

Career Portfolio

For

Rocky Rosas

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The following collection of documents represents a small sample of the accomplishments that I have accumulated over my career. Hopefully these samples will help to better establish my qualifications for the position that I am being considered for. I have organized the documents into three sections titled "Department Planning", "Staffing and Personnel Development", and "Performance, Processes, and Standards." In each of these sections you will find examples of my past work. The next few pages provide summaries of what you will find in each section. Thank you for taking a few extra moments to review the contents. I would welcome the opportunity to discuss any of these documents with you.

Section A

Departmental Planning

1) Systems Engineering – Network Excellence 2000 Presentation

This Northpoint Communications presentation was used for an internal and external introduction into the Systems Engineering organization. It contained the departmental mission statement, departmental roles and responsibilities, organizational chart, and year 2000 departmental goals

2) Systems Engineering – First 100 Days Presentation

After NetEdge Systems was acquired by Larscom, I took on the role of Applications Engineering Director with them. This presentation was used internally with Larscom management and the Sales organization to convey my plan for my first 100 days in the new position.

3) Operations Off-Site Presentation

This NetEdge Systems presentation was for an annual off-site planning meeting. I was managing the Technical Support organization at the time. The presentation laid out the upcoming year's challenges and new initiatives that were planned to address them. The major issues included Product Support, International Support, Trial & Demonstrations, Training, New Product Introduction, Product Planning, and Customer Care.

Section B

Staffing and Personnel Development

1) Systems Engineering Staffing Plan

Within my first 45 days on the job with NorthPoint Communications, I put together this Staffing Plan which served as the roadmap for a phased growth plan within the department. It included a definition of the support requirements, organizational models, job descriptions, skill set requirements, and the execution plan.

2) Systems Engineering Task Definition Guide

At NorthPoint Communications, I developed this document to describe the job of the Systems Engineer in more detail. The guide documented the roles and responsibilities of the individual field SE down to the task level. This guide helped to set expectations for the role of the Systems Engineer and was a very useful tool not only for the SE but also the entire Sales team.

3) Systems Engineering Development Plan

After 18 months with NorthPoint Communications, I conducted an internal analysis of the status of the department. This document describes our findings and focuses on subjects such as Systems Engineer moral, job satisfaction, career development, and employee retention. The document lays out the development areas and initiatives to address them.

4) SE MBO Pool for Q1 2000

At NorthPoint Communications the Systems Engineering compensation plan was based on both sales performance as well as Management Business Objectives (MBO). Each quarter the Systems Engineering management team created a pool of objectives. The Systems Engineering managers would then assign 5 of these objectives to individual Systems Engineers based on Regional goals and SE development needs. This document describes our MBO pool for the first quarter of 2000.

5) NPC Technology Transfer Meeting Agenda

At my positions with NetEdge, Larscom, and NorthPoint, I have initiated company wide technology training efforts. I have referred to these training programs as Technology Transfer Sessions. The focus of the Technology Transfer sessions was to train Systems Engineers as well as other company personnel in new technology, new company products, and vendor updates. We had these sessions three times per year. This was an agenda for one of those sessions.

Section C

Performance, Processes, and Standards

1) Systems Engineering Department Dashboard

At NorthPoint Communications I developed a set of Key Performance Indicators (KPI) for the department. We would report some of those KPI in a monthly produced Dashboard report. The dashboard was a one page monthly departmental status report of key initiatives, events, and news.

2) Meeting Minutes / Action Item Logs

During my career I have put a fair amount of emphasis on process definition, standardization, and common tool sets. This document is one example of a tool that was required for all Systems Engineers. It provided a means to manage meetings, document key takeaways, and track action items and commitments.

3) DS3 Assumption Process Release 1.0

This document is an example of the kind of process definition that I have put into place. I have found that clearly defined processes will help to establish the right expectations up front and also aid in closing the communications gap with customers and internal stakeholders.

4) NetEdge Systems / Nortel Channel Support Guidelines

While managing the Technical Support organization at NetEdge Systems, I put this document together as an appendix to every Channel Partner contract that we signed. The purpose was to detail the support processes for our partners and also to set expectations that we held for their performance as a Channel Partner.

5) Post Sales Account Management Program

At NorthPoint Communications I developed this plan for the Sales and Systems Engineering organizations to use in managing the post sales support component of the account. It was a program designed to report on Key Performance Indicators (KPI) of the post sales or technical support functions. The programs intent was to provide a regular forum to openly discuss the post sales support relationship, identify gaps, and use the KPI to show improvement. The program was really designed to mold the perception of customers about our support levels.

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open platform
performance dedicated partner
high speed connection

Systems Engineering



NorthPoint

Rocky Rosas

Director, Systems Engineering

Network Excellence 2000

2/16/00

Systems Engineering Mission

To help secure additional business through providing outstanding technical leadership for our partners, prospects, selling teams, and peers.



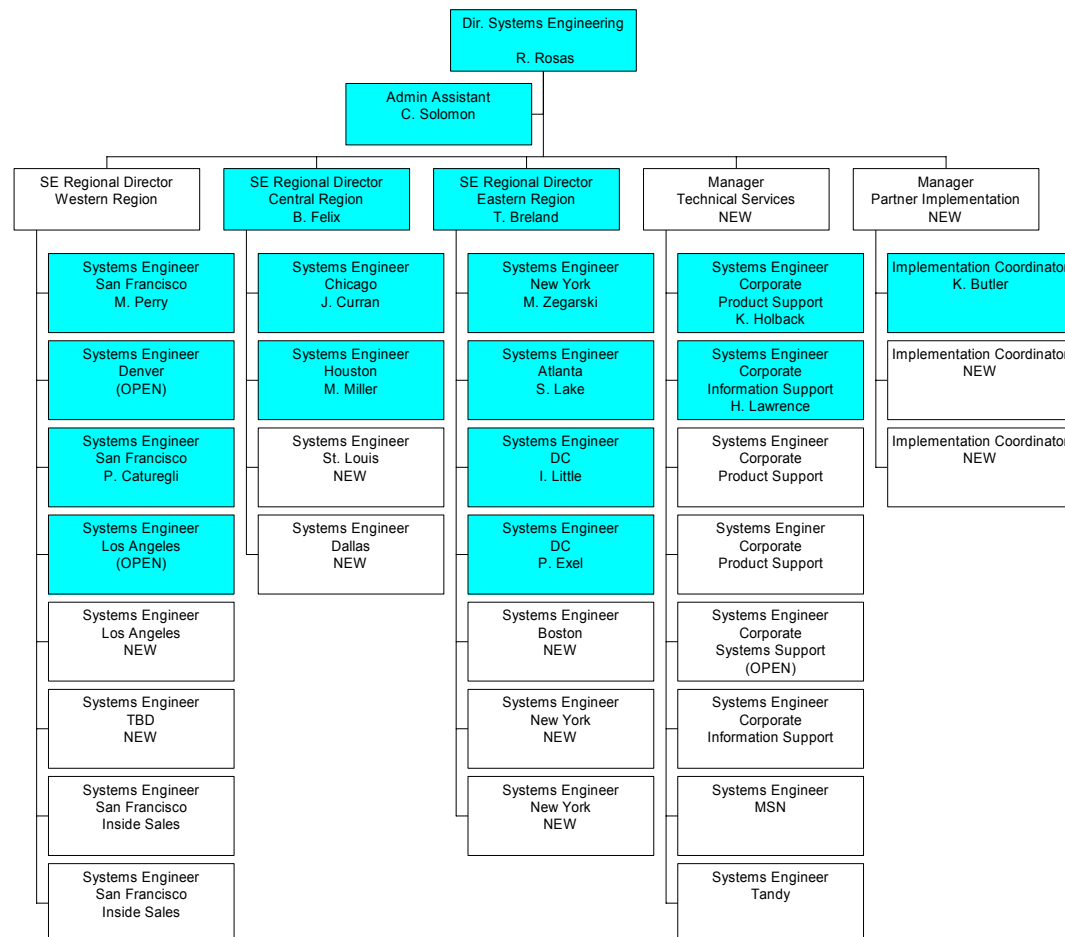
Systems Engineering Role

- Own and Manage the Technical Relationship w/ Partners
- Act as the conduit to core Development Organizations
- Customer Advocate to Product Management & the Product Development Process
- Facilitate New Product Rollouts to Partners
- Manage DS3 Partner Interconnection Process for Partners
- Technical Training & Education of Partners & Sales Team
- Selling of NorthPoint Products & Services



Y2K Organization Plans

Systems Engineering Organization



Confidential



Y2K Goals

- Decrease Partner Launch Interval
 - Accelerate Revenues
 - Remove Interconnections as a Competitive Disadvantage
 - Optimize Partner Market Expansion Processes
- Improve Partner Scalability
 - Electronic Bonding
 - Partner Selling, Provisioning & Support Processes
 - Automated Provisioning Opportunities



Y2K Goals

- Improve Product Launch Process
 - Partner Documentation
 - SE & Sales Tools
 - New Product Training
 - Partners
 - Sales Team
- Rationalize our Support Resources
 - More National Accounts Coverage
 - Focus on Producing Partners
 - Measure Support Efficiency
 - Staff up where appropriate



Y2K Goals

- Improve Account Management of Post Sales Support Processes
 - Better Manage Partner Perception
 - Measure & Improve Partner's Post Sales Support Effectiveness
 - Help Partner help themselves



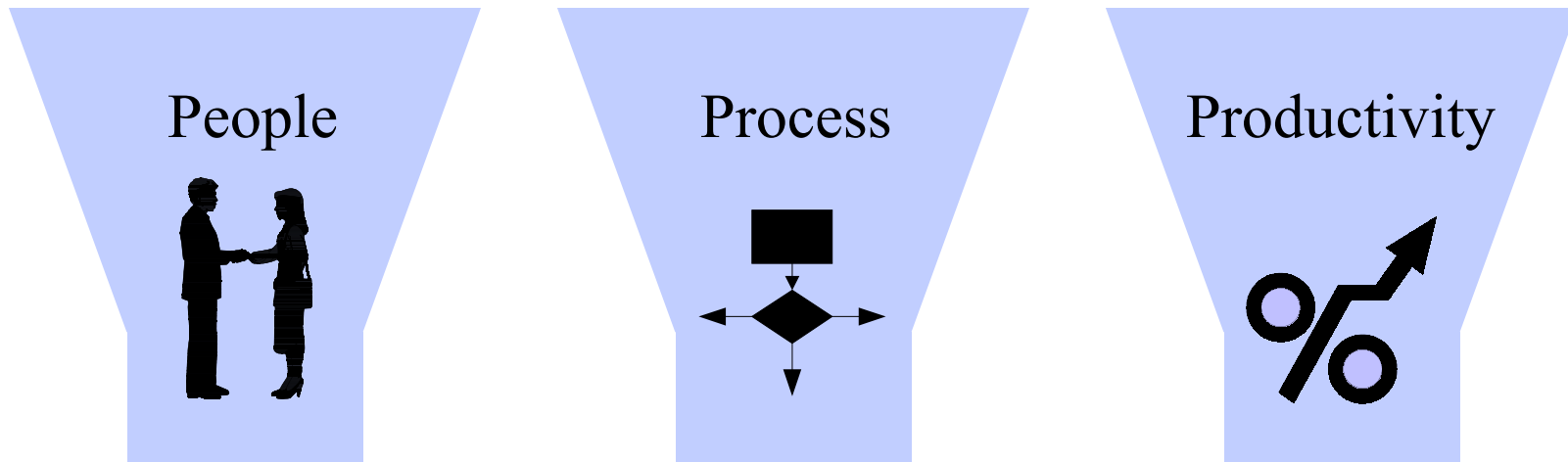
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System Engineering

“First 100 days”

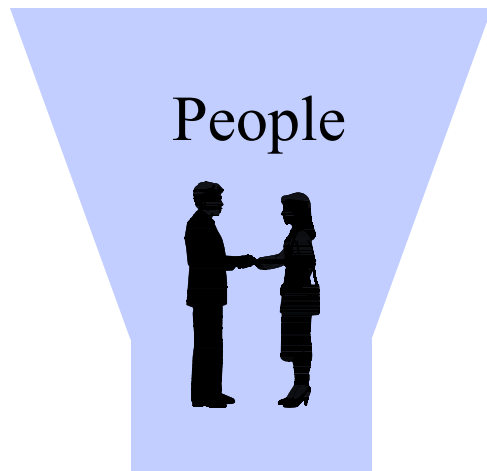
L A R S C *Ø* M™

“3-P” Evaluation Plan



L A R S C *Ø* M™

People



Retention / Morale

Role Definition

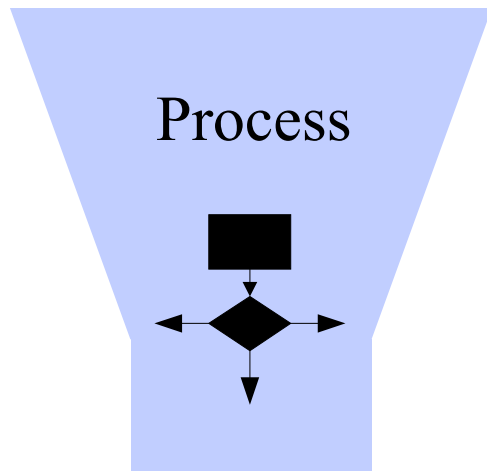
Skills Evaluation

Training Requirements

Territory Evaluation

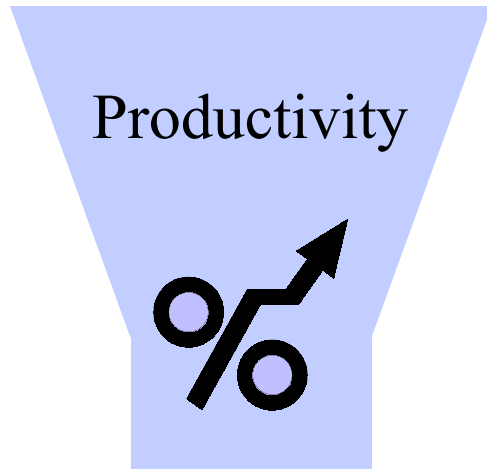
Open Requisitions

Process



Communications
Product Evaluations
RFP's, RFI's, etc;
Input to Product Plan
Streamlining

Productivity



Metrics Program
Create Knowledgebase
Tools Evaluation
Leverage Technology

Longer Term



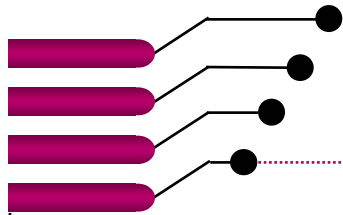
Implementation Programs

Sales Training Programs

Strategic Planning Sessions

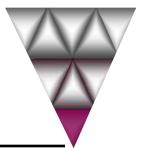
Recognition Programs

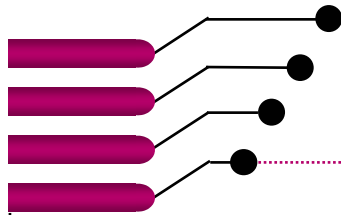
Career Development Tracks



Operations Off-Site

January 28, 1997





Agenda

Product Support

International Support

Trials & Demos

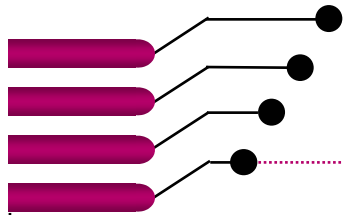
Training

Product Introduction

Product Planning

Customer Care

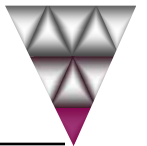


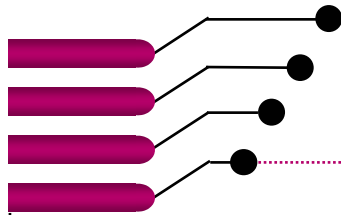


Product Support

Challenges

- Resource Management
- Multi-Product
 - Multi-Load
 - Firmware
- Upgrade Strategies
- Legacy Account Strategies
- New Technology
 - Circuit Emulation
 - Network Management Packages



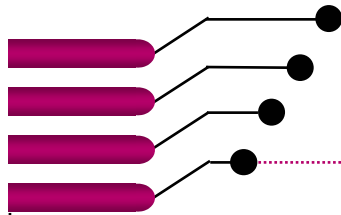


Product Support

Initiatives

- Supervisory Help
- New Hires
- Internal Training
- Develop Troubleshooting Procedures
- Fine Tune Information Systems



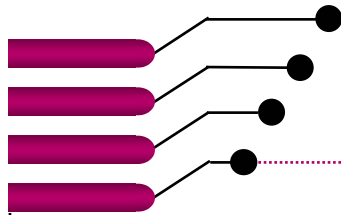


International Support

Challenges

- Channel Support
- Trials & Demos
- Field Sparing
- Training
- 8-5 Telephone Support



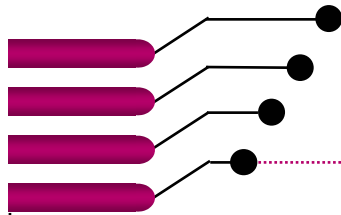


International Support

Initiatives

- Regularly Scheduled Training
- Develop Support Plan for Execution
- Establish Channel Partner Performance Measurement Criteria
- Long Lead Account Planning



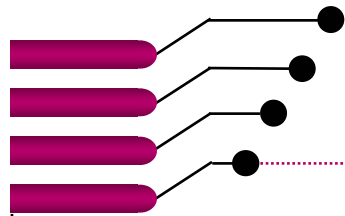


Trials & Demos

Challenges

- Resources to Meet New Account Goals
- Prioritization of Trials
- Scheduling & Account Planning



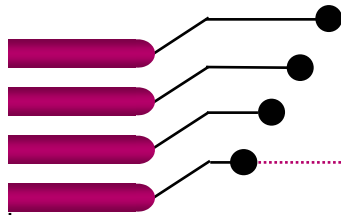


Trials & Demos

Initiatives

- Standard Test Plan
- Test Plan Execution Training
- Become Integrated into Sales Account Plans
- Develop Trial Process



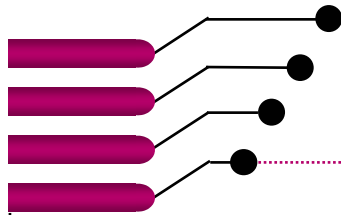


Training

Challenges

- Meeting New Account Requirements
- Program Management by Committee
- Meeting Customer Expectations
- Meeting 2.3 Development Schedules
- Scheduling & Logistics



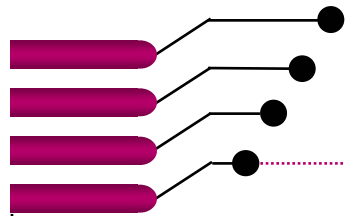


Training

Initiatives

- Integration of More Practical Labs
- Tasked Based Re-organization
- Create More Easily Deliverable Material
- Development Resource Scheduling
- Creation of Mobile Classroom
- Logistics Plan for Course Delivery



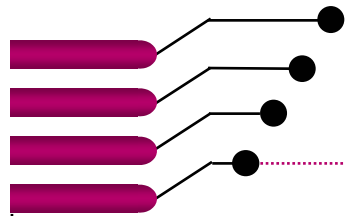


Product Introduction

Challenges

- Beta Testing vs. Verification Testing
- Customers don't readily upgrade
- Nobody wants to be first to deploy



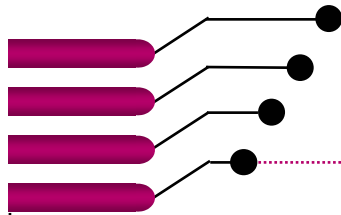


Product Introduction

Initiatives

- New “Beta” Process
 - Internal Network
 - End User Partnering
- Tech Support Coordination on all CA shipments



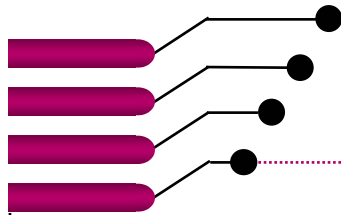


Product Planning

Challenges

- Phase out of old Products/Releases
- RAS Enhancements
 - Customer Features
 - Tech Support Features
- Champion Customer Input



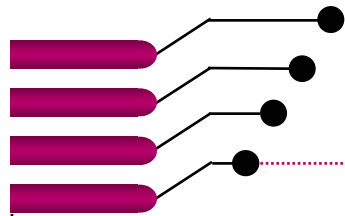


Product Planning

Initiatives

- Product End of Life Plans
- Customer Visits to Operations Organizations
- Develop RAS into All Features



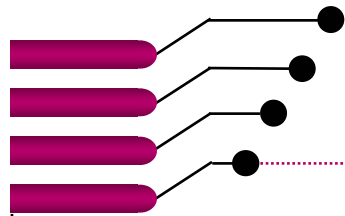


Customer Care Program

Challenges

- Sales to embrace Program
- Scheduling & Preparation
- Promotion of Philosophy



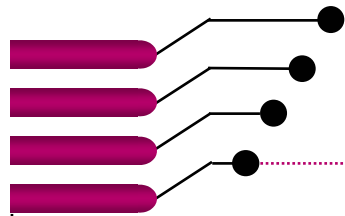


Customer Care Program

Initiatives

- Canned Presentations
- Adjustments of Info Databases
- New Metrics
- New Programs in other Depts.
- Internal Training





Customer Care Program

Initiatives

- Communication Protocol
- Escalation Process
- Customer Satisfaction Measurements
- Streamline Support Processes



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Systems Engineering Staffing Plan

March 8, 1999

Version 2.0



NorthPoint

Introduction

Section 1 – SE Support Requirements

Section 1 summarizes the “Internal Customers” that have thus far been identified as having Systems Engineering support requirements. All the internal groups are identified along with a summary of the specific types of support requirements they have for SE’s.

Section 2 – Organizational Model

Section 2 describes a growth plan for the Systems Engineering department. The current staffing situation along with the geographic and account coverage as it exists today is summarized as a baseline. This is followed by a description for three distinct phases of growth. Each phase is outlined with details on geographic expansion, coverage and direct reporting structures.

Section 3 – Skills Requirement

Section 3 details the necessary skills required by potential SE candidates. The section describes the specific technical skills, knowledge, and experience that the SE needs to be successful. In addition, the specific responsibilities of the SE positions are outlined in job descriptions.

Section 4 – Execution Plan

Section 4 describes the priorities for hiring and outlines goals for completion of the various phases of the plan.

SE Support Requirements

Channel Sales Organization

The Channel Sales Organization creates the most significant requirements for SE support. The SE is an integral part of the sales account team that is tasked with signing up new channel partners. The SE provides support by participating in teleconference calls, face to face sales calls, demonstrations, trials, training sessions, email correspondence, interconnection processes, and direct Engineering discussions. The SE represents the primary technical interface for the Channel Partner during and after the sales process.

The Channel Sales Organization currently has presence and ongoing sales activity in 14 metropolitan service areas as of this writing and has plans to expand into 14 more metropolitan areas within the next 6 months.

National Accounts Organization

The National Accounts Organization will also drive requirements for SE support in their efforts to secure large, strategic partners nationwide. The SE involvement and responsibilities will be very similar from a technical nature to those required in the Channel Sales efforts. The technical depth and complexity of the issues encountered by National Account prospects may however be more involved and time consuming. The slightly differing sales process will also force the SE to perform further degrees of account planning, strategic selling, account management and project management.

The National Account Organization currently has sales efforts ongoing nationwide with a staff currently positioned in San Francisco, CA and Washington D.C. Further expansion is currently planned for the positioning of additional National Account representation in Denver, CO.

Account Relations Organization

The Account Relations Organization, in their efforts to oversee completion of the partner interconnection process and sell additional lines and services, will also drive requirements for SE support. The SE will need to be closely involved with Account Support Managers in the initial interconnection process with newly signed partners. The SE will be required to help explain the various equipment options and manage the selection, configuration, and installation of the partner's interconnection platform. In addition, the SE's will need to help with the efforts of the Account Relations Managers to drive additional line count through the Partner's outside sales organization. This will include dealing with technical questions and issues and trying to develop a positive working relationship with the Partner's technical sales staff.

The Account Relations Organization has representation in 6 geographic regions and will grow into other regions as new partners are signed. Most of the requirements of the Account Relations Organization for SE support can be handled via teleconferencing and email.

Business Development Organization

The Business Development Organization may have some requirements for SE support as the business scales up. To date they have gotten their technical support through people like Richard, Nathan, and Shahin. But as the business scales and the number of incoming requests for business development involvement increases, Business Development will need a more regular and reliable conduit to technical information and support. Senior Systems Engineering staff based out of Corporate would be able to provide the first line of this support. Systems Engineering would be able to provide Business Development with information and feedback on the capabilities of our network, organizations, and processes as well as provide initial technical feasibility input on potential enhancements or new services.

Technical Support Organization

The Technical Support Organization does not have direct requirements for SE support, however they indirectly rely on the performance of SE's in the field to more effectively carry out their roles. If SE's are properly positioning our service offering and explaining the technical concepts thoroughly with our partners, then the Technical Support Organization can be much more effective in their troubleshooting processes. They could spend more time fixing and less time educating. The Technical Support Organization would also benefit from SE efforts to properly document partner configurations. By having this configuration information catalogued in an online library, the Technical Support Organization can immediately look up and understand customer configurations and accelerate the resolution process in service outage situations. Technical Support could reduce the time involved with the usual 20 questions they need to ask the customer while the service is down and while the customer is thinking that "we should already know this information." Being more efficient in this area would lead to a better customer experience even if the service is unavailable.

Organizational Model

Current Staffing & Coverage

Today the Systems Engineering organization is attempting to meet all these requirements with a total of three SE's. The current breakdown of responsibilities is as follows:

Paul Caturegli, Systems Engineer

Paul is based out of the San Francisco office and provides support to the Channel Sales efforts in the Bay Area and Chicago. Paul has started to provide coverage to the Detroit, Dallas, and Houston markets. Paul is also providing support to the National Accounts Sales efforts by supporting our efforts with @Work, Digex, Frontier Global Center, Level 3, and Savvis as well as others. Being positioned in San Francisco, Paul also has taken on the responsibilities for maintenance of the System Engineering Intranet Web pages and some coordination of vendor training.

Phil Exel, Systems Engineer

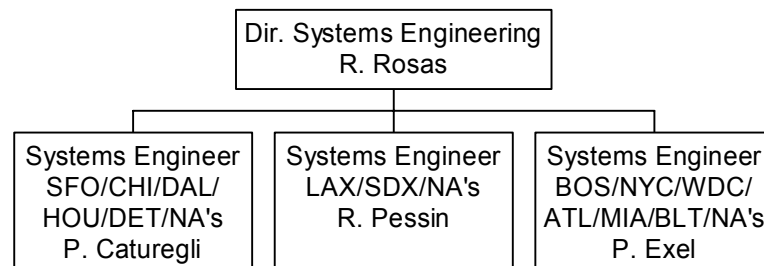
Phil is based out of the Tyson's Corner, VA office just outside of Washington, D.C. Phil is providing support to the Channel Sales efforts in Washington D.C., Baltimore, New York, Boston, Miami, and Atlanta. In addition, Phil is also handling National Accounts sales efforts at Cable & Wireless and Uunet among others.

Rogers Pessin, Systems Engineer

Rogers is based out of the Irvine, CA office in southern California. Rogers is providing support to the Channel Sales efforts in the Los Angeles and San Diego markets. Rogers is also providing support to ACS, a National Account that is headquartered out of the Los Angeles metro area.

The organizational structure today is very straight forward and displayed below:

(Note: Some unknown anomaly may cause some of the boxes in the organizational charts to be displayed with dashed lines. There is no significance to them in this document. Please disregard them if they appear.)



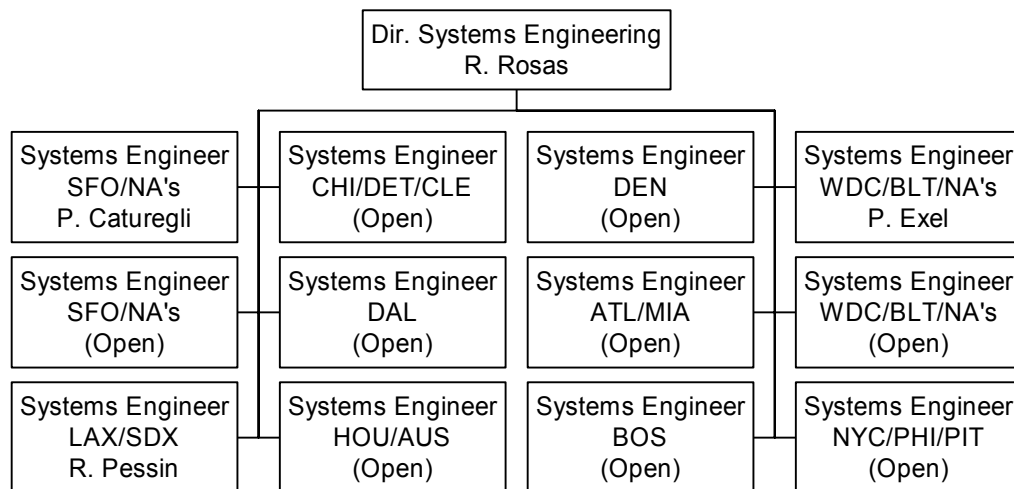
Phased Expansion

Projecting a growth plan for the department can be quite difficult given the very dynamic business environment we compete in. A number of factors can affect the requirements and necessity for more SE support. Some of these factors include Geographic Expansion, the signing of New Strategic Partners, the Introduction of New Products and technologies, shifts in our company's strategic directions and the growth patterns of our partners. Thus, staffing levels needed to cover the requirements for SE support could easily change over time.

The staffing plan factors in this reality and attempts to address it by creating various checkpoints at which these business issues can be re-evaluated and the plan rethought and adjusted. The re-evaluation checkpoints can be taken while moving from one phase of the staffing plan to the next. New information about the business environment can then be used to adjust the plan from the basic structure defined in this document. So, given the data as we understand it today, this plan defines three growth phases which are outlined below. Please note also that the plan does not reflect possible promotions and transfers by our existing SE's.

Phase 1 Organizational Model

The goal of Phase 1 is to grow the staff out from a size of 3 to a size of 12 by placing 9 new SE's into most of the major tier one metropolitan areas. This phase is an attempt to provide more local support to sales efforts in those metropolitan areas where we are currently delivering and/or selling services today. In addition, more SE resources would also be available for National Accounts support in San Francisco and Washington DC. This phase would require recruiting efforts in San Francisco, Chicago, Dallas, Houston or Austin, New York, Washington DC, Boston, Atlanta, and Denver. Upon completion of Phase 1, the organization would continue to be flat with all SE's reporting directly to the Director of Systems Engineering. Note that by the time all these open positions are filled, additional metropolitan areas will have been launched. Thus some of the SE's will still be assigned to and covering more than one metropolitan area. Completion of Phase 1 will yield the following organizational structure:

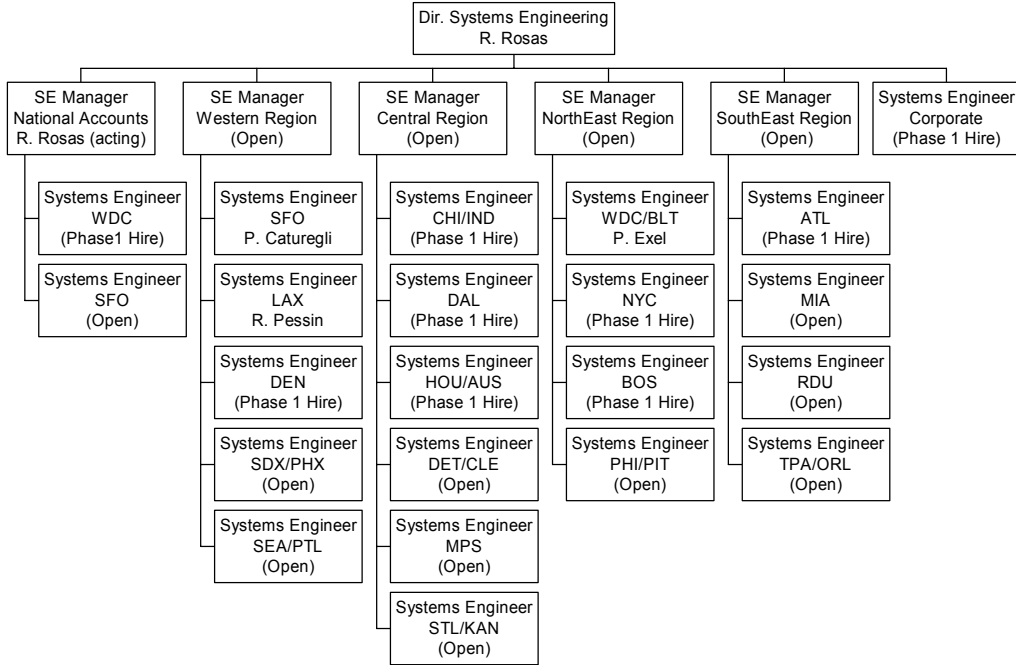


Phase 2 Organizational Model

The main goal for Phase 2 of the hiring plan would be to re-organize in a structure that would allow for a more tightly integrated team orientation with the sales force. SE's would more focus on either Channel Sales or National Accounts Sales and work more regularly with their Sales counterparts in team oriented account planning and strategizing. What we hope to gain by re-organizing is to try to move the SE into more of a strategic role versus the very tactical role they play today. To help facilitate this, SE Managers would also be hired to work closely with the Regional Sales Directors to closely monitor and maximize SE resource utilization and efficiency within the region. Additionally, the SE Manager would be able to contribute both strategically and technically within customer accounts to help close business in the region.

Also note that a focused Corporate SE position with a direct reporting line to the Director is included in this phase. The Corporate SE would not have a direct responsibility to either a territory or set of accounts. The Corporate SE would serve as a national resource. The role of the Corporate SE would be to help represent Sales and Systems Engineering in cross-functional activities and programs at Corporate. The Corporate SE would help to represent the interests of our field sales and SE's as well as give SE management better visibility to future products and programs. This will help SE management to better prepare the SE's and field sales force for the introduction of the new products and programs through planning proper training, communications, and effective roll out. The Corporate SE will also serve as an escalation point for technical information to both our SE's in the field and the Business Development organization.

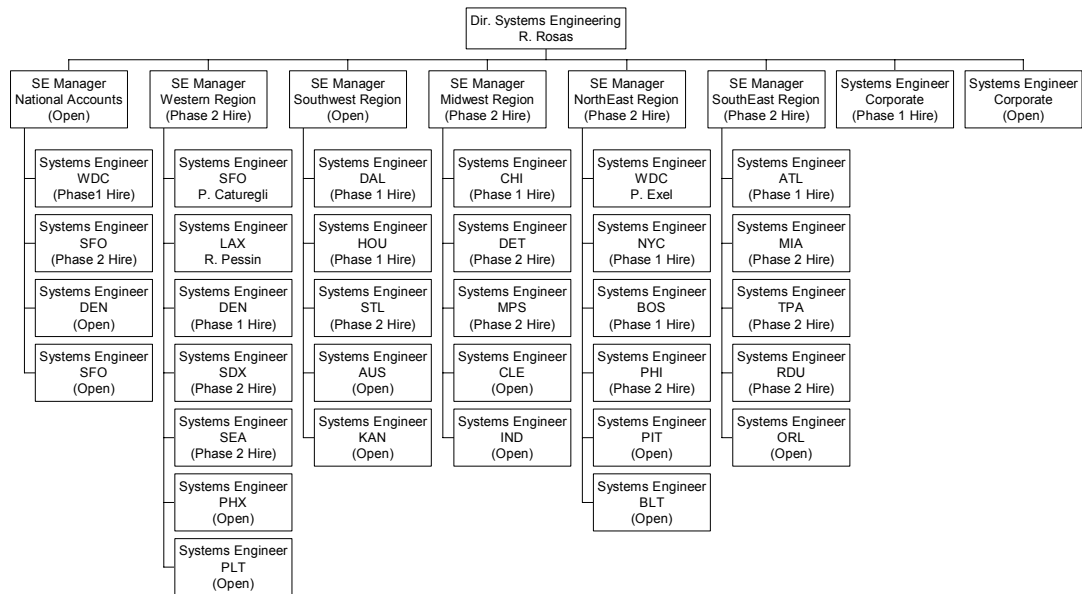
At the completion of Phase 2, we would still be playing catch up in terms of the geographic expansion activity. Additional SE's would be hired to reduce the number of MSA's covered by some of the existing SE's, however, additional markets would be launched during this time as well. So, we would still be in a situation where some SE's would cover more than one market. Phase 2, when complete, would result in an additional 14 hires including 4 SE Managers. The organizational structure and coverage would be as follows:



Organizational Model – Phase 3

Phase 3 of the hiring plan becomes the hardest to predict as business conditions will have certainly changed by the completion of Phase 2. Thus, this part of the hiring plan becomes the most speculative and least useful. In any case, Phase 3 basically would round out the staff to a point where all SE's were covering only a single metropolitan area. It is unclear at the time of this writing whether this is a necessary step. It may be the case that we are required to put a second SE in some of the metropolitan areas. In any case, with that assumption of an "SE in every city", we would hire an additional 14 people which includes 2 more SE Managers and another Corporate SE.

So, given today's geographic coverage, the completion of Phase 3 would yield the following organization:



Skills Requirement

Skill Sets Required

The skill sets that the SE will require to be successful can be broken down by Technical skills and Business/Sales skills.

On the technical side, we will need to hire SE's that are very knowledgeable in data networking. The SE should be well versed in WAN communications with specific knowledge and deep understanding of either Frame Relay or ATM. In addition, LAN knowledge is important especially with respect to understanding network design constraints with LAN technologies like Ethernet, Fast Ethernet, Token Ring, and FDDI. Protocol knowledge is also essential with specific emphasis on a deep understanding of TCP/IP. Specifically, the SE will need to understand IP addressing structures, IP subnetting, Routing Information Protocol (RIP), Open Shortest Path First (OSPF) Protocol, Border Gateway Protocol (BGP), Simple Network Management Protocol (SNMP), Network Address Translation (NAT), and Dynamic Host Control Protocol (DHCP). Finally, the SE should be experienced in data internetworking which includes a thorough understanding of LAN/WAN network design issues and a deep understanding of the function of internetworking devices such as routers, bridges, and switches.

Knowledge of other technologies that would prove beneficial for the SE to have would include telecommunications oriented skills and equipment experience with ISDN, T1, FT1, DS3, and Sonet. Other technologies which would provide added value include Virtual Private Networking, Security and Firewalls, Point to Point Protocol, Domain Name Services (DNS), RADIUS, Voice over IP, and of course DSL.

The Business/Sales skills that the SE will need to possess include the ability to lead and steer technical discussion, deliver effective presentations to technical and non-technical audiences, and produce clear written correspondence. We will want our SE's to be skillful in strategic selling which includes helping to develop account plans and strategies as well as executing effective account management. Our SE's will need to be well organized and have good project oriented execution skills. Finally, the SE must be both customer service and results oriented.

Backgrounds & Experience

At this stage in the growth of the company and the SE organization we will be focusing on trying to hire senior level people. We will be best served by looking for people that have 10 or more years experience in the industry with at least 5 years of that directly related to the selling or supporting of data communications products or services. Candidates should have received their technical skills through experience in a Network Engineering,

LAN/WAN Management, or Network Operations role. It wouldn't be mandatory, but candidates would ideally have previous data communications experience with a LEC, ISP, or other Network Service Provider.

In building the Systems Engineering staff, the goal will be to attempt to hire a balance of experienced SE's from not only other LEC's but also Internet Service Providers, data communications equipment vendors, and possibly high end VAR's.

Job Descriptions

Systems Engineer

Description:

The Systems Engineer (SE) will provide pre and post sales technical support to NorthPoint's ISP, reseller, and corporate partners. In this role, the Systems Engineer (SE) will provide the customer with detailed understanding of NorthPoint's products and network. Additionally, the SE will assist the customer in all aspects of implementation and testing of services into their existing networks.

Responsibilities:

- Act as a technical resource for both external and internal customers
- Support implementation of NorthPoint services into customer networks
- Respond to request for proposals (RFPs) and verify the technical accuracy of all types of Sales proposals
- Deliver technical presentations
- Deliver technical training to internal and external customers
- Assist in creation of technical documentation
- Conduct product demonstrations, lab testing and trials
- Act as the technical account champion that assures NorthPoint earns maximum mind share within the technical organizations of accounts
- Communicate and provide comments to corporate product marketing and development on customer requirements to assist NorthPoint in product and policy planning.
- Assist in developing sales account plans and strategies for securing new business
- Monitor field activities of NorthPoint competitors and provide appropriate feedback to corporate product marketing
- Successfully execute appropriate NorthPoint policies and procedures

Qualifications:

Self-motivated and self-reliant individual with the ability to set priorities in a fast growing start up environment. Results driven with a proven track record. Team oriented. Excellent presentation and organizational skills with a talent for customer interaction at all levels. Network engineering experience that includes sales support and customer interaction, excellent verbal and written communication and presentation skills. Must have strong knowledge and understanding of WANs, remote access and complex network design principles and protocols including: IP routing, Frame Relay, ATM, ISDN, Network security.

Must have experience with internetworking equipment including features, functionality, and configuration.

Skills/Experience:

Minimum of 8 years of industry experience with a minimum of 5 years of network engineering experience in a systems engineering and/or marketing engineering role. Previous experience working with indirect channels a plus. Experience working with Internet Service Providers (ISPs) and/or other National Service Providers (NSPs) also a plus. BSEE, BSCS, or equivalent experience.

Corporate Systems Engineer

Description:

The Corporate Systems Engineer will be a national resource positioned at the Northpoint corporate headquarters to provide a liason for Systems Engineering into cross departmental activity. In addition, the Systems Engineer (SE) will be a back up resource to provide pre and post sales technical support to NorthPoint's ISP, reseller, and corporate partners. In this role, the Systems Engineer (SE) will provide the customer with detailed understanding of NorthPoint's products and network. Additionally, the SE will assist the customer in all aspects of implementation and testing of services into their existing networks.

Responsibilities:

- Act as a representative for Systems Engineering, Sales, and Northpoint customers in cross functional projects, programs, and new product introduction activity
- Act as a liason to information for field Systems Engineers
- Coordinate and take part in customer visits to corporate headquarters
- Assist in the development of Systems Engineering tools and training programs.
- Act as a technical resource for both external and internal customers
- Support implementation of NorthPoint services into customer networks
- Respond to request for proposals (RFPs) and verify the technical accuracy of all types of Sales proposals
- Deliver technical presentations
- Deliver technical training to internal and external customers
- Assist in creation of technical documentation
- Conduct product demonstrations, lab testing and trials
- Communicate and provide comments to corporate product marketing and development on customer requirements to assist NorthPoint in product and policy planning.
- Monitor field activities of NorthPoint competitors and provide appropriate feedback to corporate product marketing
- Successfully execute appropriate NorthPoint policies and procedures

Qualifications:

Self-motivated and self-reliant individual with the ability to set priorities in a fast growing start up environment. Results driven with a proven track record. Team oriented. Excellent presentation and organizational skills with a talent for

customer interaction at all levels. Network engineering experience that includes sales support and customer interaction, excellent verbal and written communication and presentation skills. Must have strong knowledge and understanding of WANs, remote access and complex network design principles and protocols including: IP routing, Frame Relay, ATM, ISDN, Network security. Must have experience with internetworking equipment including features, functionality, and configuration.

Skills/Experience:

Minimum of 8 years of industry experience with a minimum of 5 years of network engineering experience in a systems engineering and/or marketing engineering role. Previous experience working with indirect channels a plus. Experience working with Internet Service Providers (ISPs) and/or other National Service Providers (NSPs) also a plus. BSEE, BSCS, or equivalent experience.

Systems Engineering Manager

Description:

The Systems Engineering Manager (SEM) will manage a team of Systems Engineers (SE) in an assigned region. The SEM will oversee and insure that the requirements for SE support are being met in the region as well as work to meet both the strategic and sales goals for the department, region and company. The SEM will also be responsible for the hiring, training, and career development of region SE's.

Responsibilities:

- Act as a technical resource for both external and internal customers as well as region SE's.
- Support implementation of NorthPoint services into customer networks
- Deliver technical presentations
- Assist in creation of technical documentation
- Communicate and provide comments to corporate product marketing and development on customer requirements to assist NorthPoint in product and policy planning.
- Assist in developing sales account plans and strategies for securing new business.
- Monitor field activities of NorthPoint competitors and provide appropriate feedback to corporate product marketing.
- Work with regional sales management to develop plans for meeting regional sales performance goals.
- Hire and train SE's in the assigned region.
- Develop and execute career development plans and objectives for region SE's.
- Successfully execute the strategic objectives of the Systems Engineering department in the assigned region.
- Successfully execute and insure execution of appropriate NorthPoint policies and procedures

Qualifications:

Self-motivated and self-reliant individual with the ability to set priorities in a fast growing start up environment. Results driven with a proven track record. Team oriented. Excellent presentation, organizational, and project management skills with a talent for customer interaction at all levels. Network engineering experience that includes sales support and customer interaction, excellent verbal and written communication and presentation skills. Must have strong knowledge and understanding of WANs, remote access and complex network design principles and protocols including: IP routing, Frame Relay, ATM, ISDN, Network security. Must have experience with internetworking equipment including features, functionality, and configuration. Must have excellent conflict management, problem solving, leadership, and motivational skills.

Skills/Experience:

Minimum of 8 years of industry experience with a minimum of 5 years of network engineering experience in a systems engineering and/or marketing engineering role. At least 3 years experience managing technical personnel with a minimum of 2 years experience managing Systems Engineers. Previous experience working with indirect channels a plus. Experience working with Internet Service Providers (ISPs) and/or other National Service Providers (NSPs) also a plus. BSEE, BSCS, or equivalent experience.

Execution Plan

Priorities and Schedules

The general priorities within each phase of hiring are numbered below along with the target month of candidate acceptance for the position. Actual start dates may follow closely behind. Planning and scheduling for Phase 3 is highly speculative and not worth the effort at this time. Priorities and schedules for Phase 3 will be defined at a later date.

Phase 1

1) SE San Francisco (SFO)	Completed 2/99
2) SE New York (NYC)	Completed 2/99
3) SE Dallas (DAL)	Completed 3/99
4) SE Boston (BOS)	Planned 3/99
5) SE Atlanta (ATL)	Planned 3/99
6) SE Houston (HOU)	Planned 3/99
7) SE Washington D.C. (WDC)	Planned 4/99
8) SE Chicago (CHI)	Planned 4/99
9) SE Denver (DEN)	Planned 4/99

Target Completion of Phase 1	4/30/99
Total Staff Size:	12

Phase 2

1) SEM SouthEast Region	6/99
2) SEM NorthEast Region	6/99
3) SE National Accounts San Francisco	6/99
4) SEM Central Region	7/99
5) SEM Western Region	7/99
6) SE Philadelphia/Pittsburgh (PHI/PIT)	8/99
7) SE Miami (MIA)	8/99
8) SE Raleigh (RDU)	8/99
9) SE St. Louis/Kansas City (STL/KAN)	9/99
10) SE Tampa/Orlando (TPA/ORL)	9/99
11) SE Denver (DEN)	9/99
12) SE San Diego/Phoenix (SDX/PHX)	9/99
13) SE Seattle/Portland (SEA/PTL)	9/99
14) SE Minneapolis (MPS)	9/99

Target Completion of Phase 2	9/30/99
Total Staff Size:	26

Systems Engineering Task Definition Guide

August 1, 1999

Version 1.0



NorthPoint

Table of Contents

SYSTEMS ENGINEERING TASK DESCRIPTION	3
1.1. PRESALES SUPPORT	3
1.1.1 ACCOUNT PLANNING	3
1.1.2 TECHNICAL PRESENTATIONS.....	3
1.1.3 TECHNICAL FOLLOW UP	3
1.1.4 SALES PROPOSALS.....	3
1.1.5 PRODUCT DEMOS, LAB TESTING AND TRIALS	3
1.1.6 CUSTOMER VISITS TO CORPORATE HEADQUARTERS.....	4
1.1.7 NEW PRODUCT REQUESTS OR ENHANCEMENTS	4
1.2. PARTNER LAUNCH.....	4
1.2.1 INTERCONNECTION	4
1.2.2 TRAINING	5
1.2.2.1 “SERVICE DELIVERY” TRAINING	5
1.2.2.2 “HOW TO SELL DSL” LAUNCH TRAINING.....	5
1.2.2.3 ASSIST IN SALES TRAINING UPDATES	6
1.2.2.4 DELIVER “CUSTOMER SERVICE” TRAINING	6
1.3. POST SALE SUPPORT	6
1.3.1 NETWORK OUTAGES.....	6
1.3.2 END USER PROBLEMS	6
1.4 ACCOUNT RELATIONS.....	6
1.4.1 DEVELOPMENT OF TECHNICAL RELATIONSHIP	7
1.4.2 MONITOR NETWORK OPERATIONS ACTIVITY	7
1.4.3 PRODUCT UPDATES	7
1.4.4 END USER SALES CALLS.....	7
1.4.5 IDENTIFY COMPETITIVE THREATS	7

Task Definition

1. Systems Engineering Task Description

Systems Engineering responsibilities consist mostly of providing technical assistance to our partners, prospects, and sales team. The support effort may also include providing support to End Users as a part of helping partners to secure strategic, high line count deals.

1.1. PreSales Support

PreSales support activity consists of sales associated tasks that can occur up to the point of sales contract execution with a new partner.

1.1.1. Assist in developing sales account plans and strategies

The SE should be involved in all account planning and strategizing activity. This may include participation in all account team meetings, account reviews, territorial reviews, etc. The SE should be prepared to contribute to such sessions by insuring that the entire account team is educated on any known technical barriers, unusual technical requirements or identification of key technical decision makers.

1.1.2. Deliver technical presentations

During the sales process the SE should deliver technical presentations to prospects which describe Northpoint's physical and logical network architecture and footprint, vendor platform choices, CPE capability, deployment options, service descriptions, and future product roadmap.

1.1.3. Provide technical follow up

After initial face to face meetings with prospects, there will usually be continued follow up with prospects in the way of phone calls, emails, and additional meetings. The SE should strive to continue to move the prospect forward in the process by being responsive to the requests of the prospect and delivering answers to technical or process inquiries. Responsiveness during this period is paramount and SE's should have a goal of responding to emails and voice mails by the end of the next business day. If these inquiries require corporate involvement, then the SE should escalate via the processes defined by their management. The SE still remains the owner for the partner of facilitating the answers from other organizations and delivering to the partner. The SE should also manage the expectations of the partner of when the information will be delivered.

1.1.4. Verify the technical accuracy of all Sales proposals

Any Requests For Information (RFI's), Requests For Proposals (RFP's), or other sales proposals should be reviewed by the SE for technical accuracy and feasibility. The SE should work with Product Management to verify all proposals that include the committed delivery of unreleased products or services. The SE should also verify that products or services proposed are within the scope of the service delivery processes that Northpoint deploys. Any changes or additions to the service delivery process should also be reviewed and verified with Product Management.

1.1.5. Conduct product demonstrations, lab testing and trials

On occasion a prospect will want to engage in some kind of product demonstration, lab testing or field trial before making a decision to proceed with Northpoint as a partner. In this case the SE will be responsible for managing the testing process. The SE should work with the prospect to determine what both the requirements and success criteria are for the testing. The SE should work as closely as possible with

the prospect in developing a test plan that identifies test objectives, test descriptions, test procedures, resources required, and expected results. In the case of a field trial a project plan should be completed to help manage through the deployment of the trial. The test or project plan should be built and reviewed with the prospect to establish the proper expectation levels and agree upon the success criteria for considering the test completed or passed. The SE is then responsible for determining and requesting from Systems Engineering management the proper resources needed to execute the testing. The SE will also need to track and follow up with the resource requests to ensure that resources are allocated and available in a timeframe which satisfies the prospect. The SE along with the Account Manager is also responsible for coordinating the availability of partner resources required. The SE should also manage post testing documentation and distribution of the results.

1.1.6. Coordinate and take part in customer visits to corporate headquarters

If a prospect, during the presales process, requests a visit to our corporate headquarters, the SE should help the Account Manager to coordinate the visit. The SE should help to identify those hot issues which appear to be of interest to the prospect. Feeding this background information to corporate will allow for making sure that we have the right people with the right preparation in the meeting. Depending on the critical nature of the meeting, the SE should consult with their management to determine if travel to corporate is justified to attend the meeting.

1.1.7 Identify and Qualify New Product Requests or Enhancements

During the presales process, there will be from time to time prospects who ask us for capabilities outside the definition of the current service offering. If there are requests for new products, capabilities, or enhancements, then Systems Engineering and Sales need to escalate those requests into Product Management. The Systems Engineer should take the lead on this effort by working with the prospect up front to understand the detailed requirements for what they are requesting. A level of prequalification of the application to determine key pieces of information like technical feasibility, process integration impact, business opportunity, alternate solutions, etc, must be done. After gathering this information then the request should be escalated into Product Management using the means defined jointly by Product Management and Sales Engineering Management.

1.2. Partner Launch

After the signing of a contract with a new partner, then there is various activity related to getting that partner on line, ramped up, and selling lines for us. There are certain activities with which the SE will be directly involved.

1.2.1. Interconnection

Until a partner is interconnected to our network, lines ordered from that partner can not be delivered. Therefore, after completion of contract and sometimes before then, the SE should start working with the partner to determine how the interconnect will be engineered. The SE should present the interconnection options to the partner and talk them through the characteristics, advantages, and disadvantages of each type of interconnection. Based on decisions made with the partner on the interconnection type, the SE is responsible for identifying those choices on the Partner Order Profile (POP) form. More specifically, the critical choices that need to be identified on the POP form are:

- i) Whether the partner router will attach to our network using Frame Relay or ATM protocols.

- ii) Whether the partner router will receive bridged formatted or routed formatted Packet Data Units (PDU's)
- iii) Whether the location of the partner router will be collocated at the Northpoint node site (Cross Connect) or whether a DS-3 circuit will need to be ordered.

If this information can not be supplied on the initial submission of the POP form, then the SE should follow up with supplying this information within a two week period.

Other items that should be discussed with the partner as part of the interconnection process are:

- i) Vendor and model choices for the partner's interconnect router. If the customer seeks the SE's opinions on choices, then the SE should describe the strengths and weaknesses of all routers that Northpoint supports. Caution should be taken by the SE to force the choice upon the partner, as we do not want to appear as biased towards any particular vendor. Northpoint support policies for the partner's router choice should be clearly explained to the partner at this time. After a selection of router equipment has been made, then the SE should discuss configuration issues relative to the selected router. The SE should provide sample or template configuration files and any other configuration assistance needed by the partner.
- ii) Vendor and model choices for Customer Premise Equipment (CPE). If the customer seeks the SE's opinions on choices, then the SE should describe the strengths, weaknesses, features, and benefits of all CPE that Northpoint supports. Caution should be taken by the SE to force the choice upon the partner, as we do not want to appear as biased towards any particular vendor. Northpoint support policies for the partner's CPE choice should be clearly explained to the partner at this time. After a selection of CPE equipment has been made, then the SE should discuss configuration issues relative to the selected CPE. The SE should provide sample or template configuration files and any other configuration assistance needed by the partner.

After all planning discussions have taken place, the SE along with account management should work together to set proper expectations for the partner on when the interconnect can be delivered. The SE should strive to insure that the partner's router equipment is selected, purchased, and installed by the time of circuit availability. If for any reason the progress on the interconnect status seems to be stalled or unknown, then the SE should request status and escalate appropriately.

1.2.2. Training

During the ramp up period there will be various departmental organizations within our partners that need to be introduced to and trained on NorthPoint services and processes.

1.2.2.1. Assist in the delivery of "Service Delivery" Training

As a part of the ramp up processes, the Account Support Manager will schedule a training session with the Partners Operations, Order Entry, and Provisioning organizations to review NorthPoint's Service Delivery process. The SE should participate in as many of these sessions as possible to assist in the delivery of the presentation as well as add technical support to and questions that our partners may have.

1.2.2.2. Assist in the "How to Sell DSL" Launch Training

As a part of the ramp up processes, the Account Relations Manager, Account Manager, or Channel Training Manager will schedule a training session with the Partners Sales and Marketing organizations. The intent is to provide an introduction to DSL technology and discuss how to position and sell NorthPoint services. The SE should participate to insure the proper setting of expectations with respect to the technology and processes that NorthPoint deploys.

1.2.2.3. Assist in Sales Training Updates

The SE should participate on an ongoing basis in the continued Sales Training updates that are given to our partners by the Account Relations Manager. The SE can introduce new technology or products as well as help with positioning against competitive services. The SE should continue to remain visible to the partners sales force and establish themselves as the primary technical interface.

1.2.2.4. Deliver "Customer Service" Training

The SE should deliver Customer Service and Technical Training to the Operations, Technical Support, and Engineering organizations of our partners. The intent of this training is to introduce the details of the technology, the Northpoint service, and the support processes we use.

1.3. Post Sale Support

Despite having several support organizations to handle most of the post sales support needed by our partners, the SE will on occasion be involved in post sale support activities. This effort will be limited and should be reduced as much as possible. The post sales support infrastructure that includes the Network Operations Center, Customer Service, 2nd Tier Technical Support, and Field Operations should be the primary support for post installation break/fix type of issues.

1.3.1. Network Outages

During Network Outages there may be several support organizations involved in the troubleshooting and resolution of the outage. The SE role in these outages is to provide support to the partner in facilitating communications and escalations from the partner to these support organizations. The SE should work to ensure that the proper communications are taking place through the proper channels, accurate information is being relayed to those involved in troubleshooting the outage, and that a NorthPoint action plan to address the issue is established and carried out. The role of the SE in these situations is therefore one of account management.

1.3.2. End User Problems

Because the SE has a direct relationship with the partner, from time to time they will get called directly on end user problems. In this case the SE should work to determine if the problem is caused by a simple CPE configuration issue. If so, the problem may be easily solved over the phone or onsite. If the problem is more involved than CPE configuration, then the SE should work to try and steer the partner into the standard NCC support process or escalate the issue into the NCC and Technical Support for the partner. Even if the SE successfully hands off to these support groups, the issue should be tracked and followed up upon to conclusion.

1.4 Account Relations

After an initial presales and ramp up period, the partnership progresses to an ongoing mode of account development and management of the relationship. The tasks of the SE during this

period will be to continue to establish themselves as a credible technical resource for the partner and keep a pulse on new service definition or competitive threats.

1.4.1 Development of Technical Relationship

The SE is responsible for the continued development of technical relations within the partner account. The SE should strive to strengthen their relationship with the technical decision makers in the account. This should involve regular meetings with heads of Operations and Engineering. The key is to make sure that we understand the problems facing our partners, the solutions that they are considering, and the ways that we may be able to influence decisions that are favorable to NorthPoint. The key is for the SE to establish themselves as a trusted technical resource and provide technical leadership for our partners.

1.4.2 Monitor Network Operations Activity

The SE should develop a relationship with the Network Operations contingent within our partner. With the Network Operations group the SE should work to understand their support processes and point out suggestions for how those processes may be improved or enhanced by better integration with NorthPoint support processes. Secondly, the SE should spend some time in the Network Operations Centers of our partners. There they will learn first hand what kinds of problems are being dealt with on a day to day basis by our partners. Any trends could be noted and fed into product management and training efforts for future products. The SE could also identify further requirements for tools or information which could be provided through our Partner Resource Center.

1.4.3 Product Updates

The SE should brief our partners on new NorthPoint products and discuss roll out issues which the partner should be planning for. The effort should be focused on providing insight to our partners on NorthPoint plans and to evaluate how the partner could take advantage of these new services or augments. The goal is to make sure that we are keeping our customers up to date with the NorthPoint strategy and that we are preparing our partners to “receive” new products when we roll them out. If we aren’t preparing them, then the ramp up time to take new products will definitely delay NorthPoint revenues.

1.4.4 End User Sales Calls

On occasion it is reasonable for the SE to go on joint end user sales calls with our partners. We clearly don’t have the time to go on several of these types of calls, so they must be qualified accordingly. However, if there are strategic, high line count deals that our partners are pursuing then it is in our best interest to help them secure those deals.

1.4.5 Identify Competitive Threats

By development of the technical relationship within the account, the SE may have early insight into competitive threats within the account. Our competitors will continue to attempt to get the attention of our partners with new offerings or new deals. The SE should be aware of any competitive developments in the account so that the information can be factored into the account planning process. Conversely, the SE also needs to make sure that NorthPoint is getting the proper “mindshare” of our partners.

Systems Engineering Development Plan



NorthPoint

Version 1.0
June 30, 2000
Systems Engineering



Systems Engineering Development Plan

Introduction

The goal of this document is to take an internal self-inspection into the general status of the Systems Engineering organization and focus specifically on the potential development areas as they relate to the Systems Engineering position. The Systems Engineering management team has highlighted System Engineer development as a critical departmental objective in achieving the goals of the Systems Engineering organization. The SE management team has had ongoing discussions on subjects such as SE morale, job satisfaction, career development, and employee retention. These discussions have increased in intensity lately as the industry opportunities for technical sales personnel have grown plentiful and the company finds itself in a period of increased attrition, budgetary cutbacks, low stock price, and a perceived lack of “buzz” or excitement inside the company. These current conditions highlight even more the importance for the department and the company to be concerned with career development and retention.

Current Analysis

There are certainly some very positive aspects to the SE position in NorthPoint, so this next section is not intended to be a one sided and gloom portrayal of the position. The focus of this plan is on development areas that we need to be concerned about. Thus we are purely trying to explain some of the issues that the SE management team must be concerned with. There seem to be three significant areas.

System Engineering Position

As the roles and responsibilities of the SE have evolved over the last year and a half, some of the definable characteristics of the position have developed and become clearer. Most significantly, we have seen the role evolve to one of little or no technical selling. The role as we have seen does not offer much latitude for the SE to practice creativity and technical problem solving.

NorthPoint up to now has had a single product with few technical options and it’s pretty much a take it or leave approach with partners. The SE doesn’t have the opportunity to solution sell based on partner requirements or engage in network design. Additionally, creative or unique approaches or “one-offs” are discouraged and frowned upon by the remainder of the company. While the reasons for this are all legitimate and justified, it does take away key tasks that Systems Engineers normally enjoy. They are all technical problem solvers. As our current product set just doesn’t require much technical selling, perhaps the situation may change some with the release other products such as a Frame over DSL product. A FRoDSL product would require that each subscriber deal have an associated layer 2 design and each deal might have specific protocol requirements.

From a technical and networking perspective, the NorthPoint product itself has become pretty simple, straightforward and relatively reliable. These are all reasonable attributes for an

infrastructure company looking for scalability, but are less than dynamic for an eager and aggressive Systems Engineer.

Products & Technology

SE's have not had the opportunity to learn many new products or technologies in the last year or so. New Product Rollouts have been minimal. With those products that have rolled, the experience for the SE has been frustrating also. The product rollout process has often times been rushed, incomplete, and offered nothing technically for the SE. In addition, the SE receives little process training before a new product rolls out. Questions immediately come from partners for which the SE is not equipped to handle. Not having the answer is a killer to the SE's credibility with partners.

Company and Industry

The current position of the company is of concern to everyone in the company, not just Systems Engineering. With continued and visible attrition especially in the Product Management area, the job of keeping SE's motivated and focused is becoming more difficult. In addition, the job market for SE talent is the best it has ever been. We have in fact lost SE's, most of which took startup opportunities with high upside stock potential. The other factor to consider is the NorthPoint stock situation. With no stock price appreciation occurring, SE's are more tempted by opportunities that come their way. Frankly, I am very surprised that we have not lost more SE's than we have.

Development Initiatives

Given the analysis of where we are, the SE management team does have a sense of urgency to address or offset some of the SE issues and concerns stated above. The opportunities are plentiful in the market for SE's so ignoring these issues for long will not be good. Development areas for the SE management team based on the situation analysis can be broken down into three major areas.

Compensation

The current SE compensation plan is broken down to include 3 major components: Base Salary, Commission/Bonus, and Stock Options. Based on my experience and discussions with industry contacts, we fundamentally have the mechanics of a good SE compensation plan. I think we just need some minor tweaks. It is worth reviewing each of these components individually.

- My assessment is that base salaries for the SE positions are pretty competitive for junior level and mid level SE positions in the group. When we have had to recruit SE's who fell into this group the offers have been consistent with their expectations and competitive to other offers. The attraction of senior level candidates however is an area of concern. We don't seem to be competitive on the higher end when we come across sharp, savvy, experienced SE's who are in the top 15% of their field. These "stars" are of course in high demand and can command compensation plans which place them out of reach for Northpoint. In the early startup days we could use stock options to offset lower salaries, but now as a public company we can't offer enough to bring these people onboard.
- The bonus/commission plan mechanics of the current SE plan are very sound and actually pretty favorable for SE's. The plan is based on an at risk annual target amount that is paid 75% on MBO performance and 25% on booked line count. The plan includes accelerators for over-achievement on both the MBO's as well as the

line count component. I believe this part of the plan is in fact popular with the SE's. The one issue worth re-visiting however may be the percentage of this at risk bonus/commission compared to overall compensation. The current policy is 15% annual for SE's and 20% annual for SE Directors. What we have seen in the industry is SE plans that are a little more leveraged on the at risk component. In fact, in competitive situations we have increased an SE's base salary to a little higher than market because the total of the base and bonus combined was uncompetitive. For example we would be competing against offers of 80K base and 25% bonus or 100K total with our offer of 87K base plus 15% bonus. The 15% choice was a decision that pre-dates my joining of the company and has stuck mostly for historical reasons. We should look at this for next years plan and aim to re-adjust the at risk component. We can attempt to balance out the ratios over an 18 – 24 month period that may include lesser merit increases on the base salary side.

The other factor worth looking at is the percentage of bonus tied to booked line performance. In this year's plan we first introduced a line count component which was a significant change to the 100% MBO based plan that SE's were used to. So the line count component is fairly low risk at 25%. If you take a mid/senior level SE with an annual base salary of 100K, this works out to an at risk quarterly amount of only \$940. So as the business matures and install performance has less impact on booked line performance, we may want to consider leveraging the plan more on line performance with accelerators and reducing the accelerators on MBO's so that the upside potential is more shifted to the line performance.

- Companies that have had success in retaining their SE talent have done so largely due to their stock options. We've been historically highly uncompetitive in this area in addition to being much less attractive because of the lack of stock price appreciation. The annual stock grant program recently launched was a huge step in the right direction as long as the board continues the grants on an annual basis. One area that we may want to explore however is some kind of performance stock grant program or some kind of program that allows you to "earn" more stock options. One idea would be to have a program tied to reaching certain levels of expertise through training and certification. As the SE works their way through certification and also becomes more valuable to NPC with their new knowledge, they would be awarded stock grants that both recognize their personal development efforts and help to further preserve the training investment that NPC has made in that employee.

Tools & Support

One of the fastest ways to lose SE's is to put them into positions that do not allow them to maintain their credibility. SE's work very hard to earn their respect from partners. Every partner's question MUST be answered. Knowledge is king for SE's. Below is a list of initiatives that can help to contribute to SE development and the sharpening of skill set and knowledge.

- One of the biggest issues we have to battle in order to keep our skills sharp is access to the people who can give us knowledge. Those organizations are Engineering, Product Management, and IT. The Systems Engineering relationship with these three organizations is one development area for the department. Of the three organizations, Engineering understands the SE function and value the best. IT is starting to learn our value while Product Management continues to be a challenge for SE's. It's just been very difficult for Product Managers to understand why they need to talk to and engage SE's. Of the three relationships, this Product Management relationship needs the most work and will be one area of focus for SE management.

- Access to up to date technical information is critical for SE's. Having informational tools such as technical presentations, white papers, technical notes, positioning papers, and other information readily accessible is extremely important to SE's. Our development in this area is improving, but still not where it needs to be. We need to work more on the organization of technical data to make it logically easier to find. The SE website continues to be under ongoing construction, but we do now have a starting point. Any departmental level effort which requires IT resources such as web development is a challenge to accomplish within NorthPoint. Still more needs to be done in the area of technical information deliverables and the organization and accessibility of technical information.
- On hand reference material is important for SE's to have access to technical information and offer them the opportunity to do research into technical questions or issues. We plan to continue to develop the book of the month program. Each month a topic is selected i.e., IP multicast, XML, ATM, etc. From there the management team selects the book. The SE will receive one book a month to review. Over time the SE will have an established reference library in order to pull theoretical information as needed.
- Another area that can bring much value to the SE is having more access to Network Tools. These tools would allow the SE to be more self sufficient in assisting partners in install and maintenance activity. Empowering the SE with the ability to troubleshoot and do analysis for a partner is huge both to our partners as well as to the SE's position and credibility with partners. There currently are some tools that have been developed mostly for tier 1 and 2 technicians that SE's have had limited access to. We have provided feedback to the design of these tools so that they become more "field friendly". More work needs to be done in this area however.
- One of the challenges of being a field located SE is the lack of access to the hardware, software, and network components that would allow the SE to get some "hands on" real life experience with our product. This experience is invaluable to the SE who must be the expert on the details of our product. One of the initiatives that we need to continue to develop is the DSL@home / DSL@work programs. We are encouraging SE's to have DSL installed at either their home or work locations. Each of the SE's ordered lines through one of their partners and gained considerable insight into the installation processes of their partner and NorthPoint. Hands-on CPE configuration is critical to accomplishing the SE's goal of maintaining product knowledge. The SE is expected to gain critical real-world experience configuring NAT, Filters, testing NetModel scenarios, DHCP and Radius issues, etc. With this experience the SE will learn first hand issues experienced by the end user. We plan to further develop this program by now encouraging various applications and uses of their broadband access.
- Another initiative which hasn't moved along that much is the development of a demo lab which could provide access to all components of our network for the SE. Additionally, the facility would be a huge asset for customer visits or providing customer test beds. SE's continue to ask when the 7th floor lab will be completed. They really look forward to the opportunity to develop their depth of knowledge in our DSLAM, switch, and router platforms. This depth of knowledge and hands on experience is vital.

Training

If there is any one single area of SE personal development that has the most attention of and the most impact on the SE, it is training. Satisfaction in the SE position in most cases can be attributed more to development of technical and business knowledge than making more

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money. More and more, SE's are gauging opportunities on what their access to training and certification programs will be. SE's are very clear and vocal on this subject and we need to listen. This training issue can actually be an area that sets the SE position at NorthPoint apart from the rest. Training could be our best asset in the battle to retain our SE talent. We have traditionally been weak in the areas of new hire, process, product, and technology training. We have to fix this situation very quickly. The following training development initiatives need to be reviewed.

- We have been conducting Technology Transfer Sessions about every 6 months. We have attempted to position these Technology Transfers as opportunities for technology, training, and product updates. The experience so far has been mixed. Often times the agenda is jam packed because we have so few opportunities to get all the SE's together. We attempt to cover a lot of material and often don't get the opportunity to delve as deeply into technical issues as some SE's would prefer. When polled, the SE's clearly would like to see more "hands on" and practical training which includes more examples, case studies, and lab exercises to reinforce the presentation style training they usually get. We have found that the participation from Marketing, Engineering, and IT is sometimes difficult to get cooperated and often takes my personal involvement to negotiate support from management. We always feel like we're asking for huge favors all the time and it is clear that these other organizations do not fundamentally believe that training SE's is a part of their standard deliverables. Engineering focuses on training Operations as a standard product development milestone. Marketing focuses on training the Sales force as another standard deliverable for product rollout. There are no standard deliverables from anyone that include training of the SE's. In my past experiences where these technology transfers worked really well for the company, new products could not be rolled out without having gone through one of these training sessions. Product schedules were adjusted around technology transfers and Product Managers fought to get their products on the next technology transfer agenda. Cross functional technical training was recognized as critical in those companies. NorthPoint is clearly not there yet. Moving forward we would like to integrate these Technology Transfers more cross functionally in to standard NorthPoint technology forums to include Engineering, IT, Operations, Network Build, etc; The environment at NorthPoint usually has each department developing their own training plans and curriculum resulting in duplicative efforts and ultimately a lack of understanding for how technical issues in one department impact another. If there were a single open forum for technology introduction to the rest of the company, the opportunity and discussion would be very enlightening for all. Specifically, it would give the SE the chance to listen to other organization's issues and concerns as well as give the SE's the chance to provide feedback and understanding to others on partner oriented issues we face.
- Given the expense associated with flying everyone into San Francisco for training opportunities, we need to look at other options for training such as computer-based training, web based training, and other collaborative network based training options. We are currently evaluating these types of training technologies and vendors. One intent of this training would be to provide a vehicle in which the SE may study a particular technical area at his or her own pace. This material would provide intermediate test points along the way in order to gauge retention throughout each module. Upon completion, the training should include a final test. The SE must complete and pass the test in order to gain credit for taking the training. This type of online training is a good vehicle for standard technology training that can be developed by a third party. NorthPoint specific information is a little more difficult to distribute via these mechanisms as the material development is more involved. The cost benefits of such a program however could be very beneficial in the long run and more work needs to be done to determine whether this type of training can is

feasible. Given the technical skill set of the SE's, we should use them as the training grounds for working out these training options and evaluating if they are viable options for training our sales, field operations, and LEC relations people in the field.

- The final and clearly most critical initiative that we must look at is vendor certification training. Our partners require skilled Systems Engineering resources to engage in technical dialog related to core products supported in our network today. Certifying the SE's will increase technical proficiency across multiple disciplines i.e. network design and network support. Often the partner will bring up vendor specific issues, which can only be addressed by someone who has intimate, working knowledge of the product. As the SE in the account, certification knowledge position's the SE as the subject matter expert as vendor product discussions are raised. The SE may use this knowledge to influence, coach and/or negotiate with partners as warranted. On the SE side, certification and company provided opportunity for certification is THE number one request for SE's in the field. As we studied the industry certifications available, clearly the most comprehensive and most meaningful programs for both NorthPoint and the SE are the Cisco certifications. Every SE we have hired in the last 9 months has asked about our support for Cisco certification during the interview process. The Cisco certifications hold a lot of value with SE's and many of them see the opportunity to achieve them as an important company provided benefit. Providing a program for the SE's to work through and earn Cisco certifications is no doubt NorthPoint's best tool for retention of our SE talent. The next section of this document discusses the Cisco options and evaluates the best options for a NorthPoint program.

Cisco Certifications

The purpose of this section is to outline the typical certification track taken by individuals wishing to become Cisco certified. As you will see in this section there are many options available to the SE. The method in which the SE chooses to pursue certification can depend on many variables as well. Issues factoring into this discussion may include one if not all of the following factors: SE's technical skill-set and vendor support background, timeframe for overall completion, drive and motivation, comfort level, and travel requirements.

Cisco offers a total of 5 industry-recognized certifications applicable to NorthPoint. They are:

- CCNA (Cisco Certified Network Associate) - CCNA is the first step in the Cisco Career certifications. This package is designed for people relatively new to networking technology and provides a solid understanding of network fundamentals.
- CCDA (Cisco Certified Design Associate) - CCNA and CCDA are the first steps in the Cisco Career certifications. This package is designed for people relatively new to networking technology and provides a solid understanding of network fundamentals with an emphasis on network design issues.
- CCNP (Cisco Certified Network Professional) - CCDP is the next certification level for CCDAs. CCDPs have the expertise to design more complex networks based on Cisco LAN and WAN routing and LAN and ATM LANE Switches. Testing requirements from Cisco stipulate that individuals must pass the CCNA certification as well as the CCDA certification test prior to taking the CCDP certification tests.
- CCDP (Cisco Certified Design Professional) - CCNP is one step away from CCIE. This Cisco Career Certification was created for individuals who are required to install, configure and troubleshoot complex Cisco based networks. Areas of expertise include LAN and WAN routing, dial access servers, LAN and ATM LANE

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switching. CCNAs that want to expand their scope of knowledge and attain the next level of certification. Network administrators, internetworking specialists and technicians involved in the configuration and support of multiprotocol networks using Cisco routers, switches and remote access products.

- CCIE (Cisco Certified Internetworking Expert) - CCIE is the highest level of Cisco Career Certification. Cisco has developed a new CCIE track – ISP Dial Solutions, while identifying the existing CCIE as the Routing and Switching Solution track. This is the only certification that requires passing a practical lab exam (administered by Cisco).

The first step towards achieving certification status requires the SE to think about long-range goals. Ideally the SE should pursue either the Cisco Certified Network Associate or the Cisco Certified Design Associate certification first, and then plan future objectives accordingly. As shown below the table shows more advanced certifications are offered once the entry-level certifications are completed. NorthPoint should focus only on providing a ubiquitous opportunity for all SE's to address CCNA or CCDA certifications at this time.

Certification	CCNA	CCDA	CCNP	CCDP	CCIE
Step 1	Network Fundamentals	Network Fundamentals	Get CCNA	Get CCNA	No previous certification req.
Step 2	Internetworking with TCP/IP	Internetworking with TCP/IP		Get CCDA	
X					
X					
Step 3	Interconnecting Cisco Network Devices	Interconnecting Cisco Network Devices			
X					
X					
X					
Step 4	Understanding Networking Fundamentals	Designing Cisco Networks			
CCNA X. CCDA					
X					
Step 5	Internetworking Technology	Internetworking Technology			
X					
X	Multimedia CD-ROM	Multimedia CD-ROM			
X					
Step 6		CCDA Remote Lab			
X					
Step 7	Sylvan Tests	Sylvan Test			
X					
X					

The courses recommended in each step of the certification process are of course optional and can be taken at a variety of Cisco certified training facilities worldwide. The chosen training provider should offer in-house instructor-led training by default. The training vendor of choice must also offer training accessible in all major markets in order to minimize travel,. The training provider should provide options for CBT(s), books, and web based e-learning as well as offer remote lab access for testing theory. Larger training providers offer customized self-paced study courses as well. We are currently talking with vendors to establish budgetary quotations and evaluating their offerings.

The courses recommended in preparation are described in more detail below:

- [Understanding Networking Fundamentals](#)

Hands-On c-Learning \$1595 USD
Instructor-Led e-Learning \$1195 USD
Self-Paced e-Learning

In today's business world, timely information is the key to success. Meeting the challenges of networking local area, wide area and remote networks requires a firm understanding of data communication standards and emerging LAN/WAN internetworking technologies.

This comprehensive course will help you understand networking terminology, technologies and how data is moved in a real-world network environment. Beginning with the basics of data communication, you will learn data packet structure, frames, communication architectures, transmission methods, DCE/DTE interfaces, modulation and multiplexing. You will build a LAN that demonstrates topologies, components, media access control methods (MAC), protocols, bit rates and bandwidth.

- [Internetworking with TCP/IP](#)

Hands-On c-Learning \$1595 US
Instructor-Led e-Learning \$1195 USD
Self-Paced e-Learning

This course provides a HANDS-ON examination of real-world internetworking applications using Linux and Windows NT platforms on a TCP/IP network. Learn how to install TCP/IP, troubleshoot connections among platforms, access the Internet, and monitor data transfer via IP. Interpret FTP, Telnet, and Web applications services with a protocol analyzer.

Examine each protocol layer, decode packets, and learn how to configure your network. Add HOSTS entries and explore client/server applications. Use DHCP to automate IP address allocation. Discover effective ways to increase the performance of your TCP/IP network.

- [Interconnecting Cisco Network Devices](#)

Hands-On c-Learning \$2295 USD
Instructor-Led e-Learning \$1695 USD
Self-Paced e-Learning

This authorized Cisco course covers the important information required to configure Cisco switches and routers in multiprotocol internetworks.

Twenty-two Hands-On Labs allow you to perform router and switch configurations on a LAN and WAN network. Perform all basic configuration procedures to build a multirouter, multigroup internetwork that uses LAN and WAN interfaces for the most commonly used routing and routed protocols.

- **Designing Cisco Networks**
Hands-On c-Learning \$1595 USD
Instructor-Led e-Learning \$1195 USD

Recognize bottlenecks, growth requirements, constraints, and incorporate current technologies to create a network that is scalable. This course provides you with the knowledge and skills to develop and design integrated network solutions. Analyze your company's current and future network needs and develop a network solution that meets and exceeds your manager's requirements for performance, security, capacity, and scalability.

- **CCDA Remote Labs**
Format: Web lab
Price: 895.00

Description:

This product is a library consisting of the following component products:

Configuring Custom Queueing in a RIP and IPX Environment
Configuring RIPv1 and RIPv2 on the same network
Configuring Redistribution and Route-Maps for RIP and IGRP
Configuring Redistribution with RIP and EIGRP on Serial Links
Configuring Redistribution with Static Routes for RIP and OSPF
Implementing MD5 Authentication in OSPF
Inside EIGRP on Serial Links
Inside OSPF Clear Text Authentication Configuration
Troubleshooting Multi-area OSPF Networks
Troubleshooting RIP and EIGRP
Troubleshooting RIP on Frame Relay Sub-interfaces
Troubleshooting Redistribution and Static Routes in Rip and OSPF
Troubleshooting an External BGP Route to an ISP

Upon the purchase of your lab, you will receive your password and User ID. Your password and User ID allows you to schedule your lab(s). Once you have started the lab, you have a designated time in which to complete the lab (approximately 55 minutes). If you exit the lab before completion, you will not be able to re-access the lab at a later time. You have one year to schedule your individual lab.

Final Summary

To summarize, we have learned a lot about the how the SE position at NorthPoint has developed over the last year and half. We have received a lot of feedback from our SE's and have listened closely to SE candidates who we have tried to recruit. The SE management team believes we have a good feel for what's needed to address the needs of our SE's and what those development areas are.

The primary development area is by far SE training followed by the availability of tools and support. Clearly the most important training development area to SE's is the availability of vendor certification programs. Cisco offers introductory certification programs that NorthPoint should make available to its entire SE team. This certification training is our

number one tool for SE retention and can set the SE position at NorthPoint apart from other SE opportunities. While the cost of the program is a fairly sizeable investment, they pale in comparison to recruitment fees and lost opportunity costs if we start to lose our SE talent.

Moving forward, the SE management team will work as aggressively as possible to attempt to develop the initiatives outlined in the document above. We do have concern however about how far we can get without a company commitment to the budgetary needs of these initiatives.

SE MBO Pool For Q1 2000

- The SE is to be actively engaged during each step of the interconnection process and document the when and why a date is missed and the steps to get the interconnection back on track.
- The SE must take part in a training session on presentation skills.
- Each SE will document in written detail our partners provisioning process. Then, the SE will work to provide value added input to the partner on ways he might be able to improve the provisioning process. Understanding the Northpoint provisioning processes, capabilities and weaknesses, we can provide valuable insight to our partners. The goal is to help our partner's scale to higher line count volumes.
- The SE to work with the AM and ASM to sit through two marketing blitz days of partners to get an understanding of the type of questions potential subscribers ask. Then, working with the ASM and AM develop a training session to address the shortfalls in knowledge so that the sales teams are more productive in closing business.
- Work with our partner's technical organizations to create internal processes to more expeditiously get lines installed, i.e. help the ISPs create the technical processes/flow to get IP addresses, CPE and PVCs in place quickly so lines get installed more quickly.
- SE to conduct technical meetings with partners to review new products, product updates, and technical training.
- SE to be measured on the accuracy of information provided to Transport Design on the Site Survey form.
- SE to deliver weekly progress reports to account teams and SE management on all eConnect implementations in their region.
- SE to establish relationships with the Post Sales technical support organizations of our partners. Spend one full day in the call centers of a selected partner to understand and document the types of subscriber calls coming in and our partners' process for handling them.

**NPC Technology Transfer
Meeting Agenda
May 18 - 21, 1999
Sir Francis Drake Hotel**

Tuesday May 18

8:00 – 8:30	Welcome - Agenda Review - Technology Transfer Objectives - “Rules of Engagement” for Meeting - Administrative Information	Rocky Rosas
8:30 – 10:00	Introduction to Voice Technology	George Hu
10:00 – 10:30	Biology Break / Phone Calls	
10:30 – 12:00	Introduction to VoDSL Technologies	George Hu
12:00 – 1:00	Lunch Break (on your own)	
1:00 – 2:00	PPPoA, PPPoE, & L2TP Tunneling	Redback Networks
2:00 – 2:30	Biology Break / Phone Calls	
2:30 – 4:30	Redback Networks - Product Introduction - Features/Benefits - Applications - Configuration Samples	Redback Networks
5:00 – 7:00	Host Bar Sponsored by Redback Networks	

Wednesday May 19

8:00 – 10:00	Copper Mountain Part 1 - Product Introduction - Features/Benefits - Applications - Configuration Samples - DSL Technologies	Copper Mountain
10:00 – 10:30	Biology Break / Phone Calls	
10:30 – 12:00	Copper Mountain Part 2	Copper Mountain
12:00 – 1:00	Lunch Break (on your own)	
1:00 – 2:30	Partner Resource Center Roll Out - Features/Function - Roll out Process & Status - Roll out Issues / Partner Impact	Tim Cannon

2:30 – 3:00 Biology Break / Phone Calls

3:00 – 5:00	Netopia	Netopia
	- Product Introduction - Features/Benefits - Applications - Configuration Samples	

Thursday May 20

8:00 – 10:00	Flowpoint	Flowpoint
	- Product Introduction - Features/Benefits - Applications - Configuration Samples	

10:00 – 10:30 Biology Break / Phone Calls

10:30 – 12:30	3Com	3Com
	- Product Introduction - Features/Benefits - Applications - Configuration Samples	

12:30 – 1:30 Lunch Break (on your own)

1:30 – 2:30	BOSS Demonstration	Sam Lamonica
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2:30 – 3:30	Service Level Agreement Roll Out	Jeff Burkland
	- Features/Function - Roll out Process & Status - Roll out Issues / Partner Impact	

3:30 – 4:00 Biology Break / Phone Calls

4:00 – 4:45	Product Definition/Development Process	Greg Stone
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Friday May 21

8:00 – 9:00	CPE Bundling Product Roll Out	Oliver Davis
	- Features/Function - Roll out Process & Status - Roll out Issues / Partner Impact	

9:00 – 10:00	ISP Hotel Product Roll Out	Oliver Davis
	- Features/Function - Roll out Process & Status - Roll out Issues / Partner Impact	

10:00 – 10:30 Biology Break / Phone Calls

10:30 – 12:30	Network Architecture / Technology Roundtable	Richard Morris Nathan Gregory Bill Euske
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Section C

Performance, Processes, and Standards

1) Systems Engineering Department Dashboard

At NorthPoint Communications I developed a set of Key Performance Indicators (KPI) for the department. We would report some of those KPI in a monthly produced Dashboard report. The dashboard was a one page monthly departmental status report of key initiatives, events, and news.

2) Meeting Minutes / Action Item Logs

During my career I have put a fair amount of emphasis on process definition, standardization, and common tool sets. This document is one example of a tool that was required for all Systems Engineers. It provided a means to manage meetings, document key takeaways, and track action items and commitments.

3) DS3 Assumption Process Release 1.0

This document is an example of the kind of process definition that I have put into place. I have found that clearly defined processes will help to establish the right expectations up front and also aid in closing the communications gap with customers and internal stakeholders.

4) NetEdge Systems / Nortel Channel Support Guidelines

While managing the Technical Support organization at NetEdge Systems, I put this document together as an appendix to every Channel Partner contract that we signed. The purpose was to detail the support processes for our partners and also to set expectations that we held for their performance as a Channel Partner.

5) Post Sales Account Management Program

At NorthPoint Communications I developed this plan for the Sales and Systems Engineering organizations to use in managing the post sales support component of the account. It was a program designed to report on Key Performance Indicators (KPI) of the post sales or technical support functions. The programs intent was to provide a regular forum to openly discuss the post sales support relationship, identify gaps, and use the KPI to show improvement. The program was really designed to mold the perception of customers about our support levels.

SYSTEMS ENGINEERING DASHBOARD

Month Ending February 2001

Partner Expansion

DS3 Connections	JAN	FEB	MAR
New Requests	6	4	
Completed Circuits	8	7	
Completed Hot List	3	3	
Mean Interval (days)	44	71	
Interval Hot List	36	62	
Completed Cancels	0	2	
Outstanding	156	151	
DS3 Disconnects	JAN	FEB	MAR
New Requests	36	13	
Completed Discos	10	13	
Outstanding	53	53	
New Markets	JAN	FEB	MAR
New Reg. Connects	1	0	

DS3 Interconnection Status

Department	JAN	FEB	MAR
Sales Team	35	27	
Legal	1	0	
TRNSPT Design	10	3	
TRNSPT Provisioning	99	85	
TRNSPT Testing	7	27	
NCC	4	9	
TOTAL	156	151	
Partner Not Ready	JAN	FEB	MAR
No Equipment	37	55	
No Equipment Billing	37	47	

Systems / Processes

Partner Orders	JAN	FEB	MAR
Duplicate VPI/VCI	X	65	
Duplicate VPI/VCI Resolved	X	37	
Avg. Resolution Days	X	9	
EConnect	JAN	FEB	MAR
Bonded Partners	16	16	
Upgrades for Month	0	0	
# of Bonded Orders	7958	6052	
% Bonded Order	62.9	68.7	

- Started to report on incoming duplicate VPI/VCI's coming from partners and the average resolution time to fix them. Will monitor and implement process changes as necessary.
- Telocity & MSN are scheduled to be eConnected once they have migrated to Release 3.8. Otherwise, no resources are being expended on any other ebonding projects at this time.

Training / Events / Milestones

- OSS Release** – March 8 release is still on track. We conducted successful UAT testing w/ Sales personnel. One minor partner issue came up for which we documented a work around for our partners. Worked with Product Management to ensure Product Notes and Partner Bulletins were created and distributed to the field and partners. Worked w/ IT and Engineering to ensure all partner records are loaded with minimum and maximum VPI/VCI values so that validation checking can occur. Partner Implementation Coordinators have been trained on how to update these VPI/VCI fields in the partner profiles if required. We have also instituted process changes to collect VPI/VCI value ranges from partners at the time of new DS3 orders going forward.

Product Initiatives

ADSL L2/Linesharing:

- The Beta Trial is underway utilizing the manual processes. We have approximately 45 orders turned up for the Operational Trial.
- We have decided to include Sales telecommuters to participate in the trial that will aid the team in their trial findings. We anticipate placing orders during the week of 5 March.
- Telocity Market Trial is dependent upon the implementation of a CPE default VP/VCI fix and eConnect changes to the Telocity system. Main issue here is the qualification of the Telocity CPE in Engineering. CPE vendor has communicated a date of 3/31 for completion of necessary changes.

VoDSL:

- This project is progressing according to schedule. Major stake holders have provided input to the Marketing Requirements Document and document is now being circulated for sign-off approvals. The document was circulated with senior Sales management one week prior to sign off, but no input was received. Sales has signed off on the MRD at this point. We are looking at a beta test start during the end of June / early July timeframe.

Regional Connect:

- Analysis was done on the inter-regional orders and recommendations were made on a per Partner basis to Product Management. There will probably be some pricing changes to the Regional Connect product in time. Systems changes are required before we have the ability to bill differently however. So, it will probably be Q3 at the earliest.

EConnect:

- No further partner development at this time outside of Telocity and MSN. Awaiting the rescheduling of Core Team meetings from Product Management

PRC/PreQual

- No further partner development at this time. Awaiting the rescheduling of Core Team meetings from Product Management



NorthPoint

eConnect Implementation Meeting Minutes / Action & Issues Log

Project/Work Effort Name:

ICNT eConnect Weekly Meeting

Meeting Date:

07.11.00

Hosted by:

Rocky Rosas

Logistics:

Recurring Meeting, Time TBD

Conference Bridge: 1 877 867 4534

Participants:

Internet Connect - Merali, Way Mok

NorthPoint - John Bamforth, Lou Gallio, Mugdha Sh??, Mike Perry, Roger House

Absentees:

NorthPoint – Marissa Dowell, Frank Kotch

Project Milestone Dates

	Service Availability (SA)	Order Entry (OE)	Order Update (OU)	Order Search (OSe)	Order Status (OSt)	Order Modify (OM)
Stage	Live	Design & Dev	TBD	TBD	TBD	TBD
Stage Complete Target Date	Complete	TBD	TBD	TBD	TBD	TBD

KEY MEETING TAKEAWAYS:

- Established who the players are on both teams. Here is the contact information for everyone:

ICNT	Merali – V.P. of Information Systems	mmerali@icnt.com	310.974.2860
	Way Mok – Dir. Applications Development	wmok@icnt.com	310.974.2456
NPC	John Bamforth – Dir Information Technologies	jbamforth@northpoint.net	510.450.4258
	Mugdha Shetge – eConnect Developer	mshetg@northpoint.net	510.450.4226
	Lou Gallio – eConnect Developer	lgallio@northpoint.net	510.450.4270
	Roger House – Regional Sales Director	rhouse@northpoint.net	949.727.0430
	Mike Perry – Systems Engineer	mperry@northpoint.net	415.343.2871
	Rocky Rosas – Systems Engineering V.P.	rrosas@northpoint.net	415.365.6021
- Saline Solutions, the previous 3rd party contractor brought onboard by ICNT is no longer doing any work on eConnect. They previously worked on the Service Availability module and may have begun on the Order Entry module but no further development is being done at this point.
- ICNT does not know yet whether they have the skill set to develop the project in house. ICNT asked that we recommend any 3rd parties that NPC has used. NPC communicated that we have worked with Vitria consulting with some partners who were implementing their middleware platform. We are also starting to work w/ PWC. NPC took an action to have someone from PWC contact ICNT to discuss their potential involvement.
- Established that Way Mok will be NPC's primary contact for the project with Merali acting as an escalation point. Our previous contact, Dave Hernandez, is the webmaster and not a back office developer. He will continue to be involved as his skills are required.
- ICNT has a custom built OSS based on NT SQL Server with an ASP front end. ICNT has 12 developers on board. ICNT has just recently rolled out a new version of their OSS as well as a new Trouble Ticketing system in the last couple of weeks.
- Both teams decided that a face to face meeting would be a good next step to review the specifications in more detail, discuss ICNT's requirements, and help establish whether ICNT could take on the project with in house personnel. NPC took an action item to establish the NPC resources and timeframes for such a meeting. Everyone wants to target early next week.

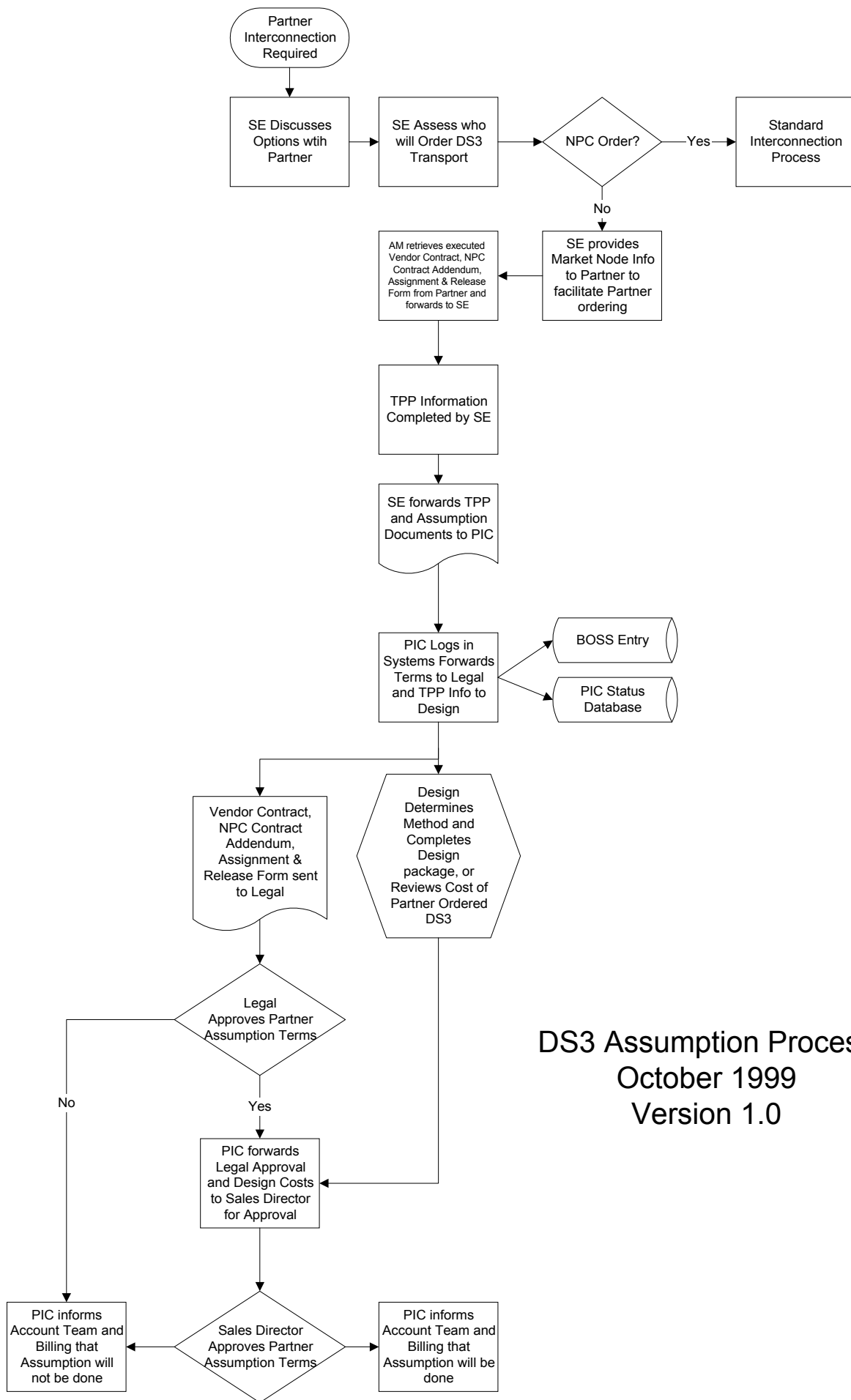
eConnect Implementation Meeting Minutes / Action & Issues Log

ACTIONS & ISSUES:

Item #	Status	Issue/Action Item	Owner	Open Date	Due Date	Status Description
1	X	Send a copy of the latest eConnect Specifications to Merali and Way Mok	NPC - Gallio	7/6	7/7	(7/7) Mugdha forwarded specifications to Merali and Way via email. Action Complete 7/7.
2	X	Set up a joint IT call with ICNT and NPC to discuss status of where we are and agree on implementation plan moving forward	NPC - Rosas	7/6	7/10	(7/10/ The call was set up for Tuesday July 11 at 5:00 with Merali, VP of IT and Way Mok, Dir Application Development. Action Complete 7/10.
3	NEW	NPC to request that PWC contact ICNT for discussion of implementation support	NPC - Bamforth	7/11	7/12	
4	NEW	NPC to determine resource availability for a face to face meeting early next week to determine scope of effort and whether ICNT can do in house or not. Communicate resource availability to proposed date to ICNT	NPC - Bamforth	7/11	7/12	
5						
6						
7						
8						
		X = complete WIP = issue is being worked NEW = opened this week				

DS3 Assumption Process Release 1.0

Step	Description	Task Owner
PASS01	SE Discusses Partner Inteconnection Options w/ Partner	SE
PASS02	Partner Determines They will order DS3	Partner / SE
PASS03	SE Provides Market Info to Partner	SE
PASS04	Partner Negotiates Contract w/ Vendor for DS3 Installation	Partner
PASS05	AM Provides Assumption Package to Partner	AM
PASS06	Partner Executes NPC Contract Addendum & Assignment and Release Form	Partner
PASS07	AM Provides Executed Assumption Documents and Partner Contract to SE	AM
PASS08	SE attaches TPP form and sends entire package to PIC	SE
PASS09	PIC logs all information in BOSS & PIC database	PIC
PASS10	PIC forwards Design Information to Transport	PIC
PASS11	PIC forwards Assumption Documents to Legal	PIC
PASS12	Transport verifies design and provides cost information to PIC	Transport Designer
PASS13	Legal Approves Assumption and notifies PIC	Legal
PASS14	PIC forwards Legal Approval and Design Costs to Sales Director	PIC
PASS15	Sales Director approves/disapproves assumption	Dir Channel Sales, Dir National Accts
PASS16	PIC notifies the Account Team and Billing	PIC



DS3 Assumption Process
October 1999
Version 1.0

NetEdge Systems / Nortel Channel Support Guidelines

1.0 PURPOSE

The purpose of this document is to outline and define the NetEdge Channel Support Guidelines.

2.0 SCOPE

The document will define the significant processes used to provide support to our Channel Partners and their end users. In addition it will set forth certain expectations of NetEdge about the support processes, knowledge level, and resource commitment of its Channel Partners or prospects.

3.0 REFERENCE DOCUMENTS

3.1 NetEdge New Product Introduction New Release Document

3.2 NetEdge Spot Release Process

3.3 NetEdge RMA Process

4.0 CHANNEL SUPPORT PROCESS

4.1 Support Structure

The process for providing support to the end users of our Channel Partners will involve multiple functional groups from both NetEdge and the Channel Partner. Those functional groups include:

4.1.1 Channel Partner Technical Assistance Center (TAC)

The Channel Partner may have the equivalent of a Technical Assistance Center where end users will place their initial calls for product support. This organization is generally a 24x7 operation that provides support for multiple products in the Channel Partner's product line. The NetEdge product will be one of those supported products. The primary responsibility of the Channel Partner's TAC is to accept the initial call from the end user, create a new case record in the appropriate call logging database and initiate the customer support process.

4.1.2 Channel Partner Product Support

The Channel Partner may have the equivalent of a Product Support Group. This group will usually be a NetEdge product specializing part of the Channel Partner's

Technical Support organization, but in some cases will be a part of the Channel Partner's Engineering organization. The primary responsibilities of the Channel Partner's Product Support group is to receive the escalated call from their TAC and resolve the customer's problem. In cases where the problem requires escalation to NetEdge, the Product Support group will be the primary interface to NetEdge's Technical Support organization.

4.1.3 NetEdge Technical Support

NetEdge System's Technical Support group will be the Channel Partner's interface to receiving any and all technical product support from NetEdge. NetEdge's Technical Support group will be responsible for logging and tracking Channel Partner reported cases and product defects. NetEdge Technical Support will interface with other NetEdge organizations such as Hardware or Software Engineering and Operations on pertinent product support issues and be responsible for reporting the status of open cases back to the Channel Partner.

4.1.4 NetEdge Engineering

NetEdge Engineering will be responsible for implementing changes in hardware, software, or documentation to rectify identified product problems, defects, or deficiencies.

4.1.5 NetEdge Operations

NetEdge Operations will be responsible for isolating and reporting the root cause of all field hardware failures. In addition, NetEdge Operations will initiate any required corrective action measures that might contribute to improved product quality.

4.2 Support Tools

NetEdge primarily uses a few major support tools for facilitating the product support process.

4.2.1 Vantive Customer Service System

The Vantive Customer Service System is a Client/Server based relational database system used by NetEdge Technical Support, Engineering, and Operations to log and track customer requests. The system facilitates the entry, tracking and reporting of customer problems (Cases), product defects (PR's), and product returns (RMA's). The Vantive System is a software package comprised of a server component that currently resides on a SUN Sparc Station platform running the Oracle RDMS under a Solaris operating system. The Client software piece runs on either UNIX, PC, or

Macintosh platforms. The Vantive System is maintained and managed by the NetEdge Technical Support group at our headquarters facility in Research Triangle Park, NC, USA.

4.2.2 NetEdge Web Server

The NetEdge Web Server was designed by the NetEdge Technical Support group with the primary intent to facilitate product support by providing a vehicle for customer communications. The Web Server is managed and used extensively by NetEdge Technical Support to provide our customers and Channel Partners with up to date product information. The Web Server is used to provide an interface to information such as Technical Support Policies, Technical Notes, Software Release Notes, Engineering Change Orders, Field Reported Defects, Software Releases, MIBs, and Technology White Papers. Given the sensitivity of some of this data, various security levels have been established for access. The NetEdge Web Server currently resides on a SUN Sparc Station platform running SUN OS and the NCSA Web Server software. The Web Server is written to take advantage of the enhanced functionality of the Netscape browser software. The NetEdge Web Server can be found at <http://www.netedge.com>.

4.2.3 NetEdge ftp Server

The Technical Support group also maintains a secure ftp Server. The primary function of the ftp Server is to facilitate the direct file transfer of information or software to/from our customers or Channel Partners. In the case of our Channel Partners, separate login ID's and passwords are established for each new Channel Partner. These individual ftp accounts are established to ensure a level of security for the file transfer of information not only from, but to the ftp Server. Channel Partners can therefore transfer sensitive information to NetEdge without the fear of other Channel partners accessing the data. The NetEdge ftp Server software resides on the same hardware platform as the NetEdge Web Server. Thus, the host name of the ftp Server is also www.netedge.com.

4.3 Problem Resolution Process

4.3.1 Initial End User Contact

When a problem is identified with installed product, the End User will contact the Channel Partner's TAC and/or Product Support group via appropriate telephone numbers or email addresses. The TAC or Product Support group will log the call into the Channel Partner's Call Logging System and assign the call a report number and a severity or priority for the problem. If the Channel Partner's TAC can not

immediately resolve the problem, then the call should be routed to the Channel Partner's Product Support Group.

4.3.2 Channel Partner's Product Support Group

The Channel Partner's Product Support group will then start to work on the customer's problem. The Product Support group will work over the telephone, dial into the equipment via modem, reproduce the condition in a test lab, or go onsite in an attempt to determine the root cause and eventually resolve the customer's problem. If at any time during the troubleshooting process NetEdge assistance is required, the Channel Partner support engineer assigned will initiate a call to the NetEdge Technical Support Center toll-free number **1 (800) 638-2861 or 1 (800) NET-ATM1**. If the Channel Partner has contracted for 24x7 telephone support from NetEdge, a separate toll free number (**1 800 638-7079**) can be used to contact NetEdge outside of the hours of 8:00 am - 5:00 pm EST. NetEdge currently institutes an after hours paging system which rotates senior level Technical Support engineers through a week of on call duty. If the call is placed after hours, then the on call engineer will provide a call back within 20 minutes. The Product Support engineer can either seek general assistance or formally log a case on the customer's problem.

If the Product Support engineer is logging a formal problem report, then the following information must be provided to the NetEdge technical support engineer to open a case:

- a) Serial Number and Revision Level of the product Chassis and installed I/O Modules.
- b) Revision Level of the installed operational software.
- c) Clear description of the problem including relevant network diagrams, error messages, and configuration information. This includes the "default.cfg" configuration file.
- d) Any Channel Partner actions taken to this point.
- e) The Channel Partner defined Severity/Priority level, the original report date and the problem report number assigned.
- f) History of Channel Partner's efforts to reproduce the customer's problem.

The information can be given over the telephone, but NetEdge would prefer receiving the information by means of electronic mail to the address support@netedge.com.

The Channel Partner is required to formally log a case with NetEdge Technical Support on any unresolved customer problems within the following worst case guidelines:

NetEdge Severity 1	1 day
NetEdge Severity 2	2 days
NetEdge Severity 3	7 days
NetEdge Severity 4	14 days

4.3.3 NetEdge Technical Support

The notification to NetEdge can occur via a direct telephone call or via electronic mail. The available NetEdge Systems Technical Support Engineer will take the call and log the appropriate background information like contacts, serial numbers, configuration files and drawings, problem descriptions, etc. The Technical Support Engineer will then assign a Vantive Case ID as well as an agreed to severity for the Case. The Case ID should be used thereafter to reference and track this Case. The Case Severity is assigned according to the following criteria:

Severity 1. Critical Severity. The customer's production network is down and inoperable. All work has stopped and the situation is causing a critical impact to the customer's business operations. No workaround is available.

Severity 2. High Severity. The customers production network is severely limited or degraded. The situation is causing a significant impact to certain portions of the customer's business operations and productivity. No workaround is available.

Severity 3. Medium Severity. The customers production network is slightly limited or degraded. The situation has impaired network operations, but most business operations and user productivity continue. A workaround or alternate configuration is available.

Severity 4. Low Severity. The customers production network or user productivity are not affected. Customer calls in with informational inquiries, documentation issues, upgrade requests, requests for new feature/function, or requires additional information.

If the Technical Support Engineer can not provide an immediate resolution through the use of the Call Logging database, the Defect Tracking database, Technical Notes, Release Notes, etc, then the Case will be assigned to a NetEdge Systems Customer Engineer for analysis.

The Customer Engineer will analyze and research the Case with respect to known problems, anomalies, configuration errors, faulty hardware, user errors, or similar open Cases. If more information is required, the logged contact from the Channel Partner will be notified and additional, more detailed data on the problem will be requested. The Customer Engineer will adjust the Case severity after analysis if required. If the Customer Engineer can not resolve the problem or identify it as a known open problem, then problem reproduction will be attempted.

Customer Engineers will gather the necessary data required to as closely as possible reproduce the environment of the customer. Additional data from the customer may be required like traffic levels, frame types, protocols, etc; The Channel Partner will be asked to provide this data as quickly as possible. The Customer Engineer will then assess whether it is feasible to try to reproduce the problem in the Technical Support Lab.

If it is possible to attempt to reproduce the problem in the Technical Support Lab, then the assigned Customer Engineer will co-ordinate the creation of a test bed which resembles the customer configuration. The Customer Engineer will then conduct controlled testing and documentation of the units under test. If the problem can not be reproduced or it is not feasible to construct a representative test bed, then an on-site visit to the customer site may be required. If on-site support is deemed to be required, then the Customer Engineer will automatically escalate the Case to the Director of Technical Support for review. If the option of on-site support is reviewed and concurred then a site visit will be coordinated by the Customer Engineer and the Channel Partner.

When a Customer Engineer has successfully reproduced a problem in the Lab or on the customer site and concluded that a bonafide defect exists, the defect will be logged into the Vantive Defect Database.

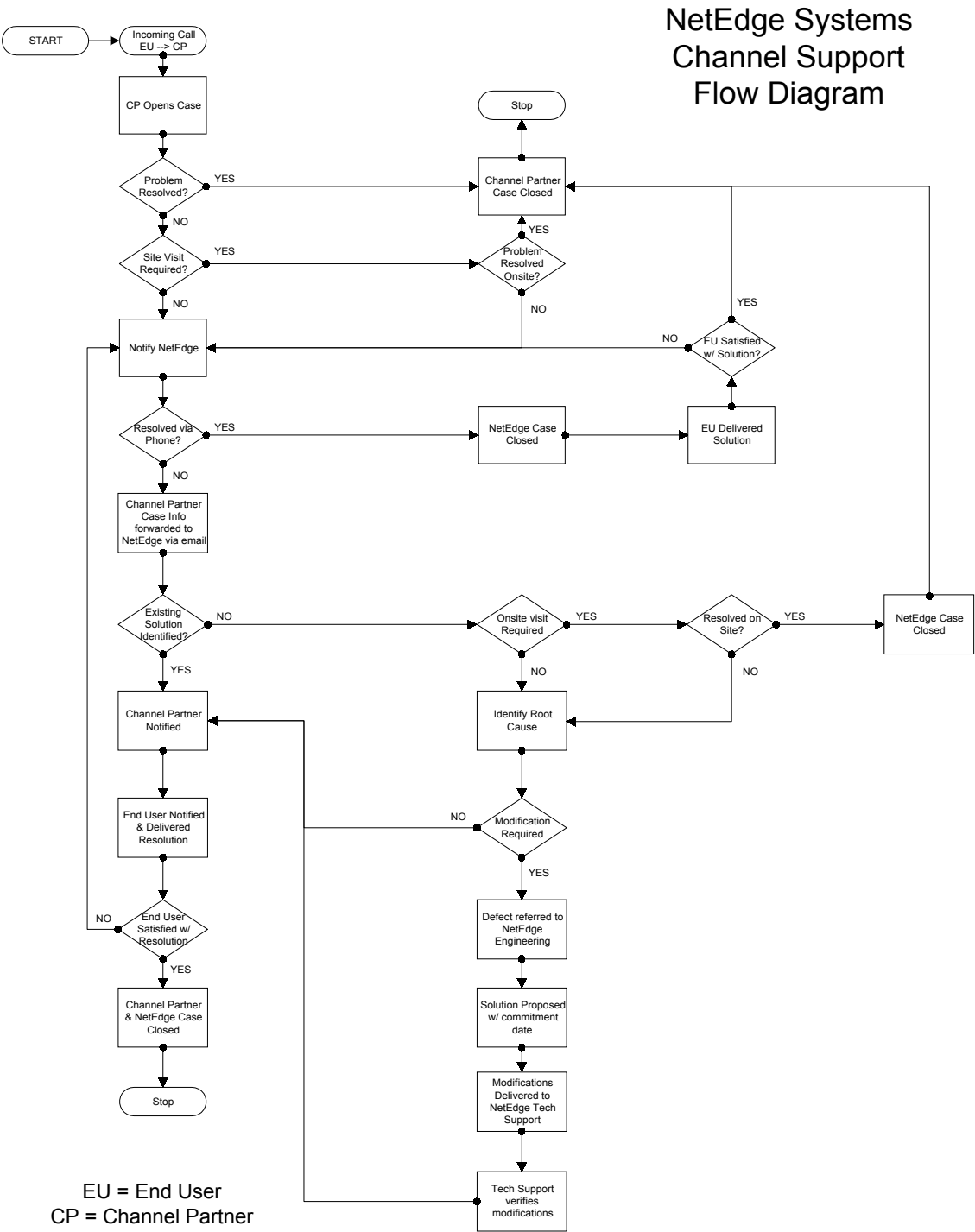
4.3.4 NetEdge Software Engineering

If the defect is a software related problem, then a target release will need to be identified for the fix. If a fix is relatively straight forward and does not introduce considerable risk to the stability of the software, it may be a candidate for a Spot Release. Otherwise, a future new feature or maintenance release will be identified for the fix to go into. NetEdge Software Engineering will evaluate the feasibility and risk involved in providing fixes to software defects and report their assessments to NetEdge Technical Support. If a Spot Release is feasible, then the Spot Release is created according to the NetEdge Spot Release Process.

4.3.5 NetEdge Hardware Engineering

If the defect is a hardware related problem, then the Director of Technical Support will coordinate with the Director of Hardware Engineering to identify a target date for the hardware fix. This date will then be communicated to the Channel Partner. The fix will result in an Engineering Change Order (ECO) that modifies the revision of the faulty module.

4.4 Problem Resolution Process Flowchart



5.0 PROBLEM ESCALATION PROCESS

NetEdge institutes a Case Escalation Process which helps to ensure that the appropriate personnel are notified of a Channel Partner or customer problem in a timely fashion and that resources can be allocated when and if necessary to bring closure to a given customer problem. The goal of the escalation process is to assist in returning a customer's network to an operational state as quickly as possible. Ultimately, the closure of the call to the customers satisfaction is desired. The NetEdge escalation process is defined for NetEdge Severity 1 and Severity 2 problems. The levels of escalation are defined from Level 0 to Level 4. The Escalation Process also includes notification mechanisms so that key NetEdge personnel receive advanced warning of critical and high severity customer problems before the Case goes through a formal escalation. The notification process occurs as a result of a preprogrammed business rules in the Vantive Call Tracking system and occur automatically within the system.

5.1 Level 0

Level 0 is considered to be the time of initial Case logging. When NetEdge receives a call or email from it's Channel Partner which results in the logging of a critical or high severity case, notifications are automatically sent via email to the Sales Account Team and Software Engineering Managers. No action is required at this time by those individuals. The early notification is to alert those individuals that NetEdge Technical Support has logged a critical or high severity case. The case is logged then assigned to a NetEdge Customer Engineer for analysis and resolution. If the resolution to a problem includes the advanced replacement of a hardware component, the escalation timer will be on temporary hold until the arrival of the replacement component.

5.2 Level 1

A Level 1 escalation will occur if the case is yet unresolved and has not been lowered in severity by the following time frames:

Severity 1 (Critical)	2 hours
Severity 2 (High)	4 hours

The Level 1 escalation gives visibility of the customer problem to the Customer Engineering Group Leader. The Customer Engineering Group Leader will add or re-assign the appropriate resources available to, at a minimum, assist in restoring the customer network to an operational state. Restoring the network to an operational state may result in a lowering of severity.

5.3 Level 2

A Level 2 escalation will occur if the case is yet unresolved and has not been lowered in severity by the following time frames:

Severity 1 (Critical)	4 hours
Severity 2 (High)	8 hours

The Level 2 escalation gives visibility of the customer problem to the Director of Technical Support. The Director of Technical support will review the case and add or re-assign the appropriate resources necessary to, at a minimum, assist in restoring the customer network to an operational state. The Director of Software Engineering and the Director of Hardware Engineering will at this time receive notification of the critical or high severity customer problem. Restoring the network to an operational state may result in a lowering of severity.

5.4 Level 3

A Level 3 escalation will occur if the case is yet unresolved and has not been lowered in severity by the following time frames:

Severity 1 (Critical)	8 hours
Severity 2 (High)	48 hours

The Level 3 escalation gives visibility of the customer problem to the Vice President of Operations. The Vice President of Operations will review the case and add or re-assign the appropriate resources necessary to, at a minimum, assist in restoring the customer network to an operational state. The Vice President of Engineering, the Vice President of Sales, and the Vice President of Marketing will at this time receive notification of the critical or high severity customer problem. Restoring the network to an operational state may result in a lowering of severity.

5.5 Level 4

A Level 4 escalation will occur if the case is yet unresolved and has not been lowered in severity by the following time frames:

Severity 1 (Critical)	24 hours
Severity 2 (High)	72 hours

The Level 4 escalation gives visibility of the customer problem to the President and CEO. At this time a crisis team is assembled. The Crisis Team consists of the Vice President of Operations or his designate, the Vice Presidents of Engineering or his designate, the Director of Technical Support or his designate, the Hardware and Software Engineering Directors or their designates and the appropriate Engineering and Technical Support personnel. It is the responsibility of this team to focus on the solution to the customers

problem. This team has the necessary visibility and authority to enable whatever resources are necessary to restore the customer's network to an operational state. Upon conclusion of the Crisis Team meeting, an immediate report will be made to the President and CEO describing the problem, the current status, and the action plan for resolution of the problem.

6.0 SOFTWARE RELEASE PROCESS

6.1 Software Release Numbering Conventions

The following description defines the current software release naming conventions. Each version of software will be identified with the numeric string

“w.x.y.z” where

- w = The Platform Identifier.
- x = Major Release Identifier.
- y = Maintenance Release Identifier.
- z = Spot Release Identifier.

Platform ID Indication of the hardware platform on which this software was designed for.

Major Release ID Indication of which Major Release of features and function are incorporated. A Major Release contains significant new features and undergoes beta testing at live customer sites before being released to Manufacturing for shipment via the standard Software Change Order process.

Maintenance Release ID Indication of which Maintenance Releases fixes have been incorporated. When the quantity and/or severity of the fixes warrant, a Maintenance Release incorporating all the fixes since the last Major/Maintenance Release will be created. Maintenance Releases are released to Manufacturing for shipment via the standard Software Change Order process.

Spot Release ID Indication of the specific fixes incorporated into the Spot Release. Spot Releases will be cumulative in content.

6.2 New Release Process

NetEdge has defined a four phase process to deliver a new major feature release of software to our customers. The four phases are defined below.

6.2.1 Functional Test Phase

The Functional Test Phase is entered upon occurrence of the following events:

- The Software development team has implemented and debugged one or more functions defined for the new release
- The Software development team has successfully completed acceptance criteria as defined in the System Test team's test plan
- The System Test team is ready with test cases and appropriate test equipment

Emphasis during this phase is to make sure that new function implemented by the Software Engineering development group works as defined in the functional specification. During this phase, positive and negative testing of the function will be verified. New function will also be tested with existing functions (regression testing) to make sure that new functions work correctly in conjunction with old functions. Any problems found during the functional testing phase will be reported using the Vantive Defect Database. NetEdge's System Test group will work with Engineering in identifying and fixing these problems. This phase will continue until all functions defined for the release have been implemented, tested, fixed, and verified. All critical and high severity defects must be resolved before this phase can be exited.

6.2.2 Alpha & Regression Test Phase

The Alpha & Regression Test Phase is entered upon occurrence of the following events:

- All functions as identified for the final release have been implemented by the Engineering development team
- All functions have gone through the Functional Test Phase
- All problems identified during the Functional Test Phase have been resolved and have been verified by the System Test team
- Software Source code is frozen except for integration of bug fixes
- Alpha level user documentation is available

During this phase, the System Test team will start regression testing as identified in the release test plan. Also during this phase, software can be made available to a few existing customers who are willing to test the release. The software is accepted by these customers with complete knowledge of its Alpha status. The System Test team will provide required software support to these customers during this phase. The number of Alpha test customers will be limited to no more than a few. All problems reported during this phase will be documented by

the System Test team into the Vantive Defect Database. This phase will continue until all regression testing and Alpha tests are completed, all reported problems have been fixed and verified, and the System Test team is ready to release the software to the next phase.

6.2.3 Beta Test Phase

The Beta Test Phase is entered upon occurrence of the following events:

- The Alpha & Regression test phase has been completed
- All reported problems during the Functional and Alpha & Regression test phases are fixed and verified
- The Development Engineering team has delivered a “Technology Transfer” training session to the Technical Support team on the new release features
- Beta Draft product documentation is ready

The beginning of this phase is also the end of the System Test teams release testing. The System Test team will have completed all tests as identified in the regression test plan and all critical and high severity problems have been resolved. Technical Support in conjunction with Marketing and Sales is responsible for identifying and organizing beta sites. Technical Support will distribute the software and documentation to those beta customers identified. Technical Support will also provide software support for beta customers. All problems reported by the beta customers will be entered by Technical Support into the Vantive Defect database.

Software released for the Beta Test phase will also start to be managed using the formal NetEdge software release numbering convention. Beta releases can be identified as having a “0” in the third integer of the release number. For example, 1.6.0 can be identified as a Beta release.

6.2.4 General Availability Phase

The General Availability Phase is entered upon occurrence of the following events:

- All Beta test participants have completed testing and submitted feedback
- Problems reported during the Functional, Alpha & Regression, and Beta phases are fixed and verified
- System Test has completed another round of regression tests if any significant changes were made to the software
- Product Documentation is complete and available for shipment

The first shipping version of a new major release will be designated as having a 1 in the third integer of the release number. For example, 1.6.1 can be identified as a new Generally Available release.

6.3 Alpha/Beta Qualification

Channel Partners may request to be participants in the Alpha and Beta phases of the release process, however, NetEdge reserves the right to accept or deny any requests based upon the Alpha and Beta test objectives for particular software releases.

6.4 Spot Releases

NetEdge Technical Support manages a set of software releases referred to as Spot Releases. Spot Releases are low risk, quick turnaround software fixes that development Engineering can create for Technical Support to address specific customer problems. The process for which Spot Releases are created are documented in the procedure referenced in Section 3.2

7.0 WARRANTIES, UPGRADES & RETURNS

7.1 Standard Warranties

The Standard Warranty period unless otherwise stated in the Channel Partner contract is 1 year on hardware and 90 days on software. NetEdge warrants to the Channel Partner that for the predated periods from the date of shipment from NetEdge, each item of Equipment purchased by Customer hereunder shall: (a) be free of defects in materials and workmanship, (b) conform substantially to the Specifications therefor in all material respects, and (c) be free and clear of all liens, encumbrances, restrictions and other claims against title or ownership. The foregoing warranty shall not apply with respect to any condition caused by non-NetEdge hardware or software, Equipment modifications or alterations not made or approved by NetEdge, operator error, or use of any Equipment not in accordance with the Documentation provided by NetEdge therefor.

7.2 Hardware Upgrades

All revision changes to hardware components are made via the Engineering Change Order process. This process defines the modification as having one of five effectivity codes. The effectivity code defines the impact of the changes being made. The five effectivity codes are:

- I - Change future orders
- II - Change all work in progress (WIP)
- III - Change all stock, WIP and customer returns

- IV - Change selected field sites, stock and WIP
- V - Change all field/stock units and WIP

NetEdge policy is to provide class V hardware upgrades at no charge to the Channel Partner for equipment that is under warranty. In addition, NetEdge Technical Support may authorize a no charge class IV upgrade for equipment that is under warranty. This decision will be based on the high probability of a Channel Partner logged case being resolved with the particular class IV upgrade. All other classes of upgrades for warranty equipment will be considered optional and billable to the Channel Partner at NetEdge's then current Depot Repair Schedule. All upgrades to out of warranty hardware will also be billable at the Depot Repair Schedule prices.

7.3 Software Upgrades

All New Feature, Maintenance, and Spot Releases of software will be made available to Channel Partners according to the Channel Partner's contract. All software releases will be made available via a download from the NetEdge Web Server. Notifications will be sent by email distribution whenever a New Feature or Maintenance Release is available for download. Spot Releases will be made available for download, but no formal notification will occur. Spot Releases will be fully documented on the Web Server so that Channel Partners may determine the issues addressed and download if necessary. Also available on the Web Server is a set of instructions for downloading the software as well as upgrading systems in the field. Units may be upgraded remotely by using ftp to download new software directly to the flash card. When the download is complete, the unit can be remotely reset and will come back online with the new software load. Each version of NetEdge software is an independent load that can be installed without requiring any incremental upgrades. For example, if a unit is running the Spot Release 1.5.5.2, it may be upgraded directly to 1.5.5.5 without concern for bypassing the 1.5.5.3 and 1.5.5.4 loads.

7.4 Return Procedures

Any hardware component that must be returned to NetEdge by the Channel Partner requires the assignment of a Returned Material Authorization (RMA) number for tracking purposes. The Channel Partner may initiate the RMA process by placing an initial call to NetEdge Technical Support. NetEdge Technical Support will proceed with a qualification process to confirm that a hardware return is required. Once qualified, the RMA Process is launched and followed as defined in further detail by the document referenced in section 3.3

7.5 Root Cause Analysis

All equipment coming back to NetEdge for either repair or replacement goes through an extensive series of diagnostic testing to determine the root cause for the failing hardware. All findings are fully documented for pareto analysis.

7.6 Corrective Action Measures

Through analysis and monitoring of trends certain corrective action measures may be introduced as needed to eliminate any further failures. These corrective action measures may be in the form of operational or procedural modifications to the assembly and test process in addition to placing necessary mandates upon our suppliers to modify their processes if required.

7.7 Reporting Analysis Data

Root Cause Analysis and Corrective Action information can be made available to the Channel Partner if requested. A regular reporting scheme can be negotiated with the Channel Partner. NetEdge will provide this information on a monthly basis unless negotiated otherwise.

8.0 PROACTIVE NOTIFICATION PROCESS

The Channel Partner will be added to all electronic mailing lists to automatically receive all Product Alerts and Digital Dispatches.

8.1 Product Alerts

A Product Alert will be written and distributed by NetEdge whenever a defect is discovered which will or may result in a service degradation or outage. The Product Alert will detail the nature of the problem, the applications affected, as well as any potential workarounds or alternative configurations. The Product Alerts will be distributed as needed by either electronic mail or paper fax. The Channel Partner must specify their preferred delivery mechanism.

8.2 Technical Notes

Technical Notes are produced by NetEdge to facilitate the communication of new technical information to Channel Partners and customers. Technical Notes may be written to cover such items as special product applications, configuration restrictions, implementation caveats, upgrade instructions, etc. The Technical Notes are made available via the NetEdge Web Server. The Channel Partner must specify whether alternate delivery mechanisms are required.

8.3 Digital Dispatches

Digital Dispatches are produced by NetEdge when significant changes or additions have taken place on the Web Server. The Digital Dispatch is sent via electronic mail and details

all significant changes or updates to the Web Server along with specific URL addresses where those changes can be found. This service is intended to address the need of consistently having to do periodic checks to the Web Server for any updates. It primarily is used to notify Channel Partners and customers of the availability of new software, changes to any product hardware, upgrade utilities or tools, and new Technical Notes.

8.4 Hardware Engineering Change Orders (ECO's)

Whenever product hardware changes are made, an ECO is created which documents the changes made and the effectivity of the ECO. The effectivity defines what impact the change will have to product in stock, product that is work in process, and product that is currently installed at customer sites. The effectivity will range from a class I ECO which only impacts future builds of the affected hardware to a class V ECO which is a full field upgrade to all installed units. The ECO's are all documented and made available to Channel Partners via the Web Server within 24 hours of the ECO approval by the NetEdge Change Control Board.

8.5 Software Spot Releases

All Spot Releases are documented on the Web Server within 24 hours of availability of the Spot Release. The documentation includes a description of the fixes addressed in the Spot Release, the defect tracking number of the problems resolved, the software availability date, and a description of all previous Spot Release fixes incorporated into the latest Spot Release.

9.0 PRODUCT DOCUMENTATION

9.1 User Manuals

The following documents are all provided with every shipment of NetEdge equipment unless specifically requested otherwise by the Channel Partner.

9.1.1 Product Introduction Guide

The Product Introduction Guide is a high level overview of the product's features and capabilities. It is intended to give the reader an introduction into how the product should be deployed and what types of applications it was intended for. The Product Introduction Guide will be useful for any reader who is not familiar with NetEdge equipment. The Guide also has some Marketing appeal.

9.1.2 Installation Guide

The Installation Guide is designed to provide procedures necessary to carry out the physical installation of the NetEdge equipment. It will cover issues such as unpacking, power requirement, size requirements, rack mounting, air flow, cabling, etc;

9.1.3 Configuration Guide

The Configuration Guide is used to provide a step by step description for enabling various features of the NetEdge product. It is intended for providing the reader with a quick reference for determining how to set the configurable parameters of the NetEdge equipment.

9.1.4 Reference Guide

The Reference Guide provides more in depth technical details about the NetEdge equipment. Whereas the Configuration Guide is intended for quick reference, the Reference manual is designed to provide more levels of detail about the NetEdge product features, configurable parameters, and technology concepts. The Reference Guide is arranged in a glossary form for the easy lookup of technical terms and concepts.

9.1.5 Release Notes

The Release Notes are intended to document changes or additions to the shipping product documentation. In addition, the Release Notes are also used to describe hardware/software compatibility requirements, new software features, bug fixes, and known caveats with the associated software release. The Release Notes change as needed. The latest version is also posted on the Web Server for download.

10.0 PARTNER QUALIFICATIONS

The success of a Channel Support relationship is dependent upon the Partner's capability of providing valued added service to the end users of NetEdge equipment. To help insure NetEdge that a Channel Partner is capable of delivering this added value, a set of Channel Partner qualification guidelines have been established. These guidelines can be used to evaluate both the Channel Partner and the Partner's commitment to supporting NetEdge product. Outlined below are the guidelines established for the Partner's support processes, support personnel, and resources.

10.1 Processes

10.1.1 Level 1 Support

Any Channel Partner we consider must have established processes and procedures for providing Level 1 Support that can be adopted to include NetEdge product. Level 1 Support should include the initial receipt of customer calls; the logging of customer, problem, and configuration information; and the solving of low level problems with the use of online tools, manuals, and databases. The primary objective of Level 1 Support should be to document the initial contact by the customer and resolve over the phone the category of calls classified as “repeat” cases. These calls will usually deal with configuration issues, common problems, or other issues with known resolutions or workarounds. Level 1 Support also has the responsibility for timely escalation of the problem to Level 2 Support if the problem can not be resolved

10.1.2 Level 2 Support

Level 2 Support should include receipt of the escalated case from Level 1 Support; continued dialog and data gathering with the customer via telephone, modem, or email; continued documentation of case activity; lab duplication of easily reproduceable problems; onsite visits; assessment of the business impact to the customer; and continued status updates to the customer. Level 2 Support also has the critical responsibility for timely escalation of problems to NetEdge Technical Support. Providing Level 2 Support should not be a mandatory requirement for Channel Partners. Each Channel Partner we consider should be evaluated in their ability to provide competent and effective Level 2 Support. The Channel Partner contract terms should reflect whether the Channel Partner must provide Level 2 Support or whether it will be provided by NetEdge.

10.1.3 Case Logging

If Channel Partners are not going to log cases into NetEdge’s Vantive System directly, then the Channel Partner must have an established Call Logging System. The Logging System must at least allow for the entry of basic information about a customer case like case numbers, case entered date, customer contact information, problem description, problem severity, and hardware and software revisions. The information for cases involving NetEdge product must be made accessible to NetEdge through either reporting mechanisms or direct access via the Internet or dial up facilities. The required Software needed for access to this Call Logging System must be provided by the Channel Partner for NetEdge’s Technical Support use.

10.1.4 Case Tracking

Channel Partners must have an existing problem escalation procedure that describes how customer problems are given visibility in their organization. The procedure

should describe when certain functional departments or individuals in the escalation path are notified and how they are notified. Additionally, the Channel Partner should describe how the procedure will be modified for use with NetEdge product problems. The description should include information on how and when NetEdge will be involved in the escalation process. NetEdge maintains its own Escalation policies which may or may not meet the requirements of the Channel Partner. The goal is to closely match the policies and negotiate differing points of the policies. The additional demands on NetEdge resources to meet the Channel Partners escalation requirements should be considered in the Channel Partner contract negotiations.

10.1.5 Case Reporting

If Channel Partners are not going to log cases into NetEdge's Vantive System directly, then the Channel Partner must have reporting mechanisms built into their Call Logging and Tracking System. The Reporting facility must minimally have the ability to produce summary reports on all NetEdge product problems logged. The Channel Partner should either produce these reports themselves and send them electronically to NetEdge in an agreeable format, or provide necessary software to NetEdge to produce these reports. These reports will be required from the Channel Partner on a weekly basis.

10.1.6 Defect Prioritization

The Channel Partner must appoint an individual within their organization who understands their customer base and is capable of assessing the impact of NetEdge product defects to their customers. This individual or prime contact will work directly with NetEdge's Technical Support Management to discuss and prioritize logged product defects. This individual will be key in helping to determine the order and priority of defect resolution with respect to problems at Channel Partner customer sites. This function is very important to NetEdge as certain periods of limited resource availability may not allow us to simultaneously work on all logged defects. We therefore need to prioritize and work on those defects whose resolutions are most important to our Channel Partner.

10.1.7 Field Sparing

Channel Partners must have processes and procedures in place for managing Field Sparing of NetEdge product. Channel Partners should be required to maintain their own inventory of spare equipment. This will allow them to react to their customer demands for immediate replacement equipment without the additional logistics brought about by NetEdge involvement. The Return Material Authorization (RMA) process for returning equipment to NetEdge could then be done in a less critical,

more cost effective manner. Secondly, it will give the Channel Partner the control over maintaining appropriate sparing levels as they see fit. Any deviation from this requirement upon the Channel Partner must be reflected in the Channel Partner contract.

10.2 Personnel

The success of our Channel Partner in supporting NetEdge product is to a certain degree dependent upon the Partner's ability to understand the technology, the product, customer requirements, and internetworking environments. A certain skill set is necessary to increase the chances of providing effective support for NetEdge product. These skills are considered to be a baseline for which additional NetEdge product training can be incorporated on top of. NetEdge can provide a list of third party training providers that can be used to help develop these skills.

10.2.1 LAN Technology

10.2.1.1 ATM

Support personnel should understand the concepts associated with provisioning and establishing virtual circuits through an ATM network. A fundamental understanding of the difference between PVC's and SVC's is needed. More importantly the various methods of encapsulating frames for transmission onto an ATM network must be understood. A thorough understanding of RFC 1483 and RFC 1577 will suffice.

10.2.1.2 Ethernet

Given that most NetEdge applications will involve Ethernet, a thorough working knowledge of this LAN technology is required. Support personnel should understand the different characteristics in Ethernet media types. More specifically, configuration restrictions and guidelines for 10Base2, 10Base5, 10BaseT, and 10BaseFL should be well understood. A working knowledge of the components used to build these various types of networks is also required. Additionally, the various encapsulation methods including frame formats should be understood and distinguished.

10.2.1.3 FDDI

If the Channel Partner plans to deploy FDDI applications then Support personnel should have a basic understanding of FDDI cabling and

connection standards which includes distinguishing FDDI A, B, M, and S connections. In addition the basic concepts of ring order and token rotation should be understood.

10.2.1.4 Token Ring

If the Channel Partner plans to deploy Token Ring applications then Support personnel should have an understanding of Token Ring frame encapsulation methods including Source Routing frame formats and Source Route Bridging. In addition, the concepts of Ring initialization, operation, and error recovery should be known.

10.2.2 LAN Internetworking

The concepts of LAN Internetworking are essential for Channel Partner Support personnel. A good understanding of Transparent/Translational Bridging is required as well as a working understanding of Source Route Bridging if Token Ring applications will be deployed. Personnel must be familiar with the concepts of bridge filtering, bridge forwarding, and the Spanning Tree Algorithm. If routing applications are deployed then Support personnel must be very familiar with IP and IPX routing including the operation of RIP, OSPF, and static routing.

10.3 Resources

10.3.1 Troubleshooting and Diagnostic Tools

To facilitate the exchange of information required during the problem resolution phase, NetEdge requires that similar troubleshooting and diagnostic tools are used by all Channel Partners. The Channel Partner is required to invest in the tools as specified and recommended by NetEdge. If the Channel Partner has established standards in place already for these types of diagnostic tools that do not match those vendors specified by NetEdge, then the Channel Partner has the option to supply NetEdge, upon approval of and at no cost to NetEdge, with the appropriate hardware/software required. The approved necessary (required) and optional (recommended) tools are outlined below.

10.3.1.1 Ethernet and Token Ring Protocol Analyzers

For those Channel Partners selling Ethernet and/or Token Ring applications, one of the following is required:

a) Network General Sniffer

- b) Wandell and Goltermann DA-30
- c) Novell's LANalyzer

10.3.1.2 FDDI Protocol Analyzers

For those Channel Partners selling FDDI applications one of the following is recommended:

- a) Wandell and Goltermann DA-30
- b) Tekelec Chameleon 100
- c) Network General Sniffer

10.3.1.3 Performance Analysis Tools

The recommended tool for performance measurement and analysis is the Wandell and Goltermann DA-30 platform running the IETF RTBench performance measurement software test suite.

10.3.1.4 Other

For those Channel Partners providing Level 2 support including onsite customer visits, appropriate tools should be provided to personnel conducting the site visit. NetEdge requires it's Channel Partners to equip their personnel doing site troubleshooting analysis with a Notebook PC. The PC should contain a LAN adapter, PCMCIA slots and a modem. In addition, a VT-100 compatible terminal emulation software package should be supplied. Procomm is the recommended choice for emulation software. Additional TCP/IP and IPX driver software is required to effectively use the LAN adapter and place the PC as a test station on the customer's network.

10.3.2 Lab Equipment

Any Channel Partner contractually obligated to provide Level 2 support must have the appropriate equipment to setup and replicate customer configurations. Customer networks can never be duplicated exactly, but the Channel Partner must commit to a minimum set of lab equipment to be used in the replication effort. NetEdge may request for a site inspection of the Channel Partner's replication lab if they deem necessary. The necessary equipment is summarized below.

10.3.2.1 ATM Connect units

The minimum set of NetEdge equipment required to be maintained in the Channel Partner's replication lab is as follows:

10.3.2.1.1 ATM Connect Units

A minimum of 3 units are required to be maintained or made available for use in the Channel Partner's replication lab. These units must contain the appropriate NVRAM licenses required to run the Channel Partner's supported applications (i.e. UNI 3.0, IPX routing, etc)

10.3.2.1.2 ATM I/O Modules

A minimum of 3 ATM I/O Modules are required to be maintained or made available for use in the Channel Partner's replication lab. Any combination of physical interface types will suffice, however, similar types eliminate the need for an ATM switch in most configurations.

10.3.2.1.3 Ethernet I/O Modules

A minimum of 3 Ethernet I/O Modules are required to be maintained or made available for use in the Channel Partner's replication lab. Any combination of physical interface types will suffice.

10.3.2.1.4 Token Ring I/O Modules

A minimum of 3 Token Ring I/O Modules are required to be maintained or made available for use in the Channel Partner's replication lab. Any combination of physical interface types will suffice. Channel Partner's can be exempted from this requirement if Token Ring is not a sold or supported interface type.

10.3.2.1.5 FDDI I/O Modules

A minimum of 3 FDDI I/O Modules are required to be maintained or made available for use in the Channel Partner's replication lab. Any combination of physical interface types will suffice. Channel Partner's can be

exempted from this requirement if FDDI is not a sold or supported interface type.

10.3.2.2 Other Equipment

Channel Partners must also have appropriate supporting equipment such as hubs, MAU's, concentrators, and cabling to build at least 3 networks of each supported LAN type. In addition, at least a pair of PC's is required for each LAN type supported. PC's may contain multiple LAN interfaces per system.

10.3.3 Internet Access

NetEdge leverages the Internet for facilitating communications to it's Channel Partners. The Internet is used as the communications vehicle for exchanging information about product features, deployment issues, case reports, etc; NetEdge views the Internet as a mandatory and necessary tool for providing technical support. Channel Partners are therefore required to maintain the following capabilities.

10.3.3.1 Web Browser

NetEdge has chosen the Web Server as a method for information distribution to it's OEM and Channel Partners. Therefore, Channel Partners are required to maintain an Internet Web Browser with forms capabilities. NetEdge's Web site takes advantage of the advanced capabilities of the Netscape browser software.

10.3.3.2 ftp File Transfer

All Channel Partners are required to maintain ftp file transfer capabilities. ftp is used extensively for software updates as well as information download and upload to and from NetEdge.

10.3.3.4 Email

All Channel Partners are required to maintain valid SMTP based Email addresses for the sending and receiving of electronic messages from and to NetEdge.

10.3.4 Dial Out Facilities

All ATM Connect units ship with an internal modem. Channel Partners are required to maintain a set of modem dial out capabilities for out of band access to these units deployed in the field. The minimum speed for these dial out capabilities should be 14,400 Kbps.

10.3.5 Equipment Exchange

If the Channel Partner is a manufacturer of ATM compatible equipment, then NetEdge reserves the right to request an equipment exchange with the Channel Partner. An equipment exchange is done to improve NetEdge's capabilities of providing Level 3 support to that particular Channel Partner. Having compatible equipment will help NetEdge in its troubleshooting and replication efforts. An equipment exchange will be done at the then current list price equivalents.

10.4 Other Qualification Requirements

10.4.1 NetEdge Certified Specialist

The Channel Partner must maintain at least 2 NetEdge Certified Specialist on staff at all times. Upon the signing of a new Channel Partner, a 90 day grace period is allowed so that the Channel Partner can work to comply with the Certified Specialist requirements. In addition, if one of the two Certified Specialist decides to leave the Channel Partners organization, the Channel Partner will have a 90 day period to complete the certification requirements for another candidate. The requirements for earning the NetEdge Certified Specialist designation are outlined below.

10.4.1.1 Certification Exam

Passing the NetEdge Certified Specialist exam is required. The computer based examination is designed to test skills obtained through a combination of NetEdge product training, on the job experience, and other self study materials and publications. NetEdge training is not a requirement for taking the exam, but is highly recommended.

10.4.1.2 Co-operative Education

After passing the certification exam, a candidate engineer must spend 1 full week in a hands on Co-operative Education session in the NetEdge Technical Support Center located in Research Triangle Park, NC, U.S.A. This session will provide the candidate with hands on troubleshooting experience and give the candidate exposure to senior level Technical Support and development Engineering personnel within NetEdge. In

addition, the candidate will become exposed to all support resources, tools, and processes deployed in the NetEdge Technical Support organization.

10.4.1.3 Recommended Preparation

The following are recommended for those considering qualification:

- 2+ years experience installing, configuring, and managing complex bridging and routing environments
- Experience with Packet and Protocol level problem diagnosis
- Experience with NetEdge products in a production environment
- NetEdge's Product Introduction Training Course
- NetEdge's Diagnostics & Troubleshooting Course

10.4.1.3 Continuing Education

Those individuals achieving the Certified Specialist designation must attend all Channel Partner Technology Transfer training sessions to maintain their status. These in depth technical sessions are conducted for every new major release to describe and discuss the functionality of the new features being released. The Technology Transfer sessions are usually 3 days and consist of both lecture and hands on lab presentations. These sessions are held at the NetEdge corporate headquarters in Research Triangle Park, NC, U.S.A.

10.4.3 Additional Requirements

Note that other additional qualification requirements will be added periodically. Channel Partners will be given a specific grace period to meet any new requirements.

Post-Sales Account Management Program



NorthPoint

*A Sales Program for Managing Service Maintenance
Performance with Partners*

Version 2.0
June 30, 2000
Systems Engineering



Post Sales Account Management Program

A Sales Program for Managing Service Maintenance Performance with Partners

Introduction

As we all know, the success of our business is very dependent on the delivery of quality customer service. As we have seen, the impact of customer service quality can be one of the key factors weighing into whether target Sales objectives are met with a particular partner. As a Sales organization we therefore need to be very cognizant of our partner's assessment of our Service Maintenance performance as it can severely impact meeting our sales performance goals.

Often times the measurement of "good customer service" can be fairly subjective. In fact a partners perception of your customer service is often times highly skewed by their last direct negative experience. This subjectivity is actually a prime opportunity for us to use our sales skills in influencing a partner's perception and skewing opinion positively in our favor. Clearly, actually having great customer service makes our job easier. Challenges do present themselves however. So managing a partner's perception of our service quality is a task that can be the difference in "making quota."

The Post Sale Account Management Program is being designed as a key sales tool to help the sales account teams more effectively manage their partner relationships. In the current environment of managing post sale maintenance issues this program can be used to identify areas of improvement for both the partner and NorthPoint. It can be used to quantifiably measure Service Maintenance performance and be a very powerful tool to reduce the range of subjectivity and help manage partner perception.

Program Benefits

The Post Sales Account Management Program is being created to supply a platform for having candid and meaningful exchange and discussions with partners about Service Maintenance performance. The program creates the forum for openness, ideas, and the building of trust and loyalty. Even the communication of less than optimal performance can be a situation that ultimately contributes to the longer-term sales objectives. Bad news is easier to deliver when it is packaged up with supporting facts and figures that gives the partner some confidence that we recognize the problem, understand it, and have an action plan to address it.

A significant goal of the program is to define the right set of performance metrics that can be collected, monitored, and shared on a periodic basis to determine any noticeable trends and how those trends may relate to key business objectives such as partner satisfaction, sales performance, end user satisfaction, customer service efficiency, scalability, etc.

Finally, through the building of trust and partnership, the program provides us with the chance to provide constructive criticism to our partners. We can explain to them how to help them help themselves. We can also share with them the positive and negative experiences we have gone through in working with other partners.

Partners that were asked to provide input saw tremendous value in this type of a communication from Northpoint. Most partners are willing to learn what they can improve so that ultimately the subscriber has the best experience and remains loyal to both our partner and to Northpoint.

Program Description

Again the program's intention is to provide the Sale's teams with another good quality opportunity to meet with partners and have meaningful productive discussion. These periodic "Performance Reviews" are the basic fundamental to the program. The idea is to establish regularly scheduled review meetings which include the account team as well as any appropriate NorthPoint Operations personnel if necessary to share and discuss performance data. The period can be monthly, quarterly, or semi-annually based on the discretion of the account team. The period will no doubt vary by partner.

The review meetings should be used to share the performance data that was collected in the previous period. We would identify trends and share our analysis with the partner. We would jointly discuss any significant gaps exposed by the data and then agree upon corrective actions and plans to address the gaps. The actions could be either NorthPoint actions or partner-required actions. The action plans would basically set the stage for focus areas that need to be addressed in the following period. The next review meeting would then be used to examine the period's metrics as they relate to the previously agreed upon plan. Ideally, the metrics would support our improvement efforts and gain us great credibility with the partner.

Secondarily, the hard data makes it much more difficult for the partner to make broad, sweeping statements which are often times difficult to refute because of the subjective nature of the comments. The numbers won't lie however, and the cold hard facts go a long way in managing partner perception. Conversely, if the data does show poor performance on our part, we will be forced as a company to deal with the issues at hand.

The key to the whole success of the program is of course the data collection and reporting capabilities. The desire is to create a standard presentation to deliver to our focus and target partners on a periodic basis. The account team will need to be able to go into OSS2000 or other specified data sources to gather standard reports for each metric then load the data into a template presentation format. The program requires that the reporting capability be predefined and readily available to the account team.

Prior to the review, the account team should meet to analyze and discuss the reports. If necessary, Operations personnel can be brought in to help with analysis and the identification of performance gaps. Together the account team and Operations should agree on the key messages and proposed action plans. They should discuss and agree on how to handle potential partner concerns. Based on the key messages and learnings from the analysis, the account team should determine whether Operations personnel are physically required, needed by teleconference or not necessary at all during the review with the partner.

Key Metrics

While access to the data is key, so is the actual data itself. To this end, the following metrics have been identified by partners as well as account teams as being important to providing an

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assessment of the Service Maintenance process. As time goes on we will learn more about our business as well as our partners and hence make adjustments and additions to how we track and measure performance in the company and in various internal departments. So, over time these metrics may change.

The remainder of this document is focused on defining the appropriate metrics. The following set of metrics are defined and should be packaged as the First Phase of the Post Sale Account Management Program.

Number of Trouble Tickets versus the customer base

In this metric we are trying to show the trend of the number of trouble tickets versus the entire account base. Will the percentage remain constant such that as the number of subscribers increase so to proportionally will the number of trouble tickets. This is key in managing a partner's perspective and expectations. If they feel that the number of trouble tickets continues to grow but they do not consider the size of their subscriber base then the partner will become disgruntled. However, if we can show a proportional relationship or better then we will continue to have an understanding partner.

We could also compare this to Northpoint's overall average. We would show the total number of trouble tickets that came into Northpoint versus our entire subscriber base. This would be interesting to see if the percentages are equivalent or if this partner is beating the overall average.

Trouble tickets by type

The idea here is to identify trends in trouble tickets so we can develop solutions to prevent the trouble ticket before it happens. If we can identify the top five reasons for trouble tickets then hopefully we can put programs in place to address these issues before they occur. We have already identified that 20% of one partner's trouble tickets are determined to be 'no fault found.' Yet we had to use valuable resources to make this determination. If we can educate our partners on doing a more thorough job before issuing a trouble ticket we can maximize the effectiveness of our technicians working on real issues. By being proactive we will ultimately increase partner satisfaction and subscriber satisfaction. Partner satisfaction will drive the meeting of sales performance.

Duration of trouble tickets

We would like to show a partner that the trouble tickets are addressed in a reasonable timeframe. We know the current perception is to wait on hold for an hour before the phone is actually answered by a human. Then the trouble ticket is either corrected right then and there or it is looked into. With PRC 2.0 the partner can issue trouble tickets electronically. There very well may become a perception that we take too long to address and resolve trouble tickets. This will cause an unsatisfied partner and unsatisfied subscribers. We will need to show the duration of trouble tickets to show that we are quickly solving issues.

We could also compare this to the overall average of open trouble tickets. This way the partner can see how their trouble tickets are being handled compared to the overall duration time of all partners.

Number of escalations vs trouble tickets or vs partner customer base

We have already shown the number of trouble tickets compared to the customer base. Now we need to show the number of trouble tickets that required escalation. We need to continue to compare this to the overall size of the customer base to keep the correct perspective. What we would hope to be able to show is that the number of actual escalations is very small in comparison to the overall size of the customer base and show that the number of escalations compared to trouble tickets is small as well.

It might be interesting to show the average number of escalations of all partners versus the number of escalations of this partner. This will show this partner and the account team if this partner cries wolf more frequently than other partners.

Trouble Ticket by severity

This metric shows the number of trouble tickets by severity. What we want to see is how many trouble tickets affect individual subscribers versus all subscribers from a single CO versus all subscribers in an MSA.

We should compare this partner's numbers to the average number of trouble tickets by severity for all partners. What we want to show is that their numbers are in line with all of our partners number of trouble tickets. We want to show that we are working with them equally as we do with other partners.

Total number of outage notifications by duration or type

How many notifications did the partner receive from Northpoint that where just 5minutes in duration, 1 hour in duration etc...When we have a lot of maintenance upgrades in a single month we send out notifications. Then we may have only one or two notifications for the next several months after that. However, the partner will only remember the one month that we had all of those maintenance notifications and their perception will be that we are always working on the network.

We could compare this partners numbers to the average number per partner. This way the partner will see that all partners experience the same number of notifications. Or it will show that we have a problem area and we need to look into it.

Number of outages by type. Service outages, unplanned outages within each MSA.

Provides the partner with a view of how well our network performs. It will also maintain there perspective if we do have some issue. Show the number of DSLAMs per market, the number of DS3's (or T1's) per market and the number of nodes per market.

Interconnection Utilization Report

This report should indicate average and peak utilization levels for all partner DS3 interconnections. This data can be used to determine if secondary DS3's may be required or

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whether utilization does not justify a physical interconnection and requirements may be satisfied via a Regional Connect solution. This data can also be used by our partners to establish over-subscription policies.

Subscriber Usage Reports

Generate reports that show that show lists of subscribers who average 70% utilization or higher as well as subscribers that utilize their link less than 10% of capacity. Some of our partners do not have the time or ability to determine this metric. If we can provide a spreadsheet showing the highest usage subscribers then the partner can go back to those subscribers and up sell their speed. Also, the partners are interested in seeing who isn't using the bandwidth to see if anything is wrong or to educate the subscriber.

Network latency Report

Partners would like for us to proactively present them data which indicates that we are meeting agreed to Service Level Agreements.

Network Packet Loss

Partners would like for us to proactively present them data which indicates that we are meeting agreed to Service Level Agreements.

Network Availability

Partners would like for us to proactively present them data which indicates that we are meeting agreed to Service Level Agreements.

Mean Call back times

The SSC originally set a parameter to call a partner back on a TT within 4 hours. Our partners realize today that this is not happening. As the SSC improves their performance it will be good to show the data to correct the perceptions quickly that the SSC is calling back within the 4 hours.

Mean Time to Dispatch

Track how long it takes NPC to open a TT with the ILEC when it is determined to be an ILEC issue. If it takes NPC a day to determine it is not within our network to correct an issue and we have to get the ILEC involved how long does it take to open the trouble ticket? There is a perception with our partners that we sometimes take several days to get the ILEC involved. To them, this is way too long and we will need to show exactly how long it takes from the time the trouble ticket is called in to NPC until the trouble ticket is opened with the ILEC.

Mean Time to Repair

This should be a standard report that measures the time from when a trouble ticket was opened to the point at which the issue was resolved. The measurement should be taken on all resolved tickets for a Partner in the measurement period regardless on whether those tickets are closed or still open. An overall MTTR for all Partners could also be shared to show whether the Partner numbers are in line with our overall averages or above/below the averages.

Ageing Report

This report should show the breakdown by age of tickets that are still not closed. The tickets would be broken into categories based on how long they have been opened. The Ageing report could show all unclosed tickets which have been open for 1) < 24 hrs, 2) 24 – 48 hrs, 3) 48 – 72 hrs, and 4) 72 – 96 hrs, and 5) > 96 hrs.

Ticket Open Source

This report could be used to identify through what mechanism new trouble tickets for the period have been opened. The data could be used to encourage the electronic methods like PRC or eConnect versus telephone calls or emails.

Call Queue Statistics

This data would show the partner the hold times, abandonment rate, talk time, call rate (dedicated partners), and other statistics relative to the technician queues taking calls from partners.

Root Cause Analysis Reports

This report would provide some analysis for all resolved tickets in the period. The root causes for the ticket issues based on the resolution could be broken out by type to show any possible trends or red flags.

Dispatch Effectiveness Reports

This report could be used to indicate the percentage of tickets requiring a dispatch in addition to measuring the effectiveness of ILEC and IW dispatches to resolve issues. Dispatches are costly and time consuming and need to be monitored to determine whether unnecessary dispatches are being done, issues are being mis-diagnosed, or initial troubleshooting is poor.

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Summary Conclusions

Sales account teams and partners both have commented positively about the merits of a Post Sales Account Management Program. The success of such a program is dependent on a couple of key issues. First, the data necessary must be all pre-defined, easily accessible and performance review presentations must be very easy to create for the sales team. Secondly, the account teams must make this program a part of their normal account management process and must put in the preparation time to give effective review presentations. Finally, the effective coordination, teamwork, and communications must exist between the Sales account teams and necessary Operations management. Operations involvement will be paramount, as root cause descriptions and corrective action commitments will require Operations support.

Rocky Rosas

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Summary

A proven professional with considerable technical and management skills as well as a track record of delivering results. Diversely skilled at Sales Engineering, Technical Marketing, Customer Support, Cross Functional Leadership, and Major Project Implementation.

EXPERIENCE

"Rocky started the Systems Engineering function, constructing a business plan that he executed well. As budget permitted, he hired to plan. Highly organized, his leadership style is to clearly state expectations and goals for his team, coach them along the way, and deliver results."

- Executive VP Sales, 2000

"Rocky is well informed and deals from a fact basis. I completely trust that he has researched the information he presents. The Systems Engineering group has learned that Rocky expects this."

- VP National Accounts, 2000

"Rocky is very organized and has a strong technical grounding. His experience in building and running Systems Engineering teams in the past has really helped him. He is not politically motivated and is a team player, which has ensured that many technical people really respect him."

- VP Engineering, 1999

8/01 - 4/02 HotProvisions, Inc. San Francisco, CA

Vice President, Technical Marketing

- Developed market analysis, business case, financial plans, and product strategy for an early stage technology startup focused on providing self installation tools and accessories to consumers of Wireless LAN, Powerline, HPN, xDSL, and Cable broadband services and home networking systems.
- Developed company strategy, product definition, and plans.
- Engaged in sales calls with potential ILEC, CLEC, and ISP channel partners as well as took part in financing activity with angel and venture capital investors.

1/99 – 3/01 NorthPoint Communications. San Francisco, CA (Acquired by AT&T)

4/00 – 3/01 Vice President, Systems Engineering

1/99 – 4/00 Director, Systems Engineering

- Hired prior to IPO and built a 25 person organization tasked with providing technical sales, planning, and implementation support to NorthPoint customers across 38 national markets.
- Provided significant sales support in the generation of 200+ trained and network connected ISP and CLEC channel partners, revenues of over \$25M / Quarter, and a DSL subscriber base of over 100,000+ in a two year time frame.
- Consulted, trained and provided technical support on DSL Access, Internet Access, Security Firewall, Virtual Private Network, and Voice over DSL services.
- Created and executed customer consulting and engagement models to successfully implement integrated OSS order management and trouble ticketing systems with our top 20 customers.
- Engaged in full life cycle product development efforts including customer requirements analysis, project management of beta/lab testing and trials, design and execution of user acceptance test plans, and ensured customer and sales organization readiness for new product rollouts.
- Developed and managed an implementation team to project manage the installation of over 650+ DS3 and T1 transport circuits for Frame Relay and ATM customer interconnections.

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EXPERIENCE

"Rocky has an excellent technical understanding of Internetworking gained through years of practical experience. He is viewed as a technical resource cross departmentally and often sought after for guidance and input."
- President/CEO, 1997

"In a post sales capacity, the group plays a critical role in quick and permanent solutions to improve the integrity of our product. Rocky has made substantial gain in helping the company recognize and commit to improving reliability and service-ability of our products."
- VP Operations, 1996

"Rocky has done an excellent job in starting, growing, and running the technical support group. Rocky is very knowledgeable and often is very objective in handling many high stress situations. He also is a team player and often strives to do the right thing for the company. Rocky is being promoted to Director of Technical Services for his tremendous achievements this past year."
- VP Engineering, 1995

Rocky Rosas

1/98 – 1/99 *Larscom, Incorporated. Research Triangle Park, NC*

Director of Applications Engineering

- Managed the sales Applications Engineering organization tasked with worldwide product introduction, field marketing, and sales support for Larscom's complete line of CSU/DSU, T3 multiplexer, T1 inverse mux, and ATM access concentrator products.
- Engaged in service provider account planning and management, technical presentations, competitive analysis, sales training, co-development of deployment strategies, and customer escalations.
- Interfaced with Product Marketing, Operations, and Engineering on new product and customer support requirements and cross-functional product development efforts.

12/93 - 12/97 *NetEdge Systems, Inc. Research Triangle Park, NC (Acquired by Larscom, Inc.)*

12/95 - 12/97 Director of Technical Services

12/93 - 12/95 Technical Support Manager

- Designed and established the Technical Services organization from ground up to provide phone and web-based technical support, product documentation, training, and customer care programs in the support of NetEdge's line of ATM Edge Routers and Access Concentrators.
- Developed all direct, channel, and OEM partner operational processes and system tools for trouble ticketing, problem escalation, warranty repair, and software distribution.
- Built a structured customer evaluation and trial process which resulted in a significantly higher sales conversion rate as well as greatly reducing the expense of demo equipment write-offs.

12/90 - 12/93 *FiberCom, Inc. Newport Beach, CA (Acquired by Litton Industries)*

Regional Sales Engineer, Western Region

- Provided pre-sales and post sales technical support to Federal and Enterprise customers for FiberCom's complete line of FDDI bridges and routers, SNMP based Network Management Software, Fiber Optic Ethernet Systems, IBM mainframe Channel Extenders, and other miscellaneous fiber optic data link systems.

(714) 891-6480 Home
(714) 642-4445 Mobile
Rocky_Rosas@hotmail.com

Rocky Rosas

EXPERIENCE

Rocky is very effective in the pre-sales role. He is extremely competent on all technical issues and is frequently sought after. He was very instrumental in closing the business at JICPAC. He involves himself in all phases of the selling cycle. Rocky did an excellent job at managing the August Interop show."

- VP of Sales, 1993

EDUCATION



AFFILIATIONS



- Developed sales account strategies as well as delivered technical presentations, training sessions, RFP responses, and seminars.
- Represented the company and supported all FDDI consortium vendor interoperability standards testing and verifications.

7/87 - 12/90 *Rockwell International. Seal Beach, CA.*

4/90 - 12/90 Data Network Analyst

2/89 - 4/90 Senior Programmer Analyst

7/87 - 2/89 Programmer Analyst

- Provided design and operational support for the cisco router based internal corporate wide area backbone.
- Constructed, managed, and administered company-wide IP and DECnet address space and top level Domain Name Services.
- Per NASA requirements, designed and implemented network infrastructure to support a new leading edge imaging system which made all Space Shuttle design documents and drawings accessible with one minute.
- Designed and installed several multivendor FDDI, Ethernet, Token Ring, and Appletalk Local Area Networks to support various multisite company programs including GPS Satellite Systems, Strategic Defense Initiatives, and Space Shuttle Design, Assembly, and Launch Support.
- Functioned as Data Center Manager responsible for system design, planning, performance, maintenance, and management of a DEC Local Area VAX Cluster used for office automation.

9/82 - 12/86 *Stanford University. Palo Alto, CA*

Bachelor of Science in Mathematical and Computational Sciences.

- Curriculum included Computer Science, Mathematics, Statistics, and Operations Research.

09/02 - Present *Cisco Certified Network Associate (CCNA).*

Cisco ID: CSC010538730.

9/02 – Present *Independent Agent for Cognigen Networks, Inc.*

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