



Analyzing the Business Benefits of Fujitsu Managed Network Solutions



TABLE OF CONTENTS

The Benefits of Fujitsu Managed Network Solutions	3
The Business Cases for Fujitsu Managed Network Solutions.....	4
The Business Case for Large Service Providers	6
The Business Case for Small Service Providers.....	8
The Business Cases for Large and Small Enterprises.....	10
Summary	14

Networks have become one of a business' most important strategic and tactical assets. Without a highly responsive, highly reliable network, many companies cannot survive in an increasingly challenging economic climate. In addition, a greater volume of business is being done online, and business processes are increasingly network-dependent. This holds true for large and small enterprises, as well as large and small service providers. By outsourcing network management to Fujitsu Managed Network Solutions, enterprises and service providers can improve network reliability, responsiveness, uptime, and security. They can also exceed network performance goals, increase customer satisfaction, and decrease costs.

Fujitsu collaborated with an independent research organization that specializes in return on investment (ROI) and cost-benefit analysis to analyze these business benefits more closely. It collaborated with this organization to perform an objective study of the financial returns generated by the use of Fujitsu Managed Network Solutions by large and small service providers and enterprises. This white paper details the benefits of Fujitsu Managed Network Solutions, and provides an in-depth financial analysis of the service benefits.

The Benefits of Fujitsu Managed Network Solutions

Network management has become increasingly difficult as networks become larger and more complex, with more network elements performing more sophisticated, high-demand tasks. Properly managing the network has become just as important as the capabilities of the network itself. Because of the increasing complexity of networks and the applications that run on top of them, network management has become a highly technical and specialized skill, requiring substantial amounts of time and money to hire, train, and pay appropriately skilled staff. This costs businesses more than just money—it also diverts important resources and attention from the core goals of providing products and services to their customers.

Fujitsu Managed Network Solutions can meet network operations requirements, delivering quick return on investment for enterprises and service providers, enabling them to focus on their core businesses. A Fujitsu Managed Network Solution reduces costs, improves uptime and reliability, and ensures that a company's network is operating properly 24 hours a day, seven days a week, 365 days a year. By using the reliable Fujitsu Network Operations Center (NOC) facility to serve as either a primary or supplementary network operations resource, companies can allocate resources more effectively and cut costs without sacrificing network stability or endangering revenue-based services.

The Fujitsu NOC provides full network and monitoring services, including fault and performance management, configuration and circuit resource management, inventory management, data communications network management for NOC-managed networks, and third-party management. Businesses can fully outsource their network monitoring to Fujitsu, or use Fujitsu for off-hours management.

The Fujitsu NOC deploys a completely redundant network with servers, applications, and circuit connections in a world-class, 5,800 square-foot NOC facility in Richardson, Texas. It provides the highest possible security and availability by using federated domains, hot-swap redundancy, geographically dispersed backup operations, and four-layer security. This primary facility is backed up by a secondary location in Sunnyvale, California. All monitoring and troubleshooting are operational 7x24x365 by highly trained and experienced network operations engineers.

Using Fujitsu Managed Network Solutions, enterprises and service providers can gain these primary benefits:

- **Reduced cost.** To manage a network properly, an enterprise or service provider needs to run two or three shifts of highly qualified staff around the clock 365 days a year. In addition, companies also require expensive specialized systems to manage the network. In many cases, outsourcing part or all of network management to Fujitsu is more cost-effective than performing around-the-clock network management in-house.

- **Increased reliability, network stability, and uptime.** Fujitsu has deep and broad experience with network management, with a higher level of expertise and tools than are available to enterprises and service providers. Technicians are experts in the widest range of network hardware, and proactively monitor the network around-the-clock, making adjustments before outages can happen. All this means a more reliable, stable network with greater uptime.
- **Improved troubleshooting.** Fujitsu engineers and technicians have expertise in a wide variety of networks and configurations, drawing from a massive Fujitsu knowledgebase and experience as operations personnel at enterprises and service providers.
- **Business continuity and disaster recovery.** Fujitsu Managed Network Solutions offers a business continuity and disaster recovery option, which ensures that companies can continue to work in the event of emergencies or disasters. Options include setting up facilities and office space for companies in the event of a disaster.
- **Improved security.** Fujitsu uses a variety of advanced techniques, including dedicated service circuits and four-layer security, to ensure the highest possible level of security.
- **Faster time to market and reduced customer churn.** By outsourcing all or part of network management to Fujitsu, companies can focus on their core business rather than the demands of network management. They will also end up with a highly reliable network that can be used as a launch pad for launching new products and services quickly, and in doing so, gain new customers and better retain existing ones by building brand loyalty.

The Business Cases for Fujitsu Managed Network Solutions

In this white paper, we describe each type of customer organization as “small and large service providers” and “small and large enterprises,” enabling us to describe and examine financial details and assumptions with finer granularity.

For the purposes of this paper, a **large service provider** is defined as one that has a large number of EMS applications, uses multiple vendors and types of technologies, provides support 24 hours a day seven days a week, and has a large number of devices—250 or more. A **small service provider** also uses multiple vendors and types of technologies. It provides support during normal business hours, and has on-call support outside business hours. It has fewer EMS applications than a large service provider, and fewer than 250 devices.

A **large enterprise** is defined as one that uses a limited number of vendors, technologies, and EMS applications, provides support 24 hours a day seven days a week, and has 150 or more devices. A **small enterprise** is defined as one that uses a limited number of vendors, technologies, and EMS applications, provides support during normal business hours, and has on-call support outside business hours. A small enterprise also has fewer than 150 devices.

The business cases assume that the organizations own a certain number of optical transport devices, data devices, and ancillary devices that need to be managed. Each organization is assumed to own or be considering element and network management systems. These systems would be installed in a NOC facility constructed specifically for that purpose. Each NOC would be staffed by a certain number of level-1, level-2, and level-3 technicians who work in the NOC across either two or three shifts per day. They would perform MACDs (Move, Add, Change, Deletes) throughout the year in response to customer churn and new services.

A summary of each organizational type follows, along with financial details and assumptions.

	Service Provider (Large)	Service Provider (Small)	Enterprise (Large)	Enterprise (Small)
EQUIPMENT MANAGED				
Number of optical transport devices	250	20	150	20
Number of data devices	100	20	120	20
Number of ancillary devices	30	4	25	4
MANAGEMENT SYSTEM REQUIREMENTS				
EMS/NMS cost	\$21,179,349 over five years	\$12,653,600 over three years	\$394,485 over five years	\$278,460 over three years
NOC construction cost	\$275,000	\$275,000	\$275,000	\$275,000
MACDs per year	500	50	650	55
STAFF				
Number of Level 1 technicians	13	3	10	4
Number of Level 2 technicians	4	2	2	3
Number of Level 3 technicians	4	1	3	1
Shifts per day	3	2	3	2
Staffing cost	\$20,068,533 over five years	\$2,596,356 over three years	\$16,564,504 over five years	\$3,362,899 over three years

A detailed business analysis of the benefits of Fujitsu Managed Network Solutions reveals the following ROI highlights when each business type uses Fujitsu Managed Network Solutions rather than establishing and running its own NOC:

- A **large service provider** will realize a cumulative, projected \$35,531,842 in savings over five years, driven by eliminating the need to construct a NOC, avoiding maintaining a large operational staff, and reducing the need for network management systems. The service provider will see a five-year cumulative ROI of 695% with an immediate payback.
- A **small service provider** will realize a cumulative, projected \$2,856,029 in savings over three years, driven by eliminating the need to construct a NOC, avoiding maintaining an operational staff, and reducing the need for network management systems. The service provider will see a three-year cumulative ROI of 1067% with an immediate payback.
- A **large enterprise** will realize a cumulative, projected \$25,200,921 in savings over five years, driven by eliminating the need to construct a NOC, avoiding maintaining a large operational staff, and reducing the need for network management systems. The enterprise will see a five-year cumulative ROI of 691% with an immediate payback.
- A **small enterprise** will realize a cumulative, projected \$3,739,792 in savings over three years, driven by eliminating the need to construct a NOC, avoiding maintaining an operational staff, and reducing the need for network management systems. The enterprise will see a three-year cumulative ROI of 1376% with an immediate payback.

The Business Case for Large Service Providers

The landscape for large service providers has become increasingly competitive in recent years, as providers expand their services and deploy new technology that helps them keep up with the massive amount of bandwidth these new services require. Large service providers are challenged with adding these new services and technologies while trying to hold down or reduce costs, and still maintaining the highest possible level of service.

Large service providers are also starting to branch out of their primary service area—their “franchise” areas—and need to quickly launch new services in areas they previously had not covered. For example, a large corporation in a large service provider’s core area may expand to a new geographic region, and the service provider needs to offer services to the corporation in that area quickly, at the least possible cost, and with the highest level of service.

Expanding into new regions and providing a higher level of service at less cost is a daunting task for large service providers. Setting up a network operations center is a complex and expensive task; doing so quickly is even more difficult.

Fujitsu Managed Network Solutions dramatically speed the time it takes to launch new network services and expand existing ones, while reducing costs. Fujitsu has a nationwide presence, and can offer managed network services anywhere in the country, with immediate effect. Fujitsu has highly trained technicians with expertise in virtually all network technologies, so large service providers need not hire and train additional staff. The Fujitsu world-class NOC facility provides the highest possible security and availability by using federated domains, hot-swap redundancy, geographically dispersed backup operations, and four-layer security.

The Bottom Line for Large Service Providers Using Fujitsu Managed Network Solutions

By using Fujitsu Managed Network Solutions rather than establishing its own NOC, a large service provider will save a cumulative, projected \$35,531,842 over five years, driven by eliminating the need to construct a NOC, avoiding maintaining a large operational staff, and reducing the need for network management systems. A large service provider will see a five-year cumulative ROI of 695% with an immediate payback.

The business case assumes that a large service provider has between 200 and 250 optical transport devices, 100 pieces of data equipment, and approximately 30 ancillary devices. It is further assumed that the large service provider runs three shifts, and that approximately 500 MACDs are performed every year.

The greatest savings area for large service providers comes from a reduction in the need for network management systems, including element management systems, and associated costs. Because Fujitsu provides these systems and services, a large service provider can reduce its need for them, leading to projected, cumulative savings of \$21,179,349 over five years. A large service provider will also not have to construct a NOC, leading to savings of \$275,000.

The second-greatest savings area for large service providers is in staff costs. To staff a NOC for a large service provider would normally require 21 people: 13 level-1 technicians, four level-2 technicians, and four level-3 technicians. By using Fujitsu Managed Network Solutions rather than hiring, training, educating, and paying for salaries and benefits, a large service provider will avoid paying an estimated \$20,068,533 over five years.

In addition to these savings, a large service provider will see additional benefits, including potentially increased revenue as a result of quicker product and service launches, the ability to meet Service Level Agreements (SLAs) and provide additional services, and improved customer satisfaction. The business case outlined in this white paper does not include those potential savings.

The following charts provide in-depth financial details.

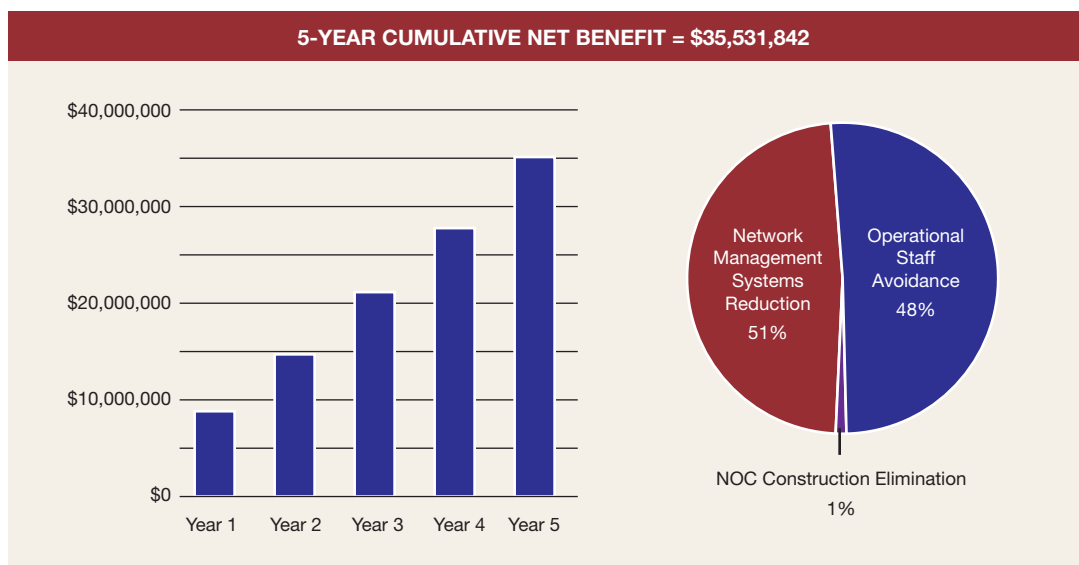
Large Service Provider

Benefits of Fujitsu vs. In-House	Year 1	Year 2	Year 3	Year 4	Year 5	Total
NOC Construction Elimination	\$275,000	\$0	\$0	\$0	\$0	\$275,000
Operational Staff Avoidance	\$3,780,000	\$3,893,400	\$4,010,202	\$4,130,508	\$4,254,423	\$20,068,533
Network Management Systems Reduction	\$5,764,500	\$3,321,450	\$3,653,595	\$4,018,955	\$4,420,850	\$21,179,349
Total Annual Benefits from Fujitsu	\$9,819,500	\$7,214,850	\$7,663,797	\$8,149,463	\$8,675,273	\$41,522,883

Fujitsu Investment	Initial Outlay	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Start-up and Connection Fees	\$140,180						\$140,180
Annual Fees		\$1,076,023	\$1,130,236	\$1,157,386	\$1,213,925	\$1,273,291	\$5,850,861
Total Fujitsu Investment	\$140,180	\$1,076,023	\$1,130,236	\$1,157,386	\$1,213,925	\$1,273,291	\$1,273,291

Net Savings	Year 1	Year 2	Year 3	Year 4	Year 5
Annual Net Savings (Benefits - Costs)	\$8,603,297	\$6,084,614	\$6,506,411	\$6,935,537	\$7,401,982
Cumulative Net Savings (Benefits - Costs)	\$8,603,297	\$14,687,911	\$21,194,323	\$28,129,860	\$35,531,842

ROI Measures						
Cost of Capital	6%					
Net Present Value	\$29,879,118					
Cumulative Net Present Value	\$7,976,138	\$13,391,423	\$18,854,331	\$24,347,927	\$29,879,118	
Cumulative Return on Investment	802%	726%	706%	698%	695%	
Payback (in months)	0.20					



The Business Case for Small Service Providers

Small service providers face a different set of challenges than do large service providers. There are some similarities, though: like large service providers, they struggle to keep up with changing technology, and need to provide increased services and bandwidth at reduced costs. And like large service providers, they have to maintain the highest possible level of services.

Typically, though, small service providers do not expand outside of their core service areas. Instead, they focus on a local area, and on providing high quality and high value in order to retain existing customers and attract new ones. They face significant threats from cable and telecom companies and other tier two and three service providers. Small service providers also typically have less technical expertise than do large service providers, and also typically cannot afford the same kind of high-end equipment as can large service providers.

As is the case with large service providers, Fujitsu Managed Network Solutions speed the time it takes to launch new network services and expand existing ones, in addition to reducing costs. With Fujitsu Managed Network Solutions, small service providers do not have to hire high-cost staff. And the Fujitsu world-class NOC facility provides the same high level of security, availability, and backup for small service providers as it does for large service providers.

The Bottom Line for Small Service Providers Using Fujitsu Managed Network Solutions

By using Fujitsu Managed Network Solutions rather than establishing and running its own NOC, a small service provider will realize a cumulative, projected \$2,856,029 in savings over three years, driven by eliminating the need to construct a NOC, avoiding maintaining an operational staff, and reducing the need for network management systems. A small service provider will see a three-year cumulative ROI of 1067% with an immediate payback.

The business case assumes that a small service provider has between 15 and 20 optical transport devices, between 15 and 20 pieces of data equipment, and four ancillary devices. It is further assumed that the small service provider runs two shifts, and that approximately 50 MACDs are performed every year.

The greatest savings area for small service providers is from reduced staffing costs. To staff a NOC for a small service provider would normally require six people: three level-1 technicians, two level-2 technicians, and one level-3 technician. By using Fujitsu Managed Network Solutions rather than hiring, training, educating, and paying salaries and benefits, a small service provider will save an estimated \$2,596,356 over three years.

The second greatest savings area for small service providers comes from a reduction in the need for network management systems, including element management systems, and associated costs. Because Fujitsu provides these systems and services, a small service provider can reduce its need for them, leading to a projected, cumulative savings of \$278,460 over three years. A small service provider will also not have to construct a NOC, leading to savings of \$275,000.

In addition to these savings, a small service provider will see additional benefits, including potentially increased revenue as a result of quicker product and service launches, the ability to meet Service Level Agreements (SLAs) and provide additional services, and improved customer satisfaction. The business case outlined in this white paper does not include those potential savings.

The following charts provide in-depth financial details.

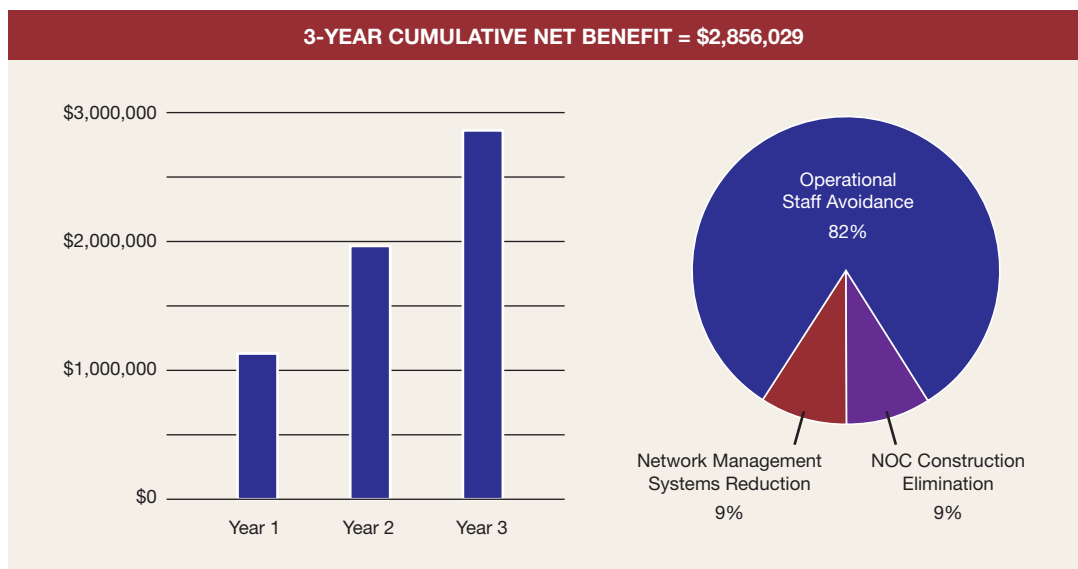
Small Service Provider

Benefits of Fujitsu vs. In-House	Year 1	Year 2	Year 3	Total
NOC Construction Elimination	\$275,000	\$0	\$0	\$275,000
Operational Staff Avoidance	\$840,000	\$865,200	\$891,156	\$2,596,356
Network Management Systems Reduction	\$126,000	\$72,600	\$79,860	\$278,460
Total Annual Benefits from Fujitsu	\$1,241,000	\$937,800	\$971,016	\$3,149,816

Fujitsu Investment	Initial Outlay	Year 1	Year 2	Year 3	Total
Start-up and Connection Fees	\$19,580				\$19,580
Annual Fees		\$93,318	\$95,125	\$85,764	\$274,207
Total Fujitsu Investment	\$19,580	\$93,318	\$95,125	\$85,764	\$293,787

Net Savings	Year 1	Year 2	Year 3
Annual Net Savings (Benefits - Costs)	\$1,128,102	\$842,675	\$885,252
Cumulative Net Savings (Benefits - Costs)	\$1,128,102	\$1,970,777	\$2,856,029

ROI Measures			
Cost of Capital	6%		
Net Present Value	\$2,537,920		
Cumulative Net Present Value	\$1,044,667	\$1,794,645	\$2,537,920
Cumulative Return on Investment	1088%	1043%	1067%
Payback (in months)	0.22		



The Business Cases for Large and Small Enterprises

The economic landscape for large and small enterprises has become increasingly challenging. Corporations need to be as nimble as possible to launch new products and services, provide the highest level of services, and do it while holding down or reducing costs.

The networks of large and small enterprises have become perhaps their most important business tool. Communications, network access, and being able to reliably run applications have all become critical to every aspect of a company's business.

Even though a network is a core tool for enterprises, many of them would prefer not to be distracted by running one. Doing so is outside their primary expertise, and having to manage a network or deal with its maintenance take important time and resources away from their primary business.

Fujitsu Managed Network Solutions provide significant benefits for enterprises. They can ensure the highest level of service, vital to large and small enterprises, because even short-term network outages or slowdowns have significant financial implications, potentially in the millions of dollars. Fujitsu Managed Network Solutions also ensure that all of a company's campuses, regardless of location, are connected at a high level of service. They can also reduce costs, and ensure that any new services or products reliant on the network can be launched quickly.

The Bottom Line for Large Enterprises Using Fujitsu Managed Network Solutions

By using Fujitsu Managed Network Solutions rather than establishing and running its own NOC, a large enterprise will realize a cumulative, projected \$25,200,921 in savings over five years, driven by eliminating the need to construct a NOC, avoiding maintaining a large operational staff, and reducing the need for network management systems. A large enterprise will see a five-year cumulative ROI of 691% with an immediate payback.

The business case assumes that a large enterprise has between 100 and 150 optical transport devices, between 100 and 120 pieces of data equipment, and 25 ancillary devices. It is further assumed that the large enterprise runs three shifts, and that approximately 650 MACDs are performed every year.

The greatest savings area for large enterprises is in staff costs. To staff a NOC for a large enterprise would normally require 15 people: 10 level-1 technicians, two level-2 technicians, and three level-3 technicians. By using Fujitsu Managed Network Services rather than hiring, training, educating, and paying salaries and benefits, a large enterprise will save an estimated \$16,564,504 over five years.

The second greatest savings area for large enterprises comes from a reduction in the need for network management systems, including element management systems, and associated costs. Because Fujitsu provides these systems and services, a large enterprise can reduce its need for them, leading to projected, cumulative savings of \$12,653,600 over five years. A large enterprise will eliminate the cost of constructing its own NOC, leading to additional savings of \$275,000.

In addition to these savings, a large enterprise will see indirect benefits, including potentially increased revenue as a result of quicker product and service launches and improved customer satisfaction. The business case outlined in this white paper does not include that potential indirect revenue.

The following charts provide in-depth financial details.

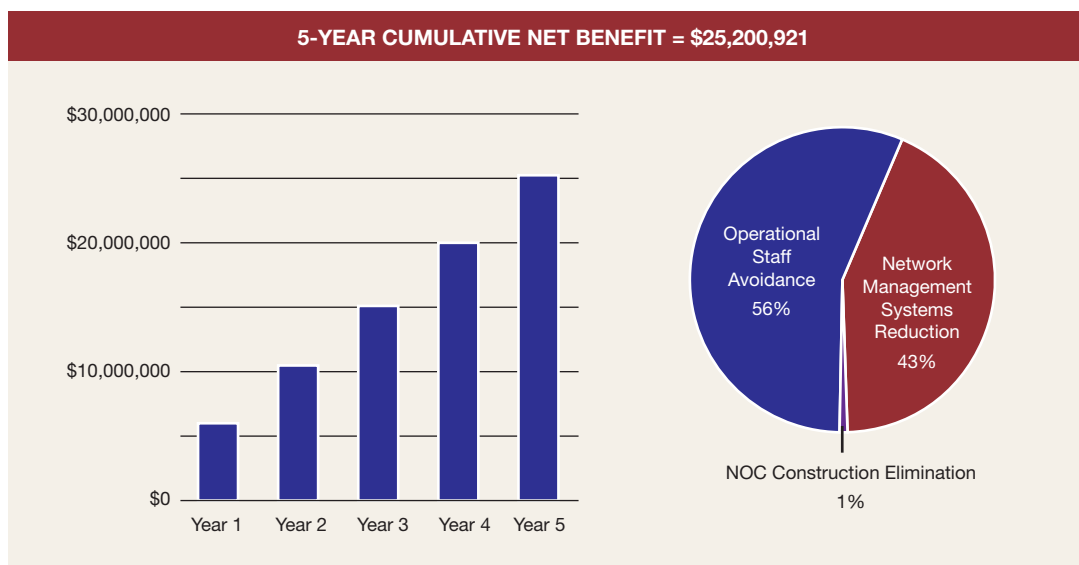
Large Enterprise

Benefits of Fujitsu vs. In-House	Year 1	Year 2	Year 3	Year 4	Year 5	Total
NOC Construction Elimination	\$275,000	\$0	\$0	\$0	\$0	\$275,000
Operational Staff Avoidance	\$3,120,000	\$3,213,600	\$3,310,008	\$3,409,308	\$3,511,587	\$16,564,504
Network Management Systems Reduction	\$3,444,000	\$1,984,400	\$2,182,840	\$2,401,124	\$2,641,236	\$12,653,600
Total Annual Benefits from Fujitsu	\$6,839,000	\$5,198,000	\$5,492,848	\$5,810,432	\$6,152,824	\$29,493,104

Fujitsu Investment	Initial Outlay	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Start-up and Connection Fees	\$18,580						\$18,580
Annual Fees		\$778,914	\$834,614	\$827,621	\$885,345	\$947,109	\$4,273,603
Total Fujitsu Investment	\$18,580	\$778,914	\$834,614	\$827,621	\$885,345	\$947,109	\$4,292,183

Net Savings	Year 1	Year 2	Year 3	Year 4	Year 5
Annual Net Savings (Benefits - Costs)	\$6,041,506	\$4,363,386	\$4,665,227	\$4,925,088	\$5,205,715
Cumulative Net Savings (Benefits - Costs)	\$6,041,506	\$10,404,892	\$15,070,119	\$19,995,206	\$25,200,921

ROI Measures						
Cost of Capital	6%					
Net Present Value	\$21,272,510					
Cumulative Net Present Value	\$5,680,954	\$9,564,352	\$13,481,366	\$17,382,497	\$21,272,510	
Cumulative Return on Investment	856%	740%	716%	702%	691%	
Payback (in months)	0.00					



The Bottom Line for Small Enterprises Using Fujitsu Managed Network Solutions

By using Fujitsu Managed Network Solutions rather than establishing and running its own NOC, a small enterprise will realize a cumulative \$3,739,792 in savings over three years, driven by eliminating the need to construct a NOC, avoiding maintaining an operational staff, and reducing the need for network management systems. A small enterprise will see a three-year cumulative ROI of 1376% with an immediate payback.

The business case assumes that a small enterprise has between 15 and 20 optical transport devices, between 15 and 20 pieces of data equipment, and four ancillary devices. It is further assumed that the small enterprise runs two shifts, and that approximately 55 MACDs are performed every year.

The greatest savings area for small enterprises is in staff costs. To staff a NOC for a small enterprise would normally require eight people: four level-1 technicians, three level-2 technicians, and one level-3 technician. By using the Fujitsu NOC rather than hiring, training, educating, and paying salaries and benefits, a small enterprise will save an estimated \$3,362,899 over three years.

The second greatest savings area for small enterprises comes from a reduction in the need for network management systems, including element management systems, and associated costs. Because Fujitsu provides these systems and services, a small enterprise can reduce its need for them, leading to projected, cumulative savings of \$394,485 over three years. A small enterprise will also eliminate the cost of constructing its own NOC, leading to savings of \$275,000.

In addition to these savings, a small enterprise will see indirect benefits, including potentially increased revenue as a result of quicker product and service launches and improved customer satisfaction. The business case outlined in this white paper does not include that potential indirect revenue.

The charts on the following page provide in-depth financial details.

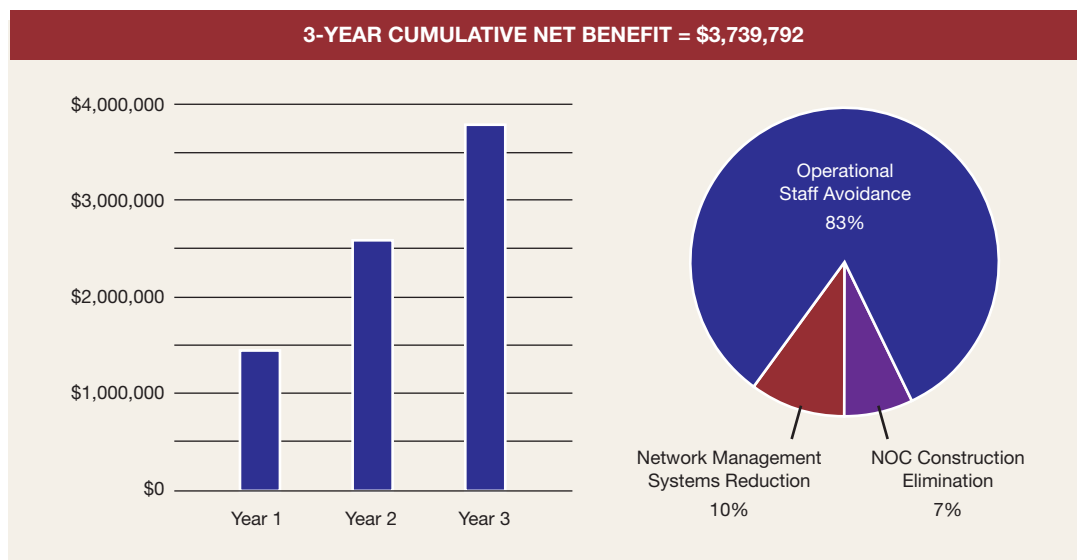
Small Enterprise

Benefits of Fujitsu vs. In-House	Year 1	Year 2	Year 3	Total
NOC Construction Elimination	\$275,000	\$0	\$0	\$275,000
Operational Staff Avoidance	\$1,088,000	\$1,120,640	\$1,154,259	\$3,362,899
Network Management Systems Reduction	\$178,500	\$102,850	\$113,135	\$394,485
Total Annual Benefits from Fujitsu	\$1,541,500	\$1,223,490	\$1,267,394	\$4,032,384

Fujitsu Investment	Initial Outlay	Year 1	Year 2	Year 3	Total
Start-up and Connection Fees	\$17,080				\$17,080
Annual Fees		\$88,116	\$90,669	\$96,727	\$275,512
Total Fujitsu Investment	\$17,080	\$88,116	\$90,669	\$96,727	\$292,592

Net Savings	Year 1	Year 2	Year 3
Annual Net Savings (Benefits - Costs)	\$1,436,304	\$1,132,821	\$1,170,668
Cumulative Net Savings (Benefits - Costs)	\$1,436,304	\$2,569,125	\$3,739,792

ROI Measures	
Cost of Capital	6%
Net Present Value	\$3,329,045
Cumulative Net Present Value	\$1,337,924 \$2,346,130 \$3,329,045
Cumulative Return on Investment	1451% 1406% 1376%
Payback (in months)	0.15



Summary

A detailed analysis of the benefits of using Fujitsu Managed Network Solutions reveals the following savings:

Organization	Cumulative Savings	Cumulative ROI	Savings Timeframe
Service Provider (Large)	\$35,531,842	695%	5 years
Service Provider (Small)	\$2,856,029	1067%	3 years
Enterprise (Large)	\$25,200,921	691%	5 years
Enterprise (Small)	\$3,739,792	1376%	3 years

In all cases, organizations gained savings by eliminating the need to construct a NOC, maintaining a smaller operational staff, and reducing the dependence on in-house network management systems. By outsourcing network management to Fujitsu Managed Network Solutions, enterprises and service providers can improve network reliability, responsiveness, uptime, and security; exceed network performance goals; increase customer satisfaction; and decrease costs.

In addition to these savings, an organization will see additional benefits, including potentially increased revenue as a result of new services that can be deployed quicker, as well as improved customer satisfaction.

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