



Chapter X

Increasing Business Value of Communications Infrastructure: The Case of Internet-Based Virtual Private Networks

Bongsik Shin
San Diego State University, USA

Daniel C. Kinsella, Jr.
Deloitte & Touch LLP, USA

An Internet-based Virtual Private Network (IVPN) is a system and service that enables secure communication within a controlled user group across the Internet public infrastructure. For the last few years, the Internet-based VPN has been available, providing organizational use for meaningful applications. The paper empirically investigates the value of IVPNs in managing communications among distributed business entities. For this, we conducted two case studies based on the information gathered from two companies. Then, a general decision model of the IVPN is proposed, which could be used for the assessment of its strategic value as well as for the design of virtual telecommunication networks at other organizations.

INTRODUCTION

In today's information age, companies are realizing that in order to retain a competitive advantage, they must capitalize on advanced data communication capabilities. Efficient, reliable, and secure communications among business partners, suppliers, customers, and investors are vital for a company to obtain increased productivity and business competency. Rapid increase in virtual processing at business organizations further highlights the importance of quality communication networks (Chesbrough & Teece, 1996; Davenport & Pearlson, 1998; Davidow & Malone, 1992).

The spread of virtual processing is taking place in both intra- and interorganizational relationships as a measure to remain competitive and resilient in the marketplace. Omnipresence of virtual offices (i.e., telework, mobile work), diffusion of distributed enterprise resource planning and work-flow management, and the emergence of network corporation represent intraorganizational virtual processes. Electronic data interchange (EDI), extranets, and integrated supply-chain/procurement management represent interorganizational virtual process. Maintaining a communication network that effectively connects virtual components becomes a key business success factor.

In order to conduct high quality communications and virtual process management, many businesses have traditionally purchased or leased private lines between the company headquarters and their branches. Others utilize conventional dial-up resources to maintain connectivity and/or remote access both within the United States and overseas. As a third alternative, businesses increasingly use the Internet for communications, marketing, and for conducting transactions with customers and suppliers. Nonetheless, one of the main obstacles that prevents companies from jumping onboard the Internet is a lack of confidence in the security and quality of transmissions. Considering that the Internet is the largest Wide Area Network (WAN) in the known universe, and that secure and stable network capability is critical for business transactions, technologies have been developed to improve the integrity of data transmissions over the Internet. This is known as the Internet-based Virtual Private Network (IVPN). It is a system and service that enables secure communication within a controlled user group, across the Internet.

The paper investigates the business value of IVPNs on organizational communication. First, we review existing literature to discuss primary technical issues and potential business benefits and risks of the technology. Second, two case studies are conducted to illustrate implications in managing communications among distributed business entities. Information was gathered from two companies through interviews and the review of documentation. Lastly, we present a decision model of the IVPN, which could be used for the assessment of its strategic value and for the design of virtual telecommunication networks in organizations.

14 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/increasing-business-value-communications-infrastructure/7202

Related Content

Business IT Systems Implementation

Calin Gurau (2010). *Business Information Systems: Concepts, Methodologies, Tools and Applications* (pp. 1234-1242).

www.irma-international.org/chapter/business-systems-implementation/44135

A Simple and Efficient Algorithm for Solving Type-1 Intuitionistic Fuzzy Solid Transportation Problems

P. Senthil Kumar (2018). *International Journal of Operations Research and Information Systems* (pp. 90-122).

www.irma-international.org/article/a-simple-and-efficient-algorithm-for-solving-type-1-intuitionistic-fuzzy-solid-transportation-problems/206246

Engineering Management: The Evolution, Conceptual Model, and Social Responsibility of an Emerging Discipline

Jean C. Essila (2018). *International Journal of Operations Research and Information Systems* (pp. 36-50).

www.irma-international.org/article/engineering-management/212675

Perishable Inventory System with Server Interruptions, Multiple Server Vacations, and N Policy

K. Jeganathan, N. Anbazhagan and B. Vigneshwaran (2015). *International Journal of Operations Research and Information Systems* (pp. 32-52).

www.irma-international.org/article/perishable-inventory-system-with-server-interruptions-multiple-server-vacations-and-n-policy/125661

Local Perturbation Analysis of Linear Programming with Functional Relation Among Parameters

Payam Hanafizadeh, Abolfazl Ghaemi and Madjid Tavana (2013). *Optimizing, Innovating, and Capitalizing on Information Systems for Operations* (pp. 1-24).

www.irma-international.org/chapter/local-perturbation-analysis-linear-programming/74009