Conceptual Technology Design

Name Devashree Desai

Questions (100 points)

Learning Objectives (when completed the student will be able to…)

1. (40 points) Demonstrate an ability to estimate the technology lifecycle of a sample GIS operation.

2. (40 points) Demonstrate an ability to define a system interface and communication requirements for the Valle Caldera GIS by selecting one of the three basic system configurations.

3. (20 points) Demonstrate an ability to apply the technology lifecycle to the Valles Caldera GIS.

System Lifecycle Questions (40 points)

Scenario

You are a GIS manager for a small utility company. You will soon be receiving your first GIS hardware and software. Your GIS includes:

Four servers
Four workstations
Twenty desktops
Two laptops
Operating system and GIS software

You are preparing one- and three-year business plans and budgets. For the purpose of this exercise, assume that you have already installed your initial hardware and software (listed above), received very optimistic utility revenue projections, and you have initially decided that you want to have absolutely the most current technology.

Use the most recent estimates of technology lifecycles shown in the table to establish what you plan to replace in the next and subsequent budget years.

2001-2002 Estimates of Technology Lifecycles (Months)				
Technology	**Current**	**Useful**	**Obsolete**	**Non-functional**
Network Infrastructure Wide Area Networks*	24-36 12-24	37-84 25-60	85-120 61-84	120+ 84+
Computer • Server • Workstation • Desktop • Laptop	 12-18 6-12 6-12 6-12	 19-48 13-48 13-36 13-24	 49-72 49-72 37-60 25-48	 72+ 72+ 60+ 48+
Operating system software	18-36	37-60	61-72	72+
Vendor software	12-18	19-36	37-60	60+
Internet products (browsers, associated products)	9-12	13-24	25-36	36+
Data	Variable – depends on rate of decay of validity			
*Internet bandwidth increasing at 300% per year				

Step 1: Determine the first year budget request

Use the technology lifecycle table to determine what you should request in the first budget year (i.e., 0-12 months after initial installation).

Laptops, Desktops, Workstations and Internet products

Step 2: Identify map scale:

Use the technology lifecycle table to determine what you should request in the second budget year (i.e., 12-24 months after installation).

Server, Operating System Software, Vendor Software and Wide Area Networks

In the middle of the year the revenue projections have been significantly revised downwards and you will not be able to acquire current technology as you had planned.

What is the earliest you will now have to purchase hardware or software without letting your system become obsolete?

Between 1-4 years depending upon the item, referring to the “Useful” column in the table.

System Interface/Communication Requirements Questions (40 points)

Step 1: Determine the answer to the basic six questions regarding System Interface/Communication Requirements

Now that you have an understanding of issues related to interface and communication technologies, you must examine the best configuration for your organization's system. Much of the information used for determining your system interface and communication requirements is located in the information product descriptions (IPDs) and master input data list (MIDL).

To the best of your ability estimate (guess if you have to) the answers to the following questions regarding the Valles Caldera GIS operations. (Yes you could call or e-mail them but this should only be done if it is coordinated among all of you and is not necessary). Remember, the answers are irrelevant except that they will be used for the second part – that of actually selecting the Interface/Communication Requirements.

1. What external databases, if any, are planned for use within the system and what format are they in? What records need to be accessed, how frequently, how quickly?

2. What are the wait tolerances for the information products?

3. Where are the data located?

4. Where are the data handling locations and what is the data handling load at these locations?

5. What is the current network configuration?

6. What data volume has to be transmitted, and why?

Now, given the answers (real or made up) above, select one of the three network systems we studied in class and provide a short paragraph defending your selection.

Technology Lifecycle in Valles Caldera Question (20 points)

Take a look at the first question above and estimate what you would "think" is the actual system that exists at the Valles Caldera (yes, I know this is a bit of a stretch), with regard to the following.

# of servers
# of workstations
# of desktops
# of laptops
Operating system and GIS software

Give your estimates below:

# of servers ____4_____

# of workstations __4_____

# of desktops _____20_____

# of laptops _____2_____

Operating system and GIS software
_____

Now, using the numbers you have placed in the blanks above repeat the system you did above for the following steps..

Step 1: Determine the first year budget request

Use the technology lifecycle table to determine what you should request in the first budget year (i.e., 0-12 months after initial installation).

Laptops, Desktops, Workstations and Internet products

Use the technology lifecycle table to determine what you should request in the second budget year (i.e., 12-24 months after installation).

Server, Operating System Software, Vendor Software and Wide Area Networks

Methods:

Compile your results using this document. Rename the document and call id "my_name_lab_6." Return the assignment via the assignment tool.

GRADING:

Assignment Output: Very good post (insightful) = 100 points, Good post (complete but not insightful) = 85 points, Poor Post (incomplete and/or irrelevant, or just poorly thought out) = 70 points. No Post = 0 points.