



Benefits Analysis of Proactive Support Services

By Mack M. Coulibaly, Director of Technical Services, Cisco Systems, Inc

The nature of support services is undergoing a major transformation. It is departing from the transactional break-fix model to an interactive process of preventing incidents that impact businesses. The new model focuses on proactive support interactions. The implications of this evolution are huge. For one thing, it is difficult to demonstrate the return on investment of services in an environment where the value of the service is to avoid disruption. It is much easier to value the effect of an incident (via the ensuing support) than it is to value its absence.

In July 2006, I wrote an article exclusive to the SSPA News titled: **“Improve Customer Experience”** in which I introduced the concept of ‘Disruption’ as the unit of impact of an incident on an operational environment. In the current article, I will show how to use the measures of Network Disruption to create a relative cost benefit analysis.

Built on the Design, Deliver, Operate & Optimize (DDO) framework, the analysis provides the basis for expenditures that reduce network disruptions and increase network capability.¹

Business Climate

As the network becomes the platform for business operations, it must meet acceptable and pre-established service levels in order to guarantee business continuity and customer satisfaction. This must be done while maintaining a low cost of ownership in order to achieve a reasonable ROI on infrastructure investment. Unfortunately, one fact of life is that hardware will fail; software will have bugs, and networks will experience issues from time to time. In order to alleviate the disruptions caused by this reality, we need to create proactive support services portfolios that are designed to provide measurable and predictable operational performance by reducing network disruptions and increasing network capability. Only then, can we expect to maximize the benefits of a network built to be the platform for business operations.

Measurement Methodology

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$$\text{Disruption} = f \left(\text{Log (Nx)} \quad \text{Time to Resolution} \quad \text{Escalation} \quad \text{Bug} \quad \text{Outage} \quad \text{Severity} \right)$$

Figure A: Computation of Disruption as a unit of incident impact

(1) Network 'Capability' is inversely proportional to network disruption. It is a relative measure of the operational capability of the network. Increase Capability can be evidence of effectiveness of service assurance. Similar to Availability, Capability is measured in number of nines.

Today, "Disruption" is used for comparison across products, networks, customers and vertical segments. Correlated to standard monetization parameters, "Disruption" enables computation of cost benefits analysis associated with products, support and services portfolio. To illustrate this point, I used the following example of a fictional company: Acme, Inc.

Example Customer Scenario: Acme, Inc. (fictional name and a fictional company. Any similarity is purely coincidental).

Acme, Inc: Business Operations

Acme, Inc. is a diversified global financial services holding company whose businesses provide a broad range of financial services to consumer and corporate customers. The Company has over 100 million customer accounts in over 100 countries and territories. The Company's activities deliver a wide array of banking, lending, and investment services, including traditional banking.

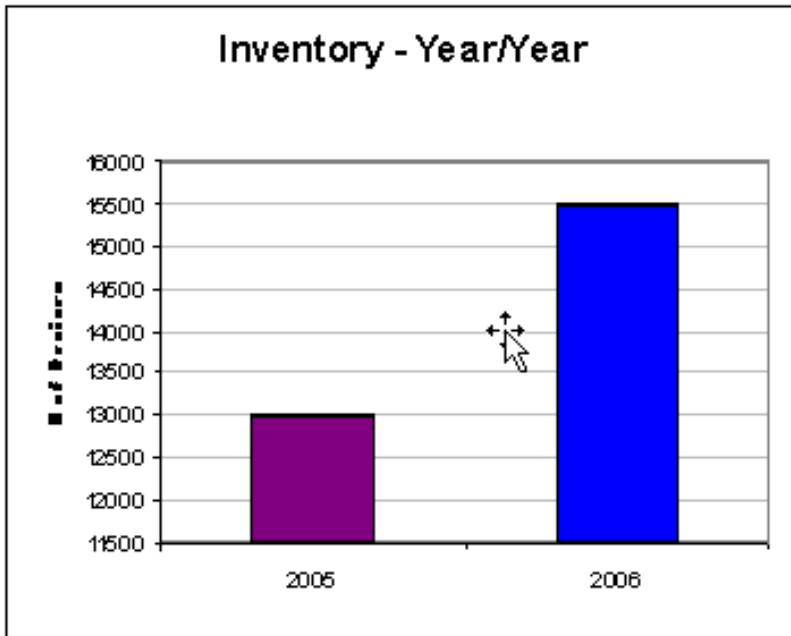
Acme, Inc: Network Assets

Acme, Inc, information technology infrastructure is composed of 70% Cisco products serviced through various channels including partners. As of July 2005, the total number of Cisco hardware products in Acme, Inc global networks amounted to about 13,000 devices. By July 2006, that number was approximately 15,500 (an increase of 19%).

Table 1-1: Network Composition for 2005 and 2006

Acme, Inc.	Network Device Count
Numbers in 2005	13,000
Numbers in 2006	15,500
Y/Y Percent Increase	19%

Graph 1-1: Network Composition for 2005 and 2006



Acme, Inc: Network Services & Support

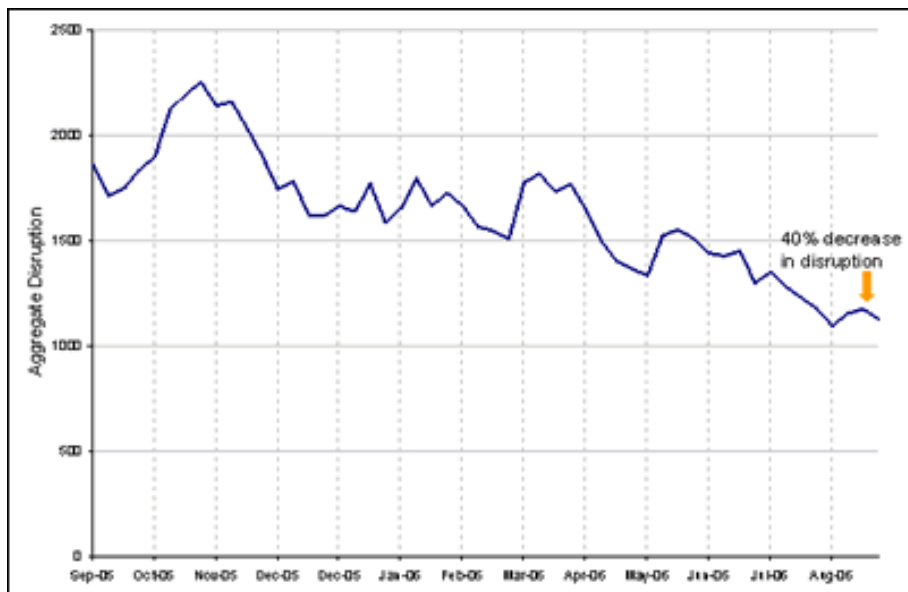
Let's assume that Acme, Inc networks are globally covered by Cisco support and services contracts which offer Advanced Services Network Optimization and by High Touch Technical Services (HTTS) in addition to other proactive network services. The cost of these services to Acme, Inc is summarized in table 1-2 below.

Table 1-2: Summary of Services Costs and Device Count

Fiscal Year	Device Count	Support Service	Cost of service support per device
2005	13,000	\$8,500,000	\$650
2006	15,500	\$9,700,000	\$625
Percent Increase	19%	14%	-4%

Acme, Inc: Network Disruption Profile

Figure 1-1: Year/Year View - Aggregate Network Disruption



Using 'Disruption' as the benchmark for measurement, Acme's global network infrastructure clearly shows a 40% year over year reduction in network disruption.

With all other things being equal, we could attribute the reduction of network disruption to the effectiveness of the proactive support services. The combined impact of these services is further evidenced by the drop in the average Disruption per service incident (figure 2-1) and the Disruption induced by each device (Figure 2-2). They show:

1. Disruptive impact of each network incident has been reduced
2. Disruption caused by each device has been reduced
3. Lastly and as a result we see an increased in network capability

Figure 2-1: Disruption per Service Incident

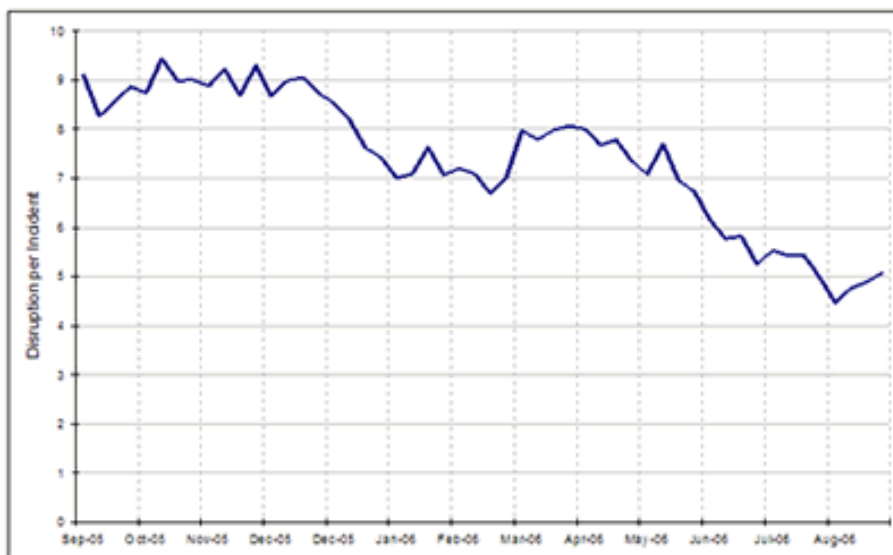


Figure 2-2: Disruption per Device

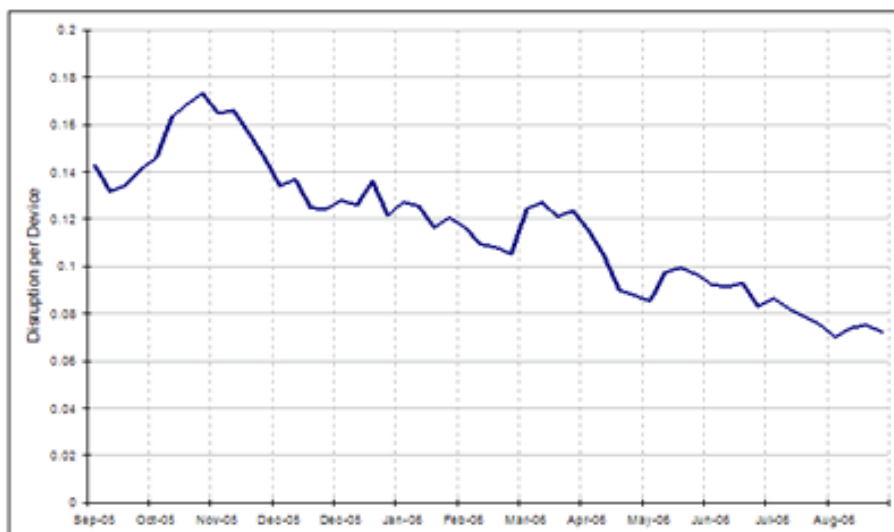
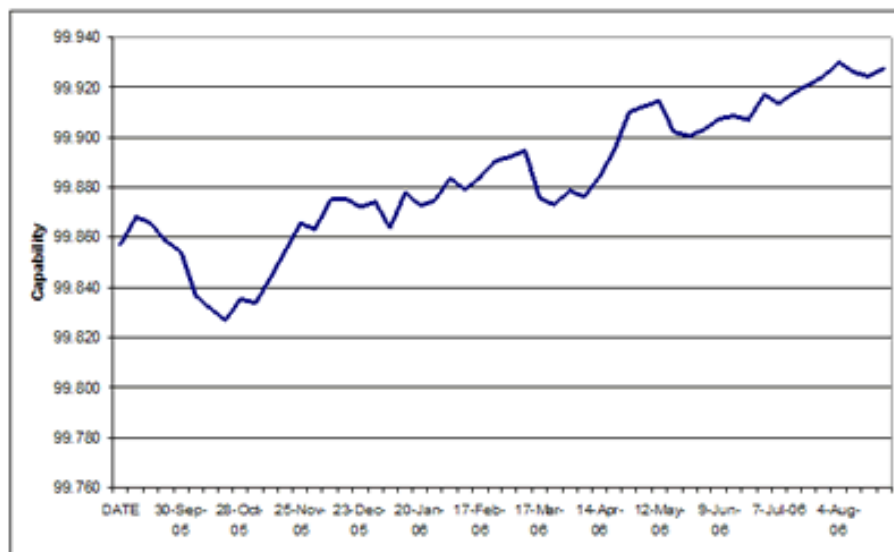


Figure 2-3: Network Capability



Benefits of Proactive Support Services

Although the device count for our fictional company, Acme, Inc., went up by 19%, the total Disruption to its business operations went down by 40%. Hence, the capability of the network has improved from 2 nines to well above 3 nines (see figure 2-3). Using Disruption as the basis for measurement, one can provide evidence that proactive support services -- which relies heavily on interactions with the customers -- creates great benefits to the overall business' bottom line. The interactions consist mainly of a consultancy role in which the provider helps the customer design, implement and operate his network in a way that prevents or minimizes disruptions to business operations.

Acme, Inc: Financial Impact of Proactive Services (ROI Analysis)

One unmistakable event that disrupts business operations is network

downtime. Network outages are costly to businesses. "The average financial institution experiences 1,180 hours of downtime per year, costing 16 per cent of annual revenue, or \$222m. Manufacturers are losing an average of nine per cent of their annual revenue" (Infonetics Research, 2005)

In 2000, InternetWeek published table 3-1 below summarizing the cost of one hour of network downtime.

Table 3-1: Infonetic Research Cost of Network Downtime

Brokerage operations	\$6,450,000
Credit card authorization	\$2,600,000
Ebay	\$225,000
Amazon.com	\$180,000
Package shipping services	\$150,000
Home shopping channel	\$113,000
Catalog sales center	\$90,000
Airline reservation center	\$89,000
Cellular service activation	\$41,000
On-line network fees	\$25,000
ATM service fees	\$14,000
<i>Cost of one hour of downtime. From InternetWeek 4/3/2000 and Fibre Channel: A Comprehensive Introduction, R. Kembel 2000, p.8. "...based on a survey done by Contingency Planning Research."</i>	

Regardless of the rigor put into estimating these numbers, the real cost of network downtime will be somewhat elusive. What is certain is that network downtime has tangible and intangible costs to businesses. That is why a Gartner Group study of downtime analysis recommends associating cost of network downtime with the following five areas:

1. Revenue: Direct lost, loss of future revenues
2. Productivity: Number of employees impacted
3. Damaged Reputation
4. Financial Performance: Revenue recognition
5. Other: Overtime, litigation, other related expenses

Similarly, the computation of Disruption establishes the following relationship: 23 Units of Disruption are equivalent (in impact) to 1 hour of network downtime.

Using the Disruption to network downtime relationship, one can convert Disruption to equivalent network downtime and hence assign a relative monetary value to the lessening of network induced business disruptions.

Table 4-1: Acme, Inc. Cost Benefit Analysis of reduction in Disruption

Total Invested in Consultancy Service in 2005	\$9,700,000
Cost of new hardware and other remediation suggested by proactive service	\$25,000,000
Total Cost (Service + Related Cost) for 2005	\$34,700,000
Benefits Gained in 2006 (compared to 2005)	
Reduction in Disruption (D) (avg Monthly)	800
Disruption (D) equivalent to 1 Hour of Downtime	23
Hours of Network Downtime Avoided per Year (all businesses)	417
Cost of one hour of network Downtime for Acme, Inc.'s businesses	\$400,000
Yearly Dollar Value of Reduction in Disruption	\$166,956,521
Return on Investment (ROI)	381%

Conclusion

Companies, especially enterprise customers, are challenged to justify the values of the cost of the support service contracts. Quantitative analysis lead management on both sides to an empirical decision making process supported by the evidence of cost benefits. Leveraging Disruption as the unit of impact of incidents, we are able to set joint performance metrics that can be used to measure performance. Moreover, such measurements foster periodic review of “how am I doing, and how can I improve?” interactions with the customer.

As the network becomes the platform for businesses, customers are looking to buy solutions that include both products and proactive support services. For providers to meet these expectations, they need to develop not only new services model but also new sets of tools, methodologies and systems that enable proactive engagement and predictive performance setting. This creates a partnership that is both profitable and palatable to customers.

1. Network ‘Capability’ is inversely proportional to network disruption. It is a relative measure of the operational capability of the network. Increase Capability can be evidence of effectiveness of service assurance. Similar to Availability, Capability is measured in number of nines.

About Mack M. Coulibaly.....

Mack M. Coulibaly is Director of Technical Services at Cisco Systems, Inc. He is an innovator and a published author with more than 16 years of experience in various technical fields ranging from telecom research, software development, hardware design, network engineering, technical services and support. In 2000, he published the book titled Cisco IOS Software Releases: The Complete Reference. He also wrote several white papers including the widely distributed Cisco IOS Reference Guide.

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