AUTOMOTIVE NETWORK EXCHANGE

ANXeBusiness Corporation (ANX) is the company that owns and operates the Automotive Network Exchange (ANX), a large private extranet that connects automotive suppliers to automotive manufacturers. Since 2006, ANX has expanded into other areas and now provides managed security, compliance and connectivity solutions to businesses in the healthcare, retail and automotive sectors.

Automotive Network Exchange Overview

The **Automotive Network Exchange** is the private extranet initially set up and maintained by the Automotive Industry Action Group, Telcordia, General Motors, Ford and Chrysler. It was built as a private network for the auto industry in 1995 to provide consistent, reliable speed and guaranteed security for data transmissions between the automakers and their suppliers. The ANX Network allows trading partners to collaborate electronically on product design and development solicit and process orders and facilitate just-in-time manufacturing and post shipping schedules. In 1999 the Automotive Industry Action Group sold the ANX Network to the Science Applications International Corporation (SAIC). The overseer of the ANX Network became ANX. During the next six years, over 4,000 companies joined the ANX Network making it one of the largest extranets in the world. In 2006, the private equity firm One Equity Partners acquired ANXeBusiness from SAIC.

Business Drivers

The automotive industry is heavily dependent on collaboration between manufacturers and suppliers. These entities act as federated virtual companies for critical materials, parts, components and services. High velocity supply chains are imperative to the success of these virtual companies. They must be flexible to accommodate the needs of the virtual automotive manufacturer, enabling the formation of "many-to-many" relationships, where trading partners can simultaneously subscribe to multiple model programs or opt out as the situation dictates. The ANX Network was designed, built and operated to deliver highly secure collaboration between strategic business partners.

Technology Overview

The ANX Network is a secure private network that uses standard, open Internet protocols but carries all traffic over private lines leased from various carriers. Through IPsec and end-to-end encryption, the ANX Network provides secure service to its customers like that of a typical VPN. Where it's different from a typical VPN is that the routers that make up the network check every packet to make sure it comes from an IP address on the private network. Thus, nobody but customers can get into the network. Triple DES encryption protects a customer's data from the potential malicious behavior of another customer.
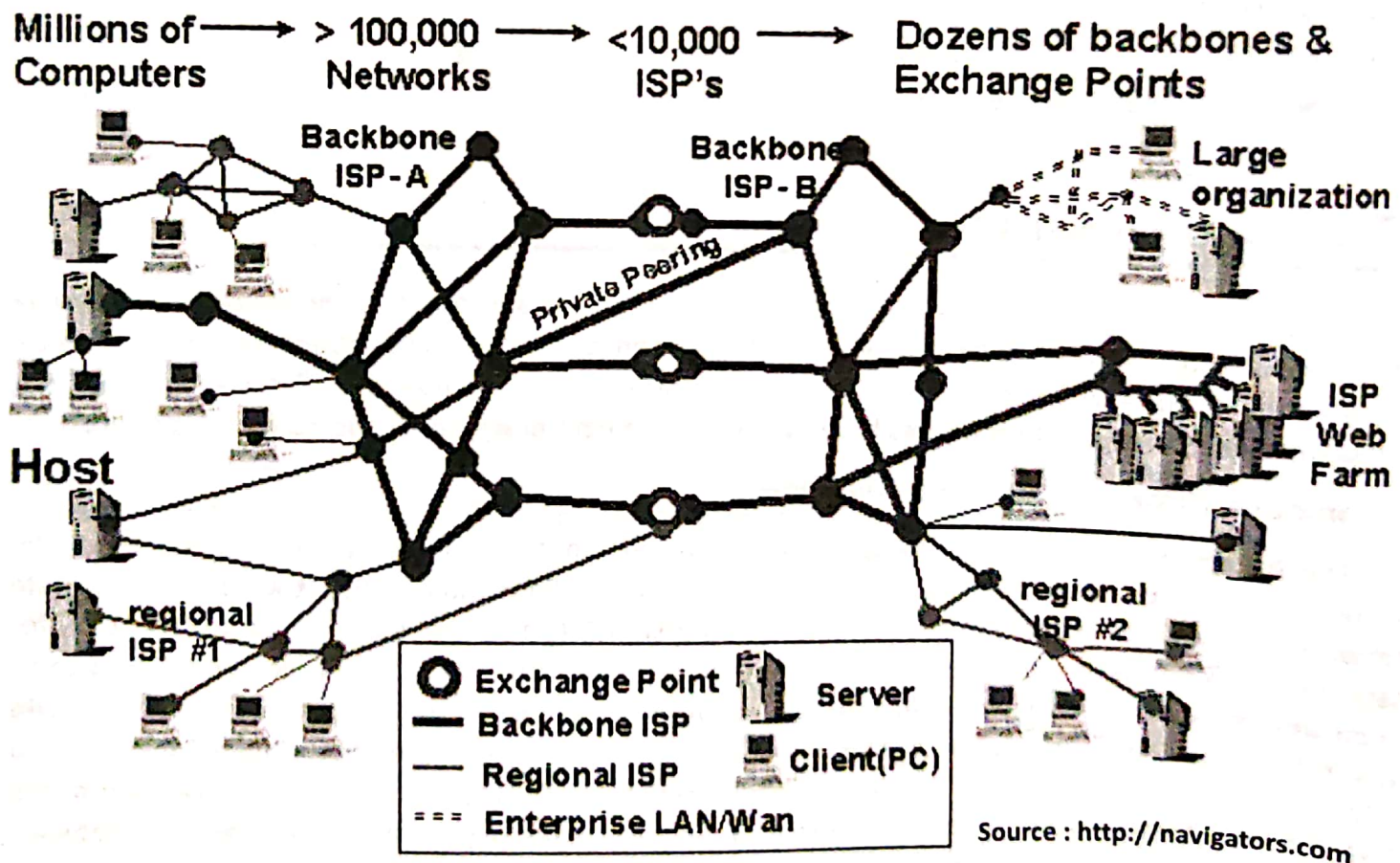
⌐Γ ARCHITECTURE OF THE INTERNET
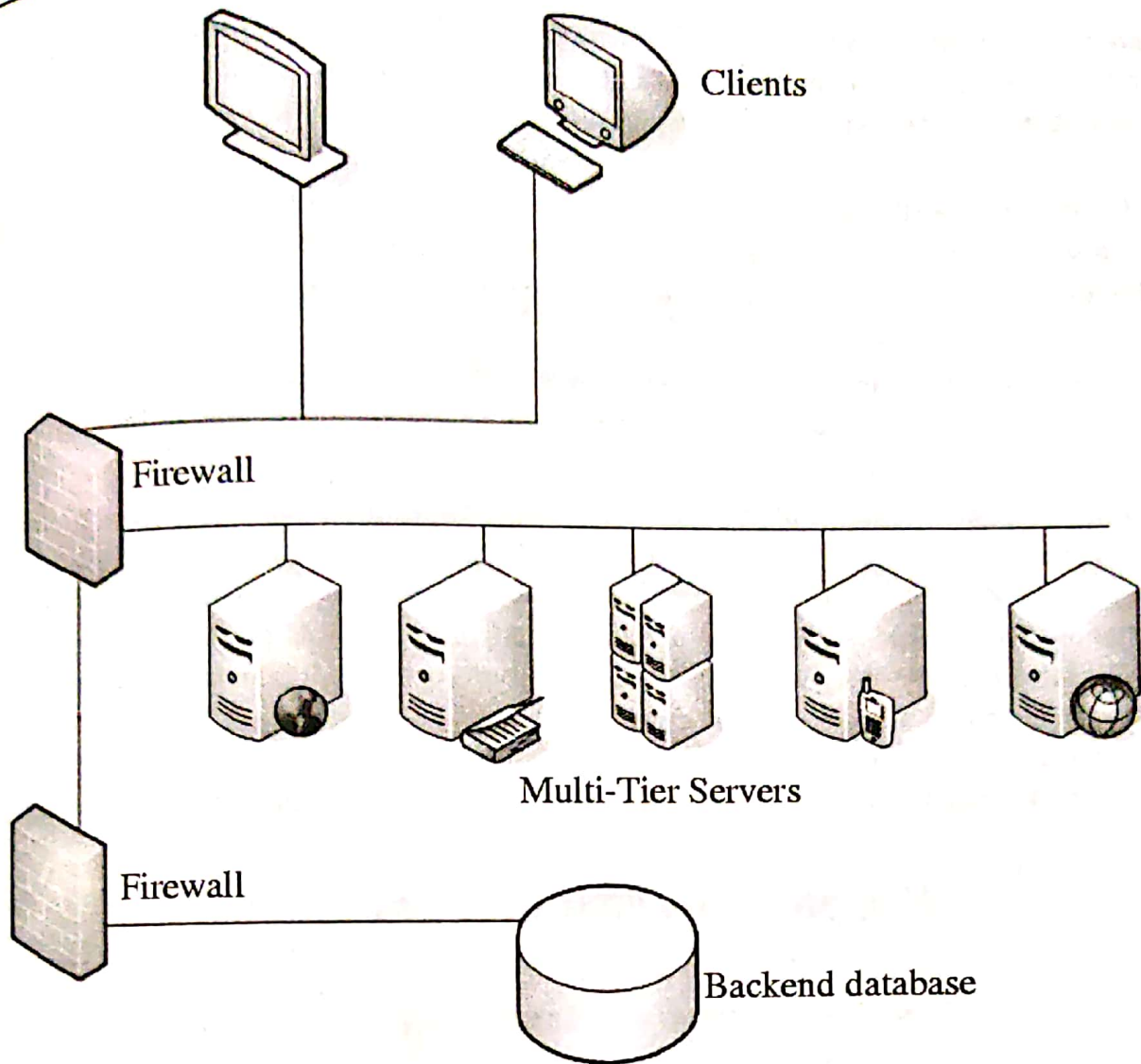

Fig. 1. Internet Information Flows over MANY Paths

Fig. 2. Architecture of the Internet (Source – http://navigators.com)

Applications of Intranets

Besides supplying infrastructure for Web applications by providing a natural developmental and staging area for these applications, intranets have become so useful that they are now generally recognized as being necessary even if the organization has no need for Internet applications.

1. Document publication applications : The first application that always comes to mind for intranets in and of themselves is the publication and distribution of documents. This application allows for paperless publication of any business information that is needed for internal employees or external customers or suppliers. Any type of document may be published on an intranet policy and procedure manuals, employee benefits, software user guides, online help, training manuals, vacancy announcements the list goes on to include any company documentation.

2. Electronic resources applications : In the past it has not been easy to share electronic resources across network nodes. Employees have had problems sharing information for various reasons including software version inaccuracies and incompatibilities. Intranets provide the means to catalog resources online for easy deployment across the network to any authorized user with the click of a mouse. Software applications, templates and tools are easily downloaded to any machine on the network.

3. Interactive communication applications : Two-way communications and collaboration on projects, papers and topics of interest become easy across the intranet. Types of communications that are enhanced and facilitated include e-mail, group document review and use of groupware for developing new products.

4. Support for Internet applications : Even though organizational full-service intranets are the next step in enterprise-wide computing and have enough value to make them desirable simply for the organizational benefits they bring, they are also necessary for supporting any Internet applications that are built.

The transactional processes and trading of information that will be done by all but the most elementary Web applications will require an infrastructure to store, move and make use of the information that is traded. The infrastructure to accomplish those tasks is the organizational intranet.

The development and maintenance of the Internet application requires that the organization has a developmental environment and the means to test the applications prior to placing them on the Internet. This requires an intranet that mirrors the functionality of the Internet. The infrastructure also requires that the Internet application be easily updated and maintained by the staff that has the responsibility for the application. The infrastructure becomes even more important until the Middleware to easily manage Internet applications becomes available. Because both intranet and Web application tools are still missing, maintenance on Internet applications will remain labor intensive for the next 18-24 months. This requires an infrastructure that allows easy access and manipulation by these labor-intensive processes.
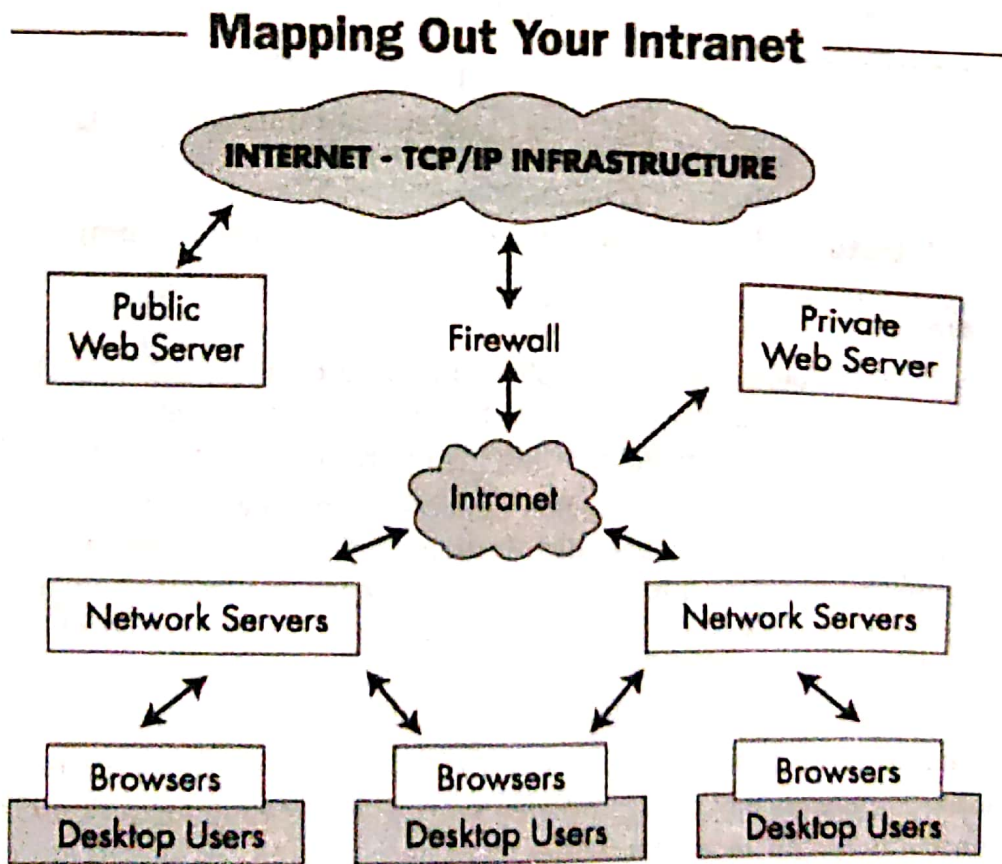
Mapping Out Your Intranet

Fig. 3. Internet – TCP/IP Infrastructure