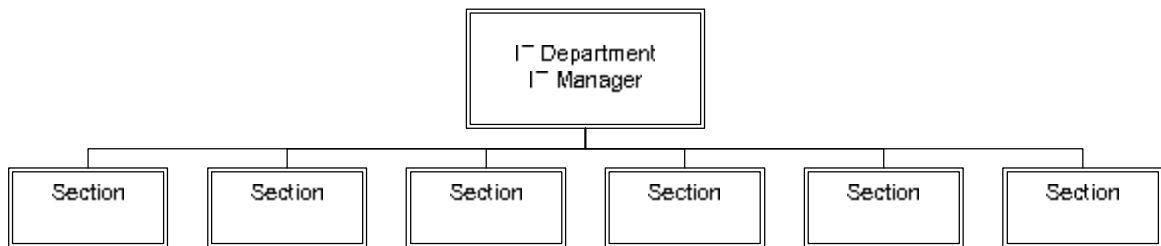


Figure 7 - Horizontal Layout

2. The vertical layout applies to the empowering management style. The manager empowers lower sections, and he is less involved in details or visibility of work of the lowest level. See the sample below:

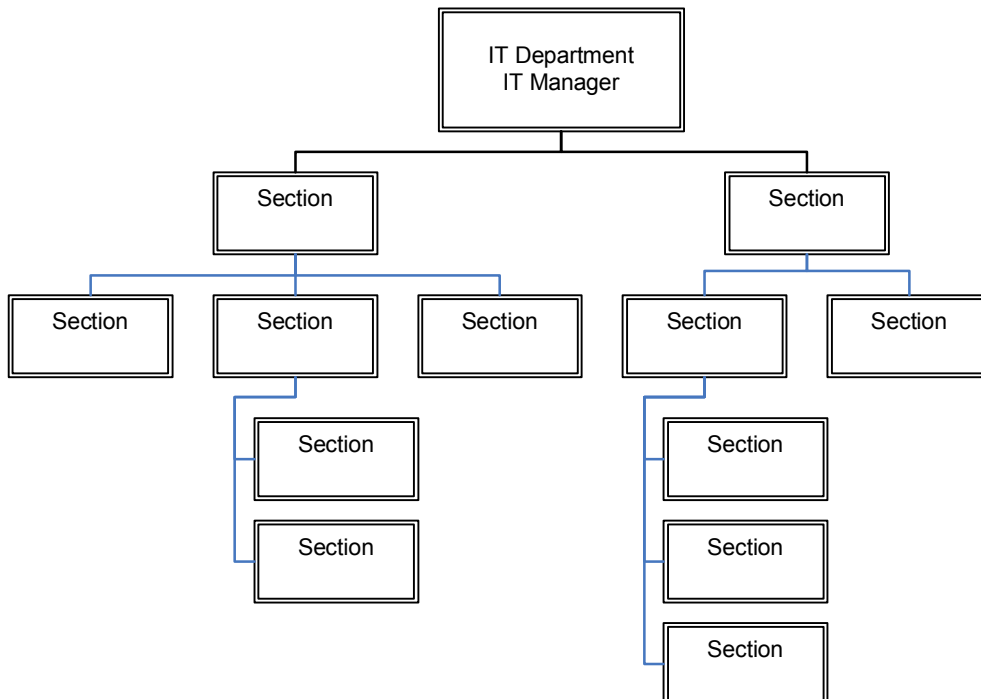


Figure 8 - Vertical Layout

3. The balanced layout suits the democratic management style. It is not too broad horizontally neither deep vertically. The sample below gives an example:

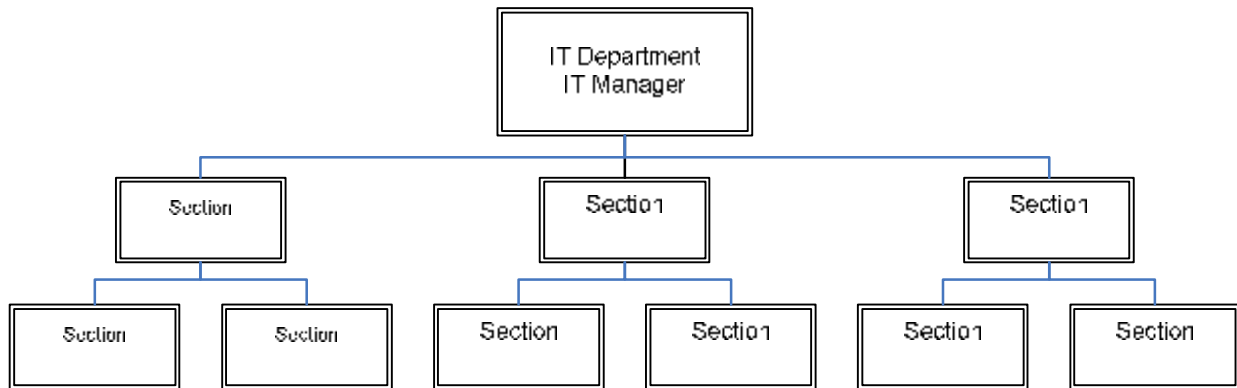


Figure 9 - Balanced Layout

The generic structure also depends on the lifecycle state of the organization, since the priorities differ depending on the stage as follows:

Table 11 - Priorities at Different Stages

State	Priorities
Starting	Communication and efficiency
Building	Communication, visibility and alignment
Stabilizing	Efficiency, performance tracking and processes implementation
Mature	Formality and optimized

The following table summarizes the recommended layouts per stage:

Table 12 - Recommended IT Structure Layout

State\Pattern	Horizontal	Balanced	Vertical
Starting	üü	û	û
Building	üü	ü	û
Stabilizing	û	üü	ü
Mature	û	ü	üü

5.3.4.1.2. Identify the Building Blocks – Common sections

The main sections fall in level-one and level-two hierarchal ranks. Level-one sections report directly to the IT manager, while level-two sections report to level-one sections. The following table summarized the main sections:

Table 13 - IT Department Main sections

Section	Justification
Hardware Infrastructure	Mandatory: This section is concerned with managing the hardware requirements, the hardware inventory and the policies and rules of hardware management.
Network Support	Mandatory: This section is responsible for the development of communications, networking, and systems standards and policies for connected computing environments.
System Support	Mandatory: The system support is responsible for the mission-critical and production-support functions.
User Support	Mandatory: This section is has the responsibility of first-level problem resolution. It provides a central point of contact for customer help, problem status, and feedback to customers
Database Support	Database Systems, information, and knowledge need support
Management Support	Considerable size and logistics
Quality Management	Needed on all states except the starting state
Security Support	Needed on all states except the starting state
Application Support	Business Applications exists and need support
Software Support	Integration and reporting is needed
Telecommunication	Scale and control is needed to support telecommunications
Project Management	Considerable number of projects, especially in the build state

5.3.4.1.3. Chart the IT department – high level

Based on the identified sections and the recommended pattern, create a chart of the main sections. There is no problem in adding more sections or combining the main ones. But this will be systematically performed in step-4. An example of such a structure can look like the following chart:

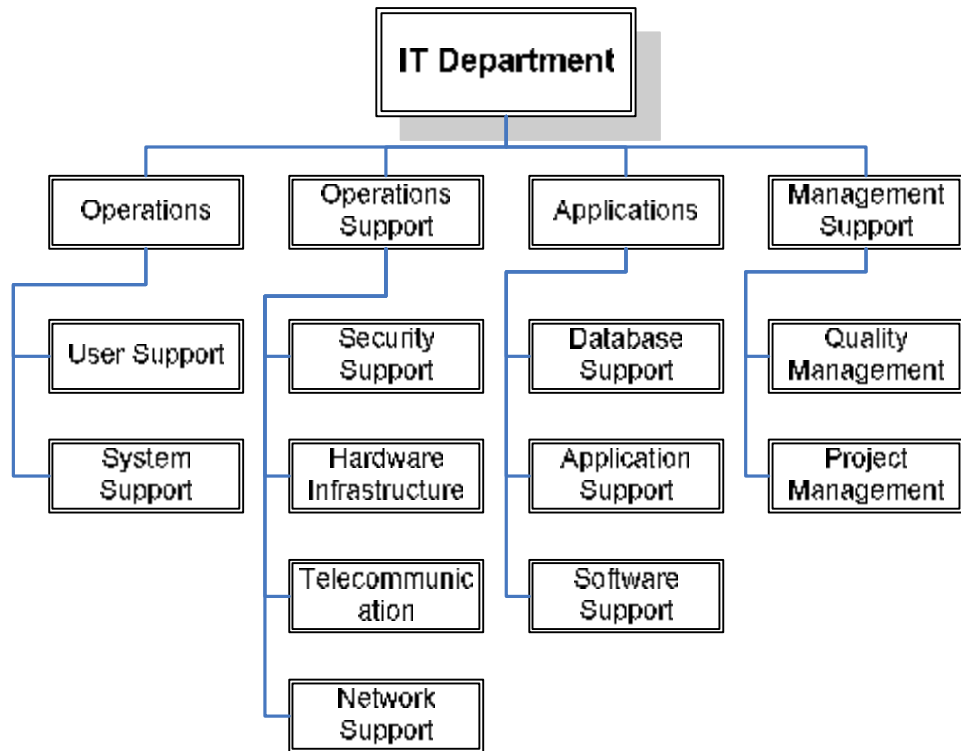


Figure 10 - Sample Preliminary Chart

5.3.4.2. Customizing a predefined Organization Structure

The second approach is to start with a comprehensive and complex organization chart. Then, customize it by removing sections, combining them, or renaming them to a more used and common name. The output of this option is a customized chart that is more suitable for the IT department performing the re-design.

The comprehensive chart contains the section roles. It included roles in order to leave staffing and grouping of roles into job titles until actual staffing takes place inside each section as described in step-4.

The following depicts a comprehensive chart:

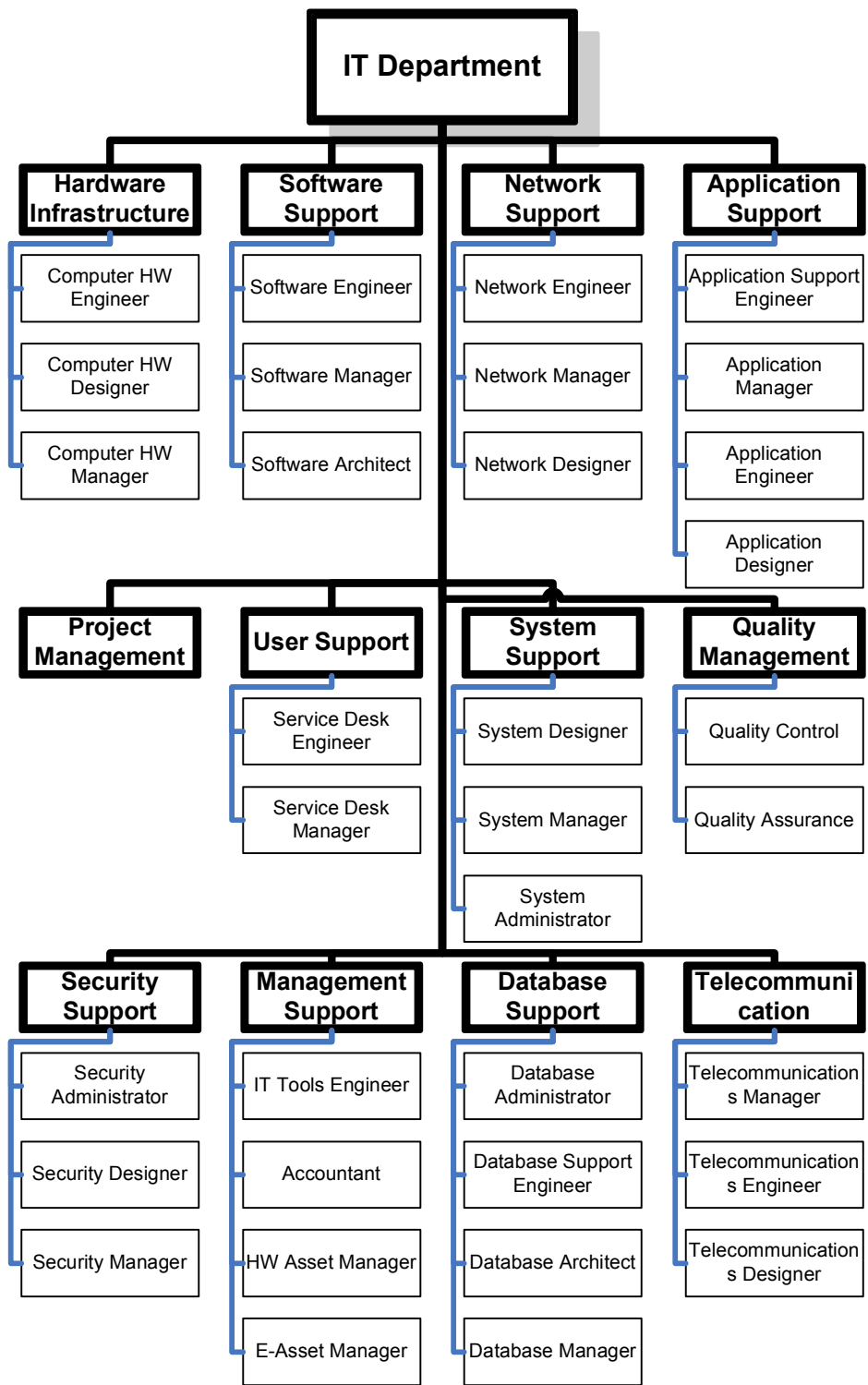


Figure 11 - Comprehensive Chart with Roles

5.3.5. Staffing Requirement for Sections

In this activity, the IT department identifies the required jobs and the associated roles. There are two ways to conduct that:

5.3.5.1. Using Estimated workloads

According to the estimated workloads for each role, the manpower needed in each section is assigned. This will give a view about the number of the IT staff.

Within each section, the distribution of roles on formal job titles can be performed now, or it can be left to the section manager (if exists).

There is a difference though, between identifying the needed job position per section, and what rolls the job position will fulfill. The following table summarizes an example:

Input Date:

Table 14 - Input to Job Design Example

Roles in Network Section	Estimated Workload per Role (Hours/Day)
Network Engineer	12 h/d
Network Administrator	6 h/d
Total	18 h/d

Assuming that the average workload per day is 6 hours, hence we have two options.

Option 1:

Table 15 - Option 1 for Job Design Example

Proposed Positions	Position Roles	Number of Required Positions
Networking Engineer	Network Engineer	2 Vacancies
Networking Administrator	Network Administrator	1 Vacancy
Comment: Note that there is a turnover risk on the Networking Administrator. (if he left, no one will, or be ready to play his role)		

Option 2:

Table 16 - Option 2 for Job Design Example

Proposed Positions	Position Roles	Number of Required Positions
Networking Engineer	Network Engineer Network Administrator	3 Vacancies
<p>Comment:</p> <ol style="list-style-type: none"> 1. The risk was mitigated, if one of the 3 leaves, the role will still be covered 2. This design created a challenging job with multiple roles to fill. This might increase the motivation. 		

It is important as well, to take into consideration the training time, and the expected yearly vacations.

5.3.5.2. Using Recommended Quantitative Standards

IT studies assessment performed on a variety of IT Departments around the world are showing that there are some trends in identifying the resource requirement depending on the number of service users.

These standards vary from one research to another, but there are a consensus that the ratio of serviced users per IT support person is not less that 40:1. In addition, it grows linearly as the number of users increases. This ratio excludes product and application development. Hence the IT department can include a lot more than that if they are in-sourcing some of the development or implementation projects' work.

Other statistics include:

- § Help desk phone calls average from five-seven (5-7) minutes
- § Problems start to arise when the number of directly supervised people by a manager or a supervisor exceed eleven (11) persons
- § The recommended number of hierarchal vertical levels is seven (7) levels
- § The effective working hours for a person attending to work for eight (8) hours a day are six (6) hours. At least 2 hour goes for other activities.

5.4. Step 4 – Transform into Actual Design

In this step, the regulations and rules of the Saudi government are applied. In addition, any constraints or risks that have impact on the structure are reflected on the candidate design. The result of this might be consolidating of jobs or sections, or further breakdown of them.

The following table summarizes some of the guidelines, with their justification. These guidelines apply on the candidate design to produce an actual and implementable one.

Table 17 - Guidelines and Justifications

Guideline	Justification
Empower sections to plan and organize their internal work	Challenging and empowering jobs
Environmental changes and preparation	Readiness for the e-Government services
Alternative or replacement for each core position (Succession Planning)	Eliminate the identified risk in KSA regarding high turnover in IT staff
Load the titles with more roles, planning responsibilities, authority, and exposure to end users	Creates job challenge and satisfaction because it : <ul style="list-style-type: none"> § Increase the size or responsibility § Allow them to understand the meaning of the work § Let them know the feedback on their performance
Grouping around measurable results, immeasurable result should be distributed between other sections	Facilitate performance evaluation and increase variety of work

5.5. Step 5 – Plan for Implementation

The purpose of this step is to plan to achieve the actual design. The planning covers each of the following:

- § Recruiting Vs Firing
- § Time table
- § Current Staff changes in roles and positions
- § Logistics and formal approvals
- § Documenting, Communicating and formalizing the new design
- § Establishing the reporting of the IT department to the upper level of management

Each action item in the plan should have a time line and a committed owner. The IT manager should track this plan as any regular work plan.

The implantation does not stop here. The IT manager follows it through until it is completed. After that, The IT manager assesses the situation and by evaluating the new design, and by making sure the problems that were caused by the structure are resolved or minimized.

If they problems persist, The IT manager takes the appropriate corrective action accordingly. He might also consult other IT departments about possible solutions. However, the one thing the IT manager should avoid is to leave the problems as is without response or action.

6. Lessons Learned

The organization structure of the IT department is the visible representation of the IT department 'Organization'. By looking at it, it describes the functions and to a certain degree the services provided by the IT department. It also gives an idea about the size and the nature of work being performed.

The more the IT organization structure is aligned with the IT vision, mission and objectives, the more it will serve its purpose, and facilitate the implementation of needed changes.

The design process in this document is based on few principles and lessons learned in organizational design/re-design. The application of these principles is actually more important than the "how-to" and the mythological representation of it (However, the design process inherently applies all of them). The following list summarizes these principles as lessons learned or general design recommendations:

1. Base management decisions on facts and adequate understanding of the situation
2. Align the organization structure with the IT strategy
3. Keep the customers in mind and seek the state of being "Customer Centric"
4. Address real causes of problems , not just its symptoms
5. Design the organization based on required services, functions, and the estimated workload
6. Keep the end results in mind, the end results of the IT department are its services to the customers
7. Take into consideration the environment, the stage of the IT department, and the planned management style that will be applied in managing the IT department
8. Dedicate the suitable setup for project management as it is one of the major functions of the IT department
9. In re-designing the organization structure, ignore the current design and apply the concept of re-engineering (the current design with its problems can affect the design process) seeking a "radical" change rather than an enhancement or minor improvement
10. Apply world standards as much as possible
11. The change process is one of the most challenging endeavors, it requires careful and comprehensive planning, execution, tracking, and corrective action when deviation occurs
12. The organization design process is a systematic process, based on facts and experience in the IT field. If done well, the organization structure can be one of the strongest and most helpful tools in implementing strategy, change and improvement in general
13. It is recommended to make the IT Department reporting directly to the top management of the organization