

# Managing the i.t. infrastructure of neosphere outsourcing, inc.

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The technological revolution of the mid 90's particularly on information technology has played a great impact on almost every aspect of our daily lives. After two decades I. T. have become an everyday necessity that one may find it difficult to cope up with his daily routines without it. Technologies become a necessity which in turn leads to new ideas on how to further harness its powers which then leads to another technological innovation. This pattern opened up not only new frontiers in business opportunities but also opened up a new battleground for business to compete in terms of advancement.

Today, information drives businesses into success, and speed is the gauge. Neosphere Sourcing, Inc. makes sure that information is readily available round the clock to its clientele. Established in 1996, Neosphere is one of the inventors of Business Process Outsourcing (BPO) in the world. With our main headquarter in Cupertino and satellite offices in Sunnyvale, Santa Clara, San Jose and Mountain View in Silicon Valley, clientele are assured of round the clock and prompt response from our online and field responders on demand.

Presently, we have more than 500 employees, more than a third of which directly deals with customer concerns in ensuring that their business' technical needs are met. OPERATION End Users Systems The backbone of Neosphere's operation is technology. Our daily operation relies heavily on information exchange provided by a simple interconnected network of hardware and software resources. These include mobile and land phone devices and switches, data centers, network servers, a radio tower and repeaters, radiocommunication devices and various specialized software.

Remote technical service representatives service calls from customers requiring technical assistance. Each call is logged and given its respective ticket ID using our own proprietary software called Fineex. If the problem cannot be resolved through phone, a request ticket will then be routed to the satellite office nearest to the client for dispatch. Fineex selects from the pool of technical respondents based on schedule and specialization and assign them with a service vehicle appropriate to the type of service defined by the call agent. Technical respondents are provided with handheld radios and mobile phones upon deployment.

Alternatively, customers can log on to Fineex to post service requests and communicate with online technical agents. Management and Workforce Development and maintenance of the system used by Neosphere is directly under the management and supervision of the Chief Information Officer (CIO) who also functions as the I. T. Department Head. At the present, the I. T. Department is composed of 10 highly specialized technical crew as follows: Electronics and Communications Engineers (2), Network Engineers (3), Software Developers (2) and; Technical Support Crew (3).

The Electronics and Communications Engineers are responsible in creating and executing plans for phone hubs and automated digital switches used by Fineex in distributing phone traffic to CSR terminals. Additionally, ECE's are responsible in supervising the maintenance and reliability of all communication devices related resources of the company which include possible requisitions of additional resources as the need arises. Network Engineers perform almost identical responsibilities with ECE's on the

computer network side. The ECE's and Network Engineers work in collaboration in ensuring that both technologies meet at both ends.

On the other hand, software developers create, maintain and enhance various computer software and websites of Neosphere. Lastly, technical support staffs assist the ECE's and Network engineers in performing their duties. These include cable installations, setting up devices, installing software to the terminals and occasional maintenance tasks. The CIO leads the overall direction of the I. T. Department and makes sure that the team works toward the specific goals of the company on the technical end. ENTERPRISE SYSTEMS Neosphere's enterprise system is a mixture of telecommunication, internet and software technologies.

Telecommunication related technologies are the primary link between the company and its clientele, receiving hundreds of service requests on a daily basis, 24 hours a day. In addition, telecommunication enables intra-communication within the company to inform, relay instructions, to keep in touch with satellite office personnel and dispatch personnel including other minor tasks such as everyday fax transmissions. Telecommunication technologies the company utilizes include radio communication, land lines, mobile devices, fax machines and other communication related technologies.

Internet technologies ensure fast, flexible and affordable means of data communication inside and outside the company. Several systems used by Neosphere is internet dependent especially software systems used in managing service requests from customers, vehicle tracking through Global Positioning System (GPS), customer billing and payment, marketing and

resource management. Enterprise System Requirements Neosphere's system handling customer calls is composed of a system typically found in any call center offices.

This is composed of public switched telephone network (PSTN), long distance carrier (LDC), contact center server, Ethernet switch, routers and modem. Recently, the company is considering a system of utilizing Voice over Internet Protocol (VoIP) technology as a cheaper alternative to the existing system. In addition to this, the company also uses a typical local area network (LAN) connecting terminals and servers, automatic call distribution capable of distributing incoming calls to designated call agent terminals, interactive voice response, voice logging and such.

Neosphere has its own customer relations management software (CRM) as an integral part of the Fineex system. As mentioned earlier, Fineex handles customer service requests, work assignment, dispatch requests, and vehicle and personnel tracking. Together, these technologies comprise the technological infrastructure of Neosphere enabling the company to carry out its services to the customers and make the short and long-term goals of the company possible. SECURITY AND ASSURANCE DESIGN Survivability No earthly system is perfect and eternal and all are bound to fail.

Neosphere designed its system to be prepared in any case the system encountered difficulty that may hinder it to render its service to its clients. Failsafe measure such as data backups located in safe and independent location, auto-switching devices, redundant hardware and software, power generators and uninterrupted power supplies capable of running for hours in

case of power failures and rollback routines. Personnel are also made aware to expect these problems to occur anytime and trained on how to deal with them on a regular basis.

Server hardware are now also equipped with cases capable of withstanding tremendous amount of heat in case of fire. Virus attacks are not considered to be of a big threat as the company uses Linux based systems which is believed to be designed to make infection impossible. Privacy and Confidentiality Neosphere pays great attention in treating the privacy and confidentiality of its clients' personal and corporate information. Hard copies of contracts and correspondences between the company and clients are kept securely in document repositories located inside an isolated area together with other sensitive items in the Central Headquarter.

These repositories are accessible only by a few selected individuals and protected by digital locks equipped with standard biometric technology capable of acquiring fingerprint input and compares it with the fingerprints stored in 401 data files in the database server. Virtual Private Network (VPN) plays an integral part in protecting all information travelling in and out of the company's network. Routines that requiring data to travel outside the company's private network are protected by a 1024-bit secure socket layer (SSL) encryption that may only be deciphered on one side of the transacting agent.

This principle also applies to emails sent and received by users. Integrity The integrity of information obtained and kept by the system is also of great concern. Several measures are taken in order to ensure data integrity.

Starting from the software development stage, codes are reviewed by independent groups not directly associated with the developers. This is to prevent developers from accidentally or maliciously injecting codes that may allow unwarranted modification of information either programmatically or by manual means.

All software systems are built based on industry standards in terms of security and are protected by a login system that grants users certain privileges based on their access levels. Server rooms are restricted to authorized personnel which are also protected by biometric equipped locks. Availability Neosphere offers its services on a 24 hour basis, 7 days a week. This necessitates a system that is available at all times. Servers and all related peripherals and devices are required uninterrupted service.

All systems are redundant including server computers and storage devices that automatically switch to its backup system in case of failure and prevent denial of service. Additional failsafe measures include a power generator, uninterrupted power supply, RAID disks, disk images and software utilities that automatically create backups of stored information. Accountability The company makes all due effort to ensure that all transactions are safe from both sides. It is a responsibility of Neosphere to protect all information received and transmitted through their system.

It is also a responsibility of the Neosphere personnel particularly the responding technician to ensure that works rendered are performed within the acceptable range in terms of quality. On the other hand, customers have their fair share of responsibilities that is no longer covered by the service warranty.

These conditions include defective hardware, software or services not directly supplied by Neosphere, incorrect or incomplete service requests and unauthorized use of the system due to stolen login information.

It is a responsibility of the customer to make a complete description of the service required before finalizing the service request. Technical respondents are not allowed to render services beyond what is indicated in the service request. Lastly, it is a responsibility of the customer to pay the amount of the service on or before the due date indicated in the service invoice issued with respect to the service rendered. Reliability All systems are subject for routine checkup in order to ensure that they are running under normal condition. Routine checkup are done on an 8 hour basis 10 minutes before each shifts.

CSR's are provided with a checklist of simple test routines to check if all required software and hardware are running while technical support staffs performs a quick physical checkup of hardware and runs a simple utility to check for any anomalies in the system. In case of anomalies, support technicians are allowed to correct the problems and file an incident report for later review. Non-repudiation In order to ensure the authenticity of incoming service requests, customers are allowed to supply several phone numbers and email addresses authorized to place service orders in behalf of their company.

In case of service request via phone, caller ID is sufficient to verify the source of incoming calls while the login system built into the Fineex system protects against unwarranted orders. In addition, a confirmation email is sent



to the customer's registered email address for confirmation before any service request is approved for servicing and possible deployment of respondents to the site. Servers are setup with digital server certificates and all emails are digitally signed for authenticity. REFERENCES 1. Tutorial Reports. 25 March 2009.

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