Computing the RoI of an IT Investment

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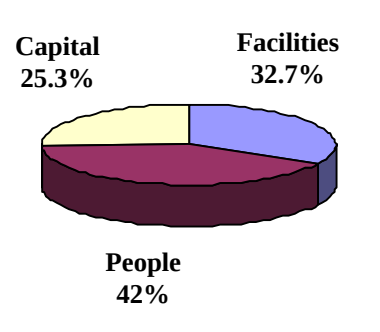
Cost of Components of a WAN

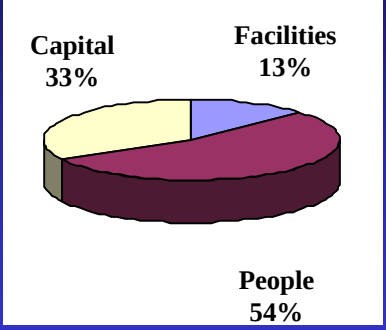
Cost Areas	Sample Components & Functions
Capital Equipment	Nodal Processors, Routers, Multiplexors, FRADs, Network Management Hardware & Software
People	Network Design, Technology Evaluation, Help Desk, Operational Support, Installation
Facilities	Transmission, Floor Space, Power, Air Conditioning

The Cost of Network Ownership

Cost of WAN Ownership



Cost of LAN Ownership



Source: Strategic Networks

RoI Analysis Disclaimer #1

- Any discussion of RoI analysis is intended to create a framework that can be modified for use in a particular company.
- It is not possible to be unduly prescriptive as to RoI analysis as the decision making process is different in different companies.

Approach to Computing an RoI

- Consider primarily hard savings – by that is meant a reduction in the money that will leave the company as a result of the change you want to implement. Example, the money spent with service providers for transmission services.
- Suggestion: If there is a strong RoI for a project based on hard savings, mention soft savings or other benefits as a "nice to have"

Approach to Computing an RoI

- If you believe that you need the soft savings or other benefits to get management approval – there is a question to be answered: "Who can speak to the value of those benefits?"
- Benefit: Makes the NOC personnel more efficient – the value of that has to be argued by the person responsible for the NOC
- Benefit: Make it easier to extend the WAN to customers – the value of that has to be argued by someone such as the VP of Sales

Approach to Computing an RoI

- Analogously if the change to the WAN will cause some reduction in the benefits, you may well need to get the buy-in of the impacted manager.
- The NOC manager if it will make things more difficult for the staff of the NOC
- The VP of Sales if it will make it harder to extend the WAN to customers

Steps to Computing a Return on Investment (ROI)

- Establish the time frame
- Quantify the changing requirements over that time frame (i.e. WAN traffic will grow by 40% per year)
- Determine the total cost (transmission, hardware, people) of the present mode of operation (PMO) over that time frame

Steps to Computing an ROI

- Determine the viable alternatives
- Compute the total cost of each alternative
- Compute key financial metrics:
  - Payback period - time before the initial investment is recovered
  - ROI - what is the annual return over the study period of the initial investment

Conceptualizing RoI and Annualized Rate of Return

- One way to look at an RoI analysis is to assume that your company has some money that they could either invest in their IT infrastructure or put it in the bank and get a guaranteed rate of return.
- The question that we have to answer is which investment, the one in the IT infrastructure or the one in the bank, returns more hard currency to your company.

Conceptualizing RoI and Annualized Rate of Return

- Assume that your company has a million dollars to invest, and that the bank will give it a 10% annual return. If your company leaves its money in the bank for 3 years:
  - After year one, your company has $1,100,000
  - After year two, your company has $1,210,000
  - After year three, your company has $1,331,000
- Put another way, after three years, your company has $1,000,000 x (1.10) x (1.10) x (1.10) or a million dollars times 1.10 cubed.

Conceptualizing RoI and Annualized Rate of Return

- Working backwards, assume that you were told that your company invested $1,000,000 in the bank and got a fixed, annual rate of return from the bank for three years. You are also told that at the end of three years, your company had $1,331,000. How would you figure out the annual rate of return ("X") that the bank gave your company.
- $1,331,000 = $1,000,000 x (1 + X/100) cubed
- (1 + X/100) cubed = $1,331,000/$1,000,000
- (1 + X/100) = the cube root of (1.331)
- The cube root of 1.331 is 1.10
- X = 100 x (1.10 – 1)
- X = 10%

Conceptualizing RoI and Annualized Rate of Return

- What would the RoI be if you gave the bank $100 and after 3 years, they gave you back your deposit and an additional $100?
- $200 = $100*(1 + X/100) cubed
- (1 + X/100) cubed = 2
- 1 + X/100 = 1.26 (the cube root of 2)
- X/100 = 0.26
- The RoI is 26%

Same Example – But focused on an IT Investment

- An organization invests $1M in upgrading its WAN infrastructure
- After three years, the organization has managed to recoup the $1M investment and save an additional $1M. This is a Total Return of $2M.
- The cube root of (2/1) is 1.26
- (1.26 – 1) times 100 yields a RoI of 26%

Annualized Return

- If the investment is made for “n” years, then the steps to computing the Annualized Return are:
  - Take the Ratio of the Total Return to the Investment. “Total Return” refers to what part of the investment the organization gets back, plus what additional savings it enjoys.
  - Take the “n-th root” of this Ratio
  - Subtract 1.0 from this
  - Multiply the result by 100

RoI Analysis Disclaimer #2

- The following RoI analysis is intentionally simple. The motivation is to focus on the format of doing an RoI analysis, not to prescribe each line element
- Each line item (transmission, people, hardware) can and should be expanded – most likely into a spreadsheet of its own.

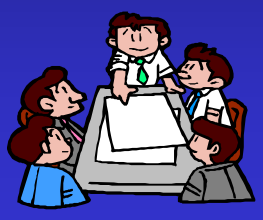
Return on Investment (ROI)

Present Mode of Operation (PMO)

	Year 1	*Year 2*	*Year 3*
Transmission	$1,000,000	$1,100,000	$1,250,000
People	$200,000	$200,000	$250,000
Hardware	$0	$0	$0
Yearly Totals	$1,200,000	$1,300,000	$1,500,000
Cumulative Totals	$1,200,000	$2,500,000	$4,000,000

Example of Expanding the Preceding Spreadsheet

- The “People” line on the preceding spreadsheet could be linked to a spreadsheet where that line is comprised of:
  - Project Management
  - Operations
  - Design and Engineering
  - Training
  - Management
  - etc.



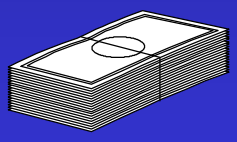
Return On Investment (ROI)

Alternative 1

	Year 1	*Year 2*	*Year 3*
Transmission	$750,000	$775,000	$825,000
People	$200,000	$200,000	$250,000
Hardware	$500,000	$0	$0
Yearly Totals	$1,450,000	$975,000	$1,075,000
Cumulative Totals	$1,450,000	$2,425,000	$3,500,000

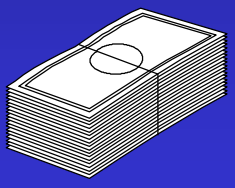
Return On Investment (ROI)

- If the company implements Alternative 1, they make an up front investment of $500K.
- However, the total cost of Alternative 1 (including the initial investment of $500K of hardware) is $500K less than the PMO.
- Hence, the company doubled their money in three years!



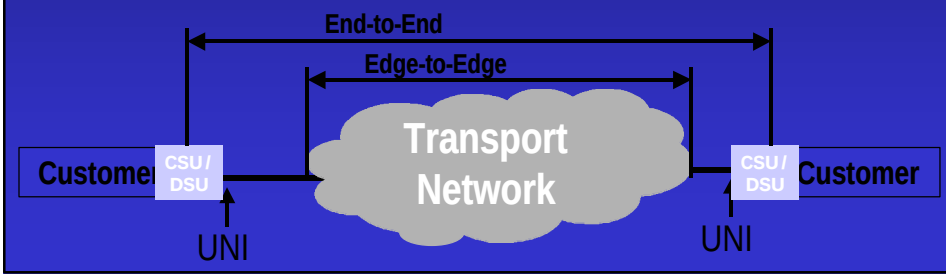
ROI Analysis

- Payback Period
  - Less than 2 years; i.e., $2.425M vs. $2.5M
- ROI = 26%
  - Savings = $4.0M - $3.5M = $500K
  - Investment = $500K
  - Total Return (Investment + Savings) = $1,000,000
  - Cube root of ($1,000,000/$500,000) = 1.26
  - Annualized Return = 26%



Using Enhanced CSU/DSUs for Traffic Metrics

- Ensures appropriate PVC sizing
- Enhances diagnostic Capabilities
- Either part of service or separate
- Pays for itself within a few months



Computing the RoI of Deploying Enhanced CSU/DSUs

- The current Frame Relay network is comprised of:
  - 384 Kbps ports
  - Symmetric 384 Kbps PVCs between sites
- For a pair or sites, this costs $3,764/month
- Assume that based on the monitoring that can be done based on the enhanced CSU/DSUs, that the PVCs are changed to be asymmetrical and running at 320/128 Kbps
- For a pair of sites, this costs $2,859/month

Computing the RoI of Deploying Enhanced CSU/DSUs

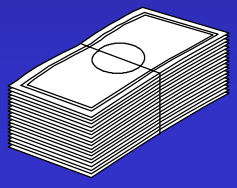
- The monthly savings for the PVCs between just two sites is $905
- Assuming that it cost $6K for both the monitoring and the enhanced CSU/DSUs, the payback period is 7 months
- Payback period = ($6,000)/$905/month = 6.6 months

Computing the RoI of Deploying Enhanced CSU/DSUs

- Over 3 years the old network between 2 sites would have cost $135,504
- The newly configured network would cost $108,924 for the three years. This includes the $6K for monitoring and the CSU/DSUs.
- To stay with the banking example, this is as if the company invested $6K in the bank. At the end of three years, they got their money back and an additional $26,580 ($135,504 - $108,924)

Computing the RoI of Deploying Enhanced CSU/DSUs

- Hence, this investment yields a net savings of $26,580 and a Total Return of $32,580
- $32,580/$6000 = 5.43
- The cube root of 5.43 is 1.76
- Hence, the RoI of this project is 76%




Thank You!