

# Analyzing Business Goals and Constraints



Chapter 1

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# Objectives:



- ❧ Using a Top-Down Network Design Methodology
- ❧ Analyzing Business Goals
- ❧ Analyzing Business Constraints
- ❧ Business Goals Checklist

# Using a Top-Down Network Design Methodology



Albert Einstein:

“The world we've made as a result of the level of thinking we have done thus far creates problems that we cannot solve at the same level at which we created them”.

# Using a Top-Down Network Design Methodology



- ❧ The predicament of the network can result:
  - ❖ Hard to understand and troubleshoot
  - ❖ Don't perform as well as expected
  - ❖ Don't scale
  - ❖ Don't match a customer's requirements
- ❧ A solution to this problem is to use a streamlined, systematic methodology in which the network or upgrade is designed in a top-down fashion.
  - ❖ Top-down network design methodology that focuses on customer's requirements, constraints and goals.

# Using a Top-Down Network Design Methodology



❧ Good network design must recognize that customer's requirements, embody Business and Technical goals, include:

- ❖ Availability
- ❖ Scalability
- ❖ Affordability
- ❖ Security
- ❖ Manageability

❧ A service level

Many customers also want to specify a required level of network performance.

# Using a Top-Down Network Design Methodology



Top-down network design:

❧ A methodology for designing networks that begins at the upper layers of the OSI reference model before moving to the lower layers.

❧ It focuses on:

- Applications
- Sessions
- Transport

(before the selection device at the lower layers)

# Using a Top-Down Network Design Methodology



- ☞ Top Down network design process include:
  - Exploring divisional and Group structures
  - Iterative

# Using a Structured Network Design Process



- ⌘ Top-down network design is a discipline that grew out of the success of structured software programming and structured systems analysis. The main goal of structured systems analysis is to more accurately represent users' needs, which are unfortunately often ignored or misrepresented. Another goal is to make the project manageable by dividing it into modules that can be more easily maintained and changed.



# Using a Structured Network Design Process

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**Structured systems analysis has the following characteristics:**

- ❧ The system is designed in a top-down sequence.
- ❧ During the design project, several techniques and models can be used to characterize the existing system, new user requirements, and a structure for the future system.
- ❧ A focus is placed on understanding data flow, data types, and processes that access or change the data.

# Using a Structured Network Design Process



- ❧ A focus is placed on understanding the location and needs of user communities that access or change data and processes.
- ❧ A logical model is developed before the physical model. The logical model represents the basic building blocks, divided by function, and the structure of the system. The physical model represents devices and specific technologies and implementations.

# Systems Development Life Cycles

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## ☞ Analyze requirements

In this phase, the network analyst interviews users and technical personnel to gain an understanding of the business and technical goals for a new or enhanced system. The task of characterizing the existing network, including the logical and physical topology and network performance, follows. The last step in this phase is to analyze current and future network traffic, including traffic flow and load, protocol behavior, and quality of service (QoS) requirements.

# Systems Development Life Cycles

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## ∞ Develop the logical design

This phase deals with a logical topology for the new or enhanced network, network layer addressing, naming, and switching and routing protocols. Logical design also includes security planning, network management design, and the initial investigation into which service providers can meet WAN and remote access requirements.

# Systems Development Life Cycles

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## ∞ Develop the physical design

During the physical design phase, specific technologies and products to realize the logical design are selected. Also, the investigation into service providers, which began during the logical design phase, must be completed during this phase.

# Systems Development Life Cycles

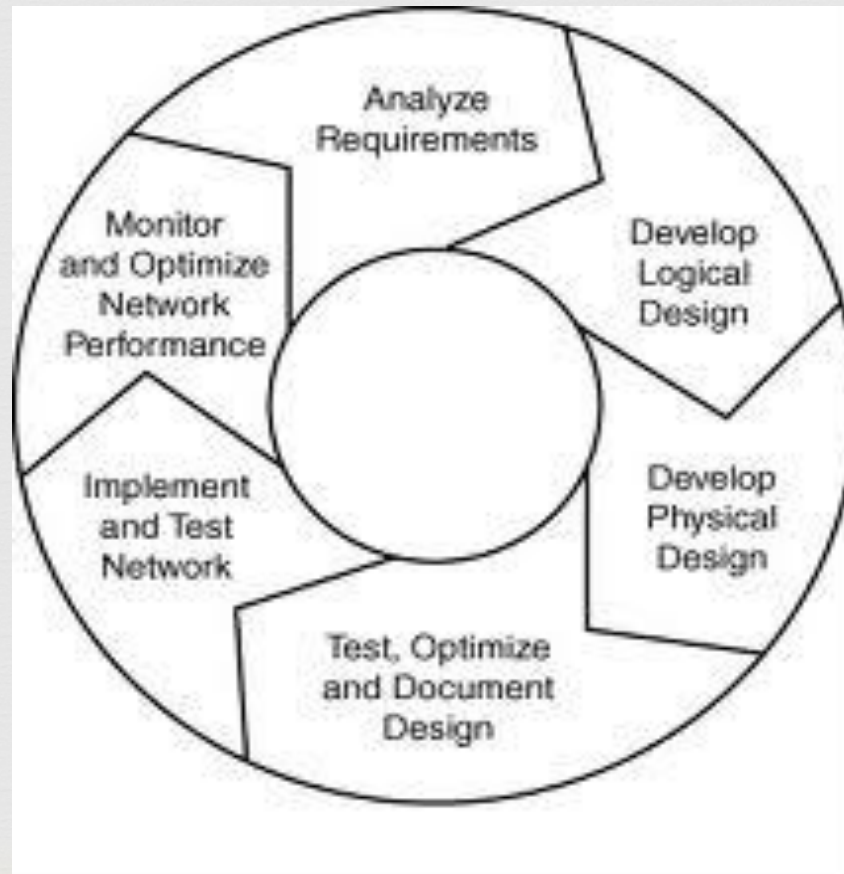
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## ☞ **Test, optimize, and document the design**

The final steps in top-down network design are to write and implement a test plan, build a prototype or pilot, optimize the network design, and document your work with a network design proposal.

# Network Design and Implementation Cycle



# The Plan Design Implement Operate Optimize (PDIOO) Network Life Cycle



## ∞ Plan

Network requirements are identified in this phase. This phase also includes an analysis of areas where the network will be installed and an identification of users who will require network services.

## ∞ Design

In this phase, the network designers accomplish the bulk of the logical and physical design, according to requirements gathered during the plan phase.



# The Plan Design Implement Operate Optimize (PDIOO) Network Life Cycle



## ∞ Implement

After the design has been approved, implementation begins. The network is built according to the design specifications. Implementation also serves to verify the design.

## ∞ Operate

Operation is the final test of the effectiveness of the design. The network is monitored during this phase for performance problems and any faults, to provide input into the optimize phase of the network life cycle.

# The Plan Design Implement Operate Optimize (PDIOO) Network Life Cycle



## 🌀 Optimize

The optimize phase is based on proactive network management which identifies and resolves problems before network disruptions arise. The optimize phase may lead to a network redesign if too many problems arise due to design errors or as network performance degrades over time as actual use and capabilities diverge. Redesign may also be required when requirements change significantly.

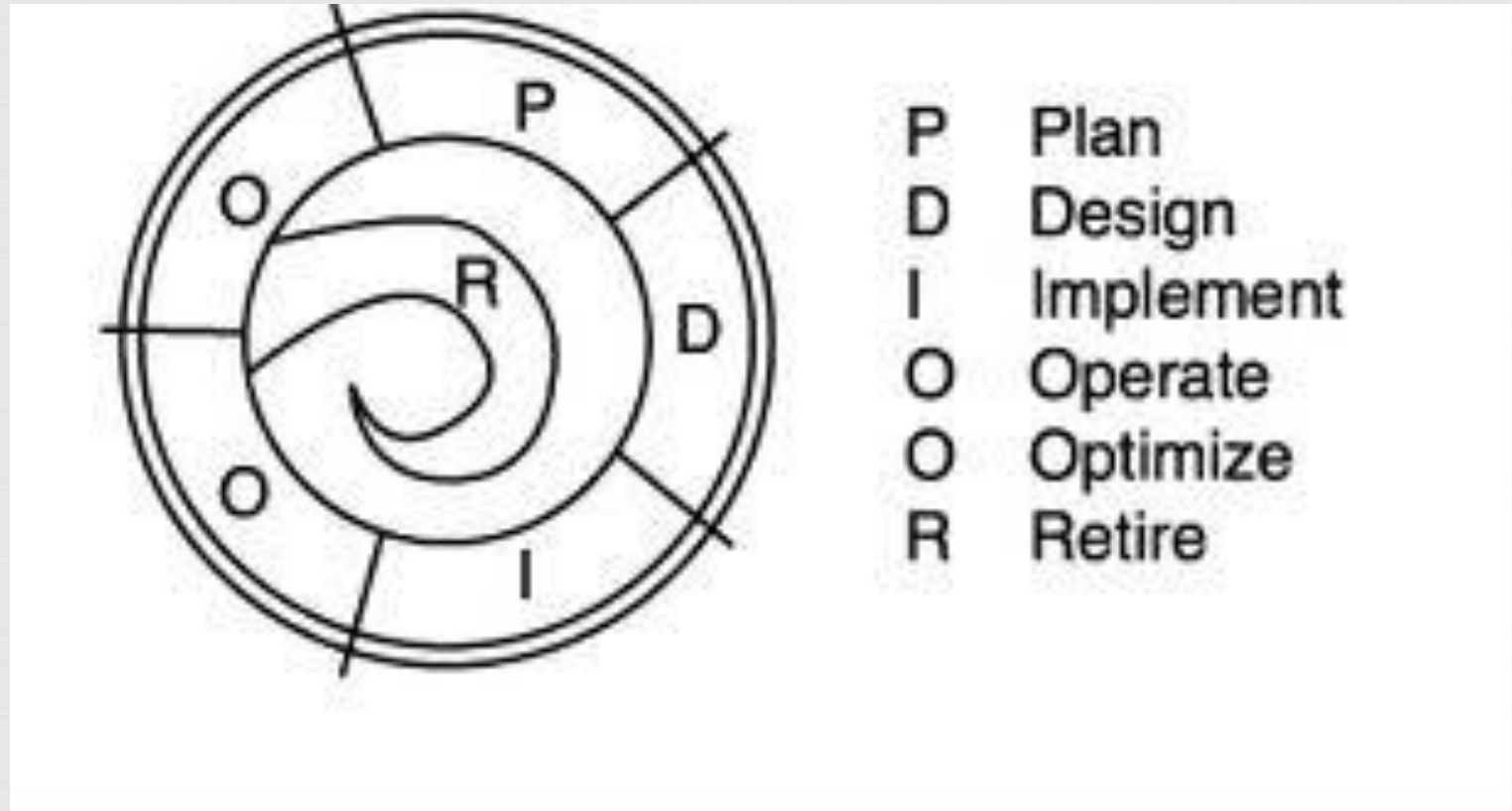
# The Plan Design Implement Operate Optimize (PDIOO) Network Life Cycle



## Retire

When the network, or a part of the network, is out-of-date, it may be taken out of production. Although Retire is not incorporated into the name of the life cycle (PDIOO), it is nonetheless an important phase.

# PDIOO Network Life Cycle



# Analyzing Business Goals



- ❧ Understanding the customer's business goal and constraints is a critical aspect of network design.
  - ❑ Working with client
    - Research your client business
    - What industry the client is in?
    - Market, supplier, products, services, competitive advantages
    - Ask them to explain the organizational structure of the company

# Analyzing Business Goals



- ❧ Ask your customer to state an overall goal of the network design project—Why is the customer embarking on this new network design project?
  - For what will the new network be used?
  - How will the new network help the customer be more successful in the customer's business?
- ❧ Ask your customer to help you understand the customer's criteria for success.
  - Change in enterprise networks

# Analyzing Business Goals



## ☞ Typical Network Design Business Goals:

- Increase revenue and profit
- Improve Corporate communications
- Shorten product-development cycles and increase employee productivity
- Build partnerships with other companies
- Expand into worldwide markets
- Move to a global-network business model
- Modernize out-dated technologies

# Analyzing Business Goals



- ❧ Reduce telecommunications and network costs, including overhead associated with separate networks for voice, data and video
- ❧ Expand the data readily available to all employees and field offices so they make better business decisions
- ❧ Improve security and reliability of mission-critical applications and data
- ❧ Offer better customer support
- ❧ Offer new customer services



# Analyzing Business Goals



## ☞ Identifying the scope of network design project

➤ When analyzing the scope of network design, we can refer to the seven layers of the OSI reference model to specify the type of functionality the new network design must address.

➤ The following terms to define of network and the scope of a network design project:

Segment

WAN

LAN

Enterprise Network

Building Network

Remote Access

Campus Network

# Analyzing Business Goals



- ❧ Identifying a Customer's Network Applications
  - The identification of your customer's applications should include both current applications and new applications.
  - Network Applications Table

# Network Applications Table



Name of Application	Type of Application	New Application (yes or No)	Criticality (1.extremely critical- 2.somewhat critical- 3.not critical)	Comments

# Analyzing Business Goals



## System applications table

System Applications	Needed (Yes or No)	Comments
User authentication and authorization		
Host Naming		
Remote Booting		
Remote configuration download		
Directory services		
Network Backup		
Network Management		
Software Distribution		

# Analyzing Business Constraints



## ☞ Politics and Policies

- Discuss with your customer any policies (religion) regarding protocols, standards, vendors.
- Discuss with your customer if there are any policies regarding distributed authority for network design and implementation.

# Analyzing Business Constraints



## ⌘ Budgetary and Staffing Constraints

- Your network must fit the customer's budget (equipment purchases, software licenses, maintenance, supporting agreements, testing, training, staffing, consulting fee (include your fee), outsourcing expense).
- Determine who controls the network budget
- Work with customer to develop a ROI analysis for the network design.

# Analyzing Business Constraints



## ☞ Scheduling

- When is the final due date ?
- What are the major milestones?
- In most case, management of the project schedule is the customer's obligation, not yours.
- During the technical-analysis stage and the logical - and physical design phases of the project, be sure to keep the schedule in mind.

# Business Goals Checklist



You can use the following checklist to determine if you have addressed your client's business oriented objectives and concerns:

- ❧ I have researched the customer's industry and competition.
- ❧ I understand the customer's corporate structure.
- ❧ I have compiled a list of the customer's business goals, starting with one overall business goal that explains the primary purpose of the network design project.
- ❧ The customer has identified any mission-critical operations.
- ❧ I understand the scope of the network design project.





Any Question???

See U Next Week!!