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Transborder Data Flow Issues And Their Impact On Multinational Companies

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Abstract

Today, companies experiencing transborder data flow are faced with obstacles that limit the free flow of information. This prevents companies from taking full advantage of international markets. Some of these obstacles include connectivity problems, security issues, language problems, the price structure of communication services, trade barriers, and, most importantly, transborder data flow restrictions applied by different countries. Multinational companies can minimize the negative effects of these obstacles if they can adjust their organizational decision making structures and information systems architectures based on the obstacles they face, and encourage the standardization of systems networking.

Introduction

In their interactions with affiliates, customers, and others over national borders, multinational companies (MNCs) experience substantial data exchange. Data exchange, formally called transborder data flow (TDF), has become a critical element of global business. Networks once used as means to improve efficiency are now seen as strategic weapons to acquire sustained competitive advantage in global markets (Saraswat & Gorgone, 1993).

Today, companies experiencing TDF face obstacles limiting the free flow of information that prevent them from taking full advantage of international markets. Some of these obstacles are connectivity problems, security issues, language problems, the price structure of communication services, trade barriers, and TDF restrictions applied by different countries (Saraswat & Gorgone, 1993). MNCs can minimize the negative effects of these obstacles if they can adjust their organizational decision making structures and IS architectures based on the obstacles they face, and encourage the standardization of networking.

This study describes TDF issues, examines the effects of TDF restrictions on MNCs having different organizational and IS structures, and presents measures to be taken in order to minimize the negative impact.

TDF Issues

First, we discuss issues with connectivity, security, language, the price structure of communication services,

trade barriers, and TDF restrictions in order to understand the impact of these TDF issues on MNCs.

Connectivity Issues

Connectivity issues arise from incompatibility of standards. Saraswat & Gorgone define the issues as “lack of system integration because of incompatible hardware, equipment obsolescence because of changing standards, the need for complex software to make the hardware compatible, and increasing network complexity and management problems” (1993, p. 49).

Oz says connectivity to the Internet is still a problem in some countries. For example, in Africa, only four countries have full connectivity to the Internet. Zaire, Sudan, and other countries have no Internet connectivity. Similarly, in Asia, countries like Syria, Vietnam, North Korea, and Iran do not have Internet access (1996, p. 210).

Security Issues

According to Saraswat & Gorgone, “the increasing complexity of network technology, the sophistication of attackers, and the presence of a large number of vulnerable points” made data security a more serious issue than it has ever been. Since standard network security techniques like Data Encryption Standard do not seem to work well, companies use proprietary techniques, which in turn add a great deal to the cost of TDF.

Language Problems

The main language problem associated with TDF is said to be the existence of different alphabets with different letters all around the world. This problem seems to be exacerbated when translating data scripts from Chinese, Japanese, or Arabic writing systems, for example, to Latin (Oz, 1996).

Price Structure of Communication Services

The primary price-related issues of TDF arise from the government monopoly of telecommunication services in most countries around the world. They adopt cross-subsidization policies that enable them to charge higher rates to businesses for telecommunication services, and use that revenue to subsidize specialized data communication services (Saraswat & Gorgone, 1993). TDF suffers considerably from these discriminatory rates.

Trade Barriers

“Excessive tariffs, restrictive quotas, high excise taxes, quality of computer and telecommunication products” are some of the trade barriers mentioned by Saraswat & Gorgone (1993, p. 50). Lai & Floyd, however, see them as part of the TDF restrictions rather than trade barriers (1998, p.124), and so does Oz (1996, p. 213). Lai & Floyd add that the main problem is the host countries’ (i.e., Brazil, Ireland, Canada, and Germany) requirements concerning IT equipment and software. These countries say that domestically used hardware and software must be domestically produced. This requirement leads to utilization of low quality and high cost equipment most of the time, which inevitably leads to higher costs for TDF (1998, p. 124).

TDF Restrictions

TDF restrictions applied by different countries have three main branches: political track restrictions, which concern the flow of information pertaining to national resources, economic development plans, government operations, and national security; privacy track restrictions, which concern the transmittal of personal data and the creation of corporate databases of competitor information; and economic track restrictions, which concern the flow of information that might impede a country’s social development and economic growth. (Lai & Floyd, 1998, p. 122).

Lai & Floyd say some countries do not even allow the data to leave the country unless the country to which the data are transferred has equivalent privacy laws. Others require that all TDF carried out by MNCs is approved by “government recognized security officers” (1998, pp. 121-122).

IS Costs

Lai & Floyd 's study shows that TDF restrictions increase IS costs significantly. These costs include hardware costs, software costs, data processing costs, and management costs (Lai & Floyd, 1998). Among these, data processing costs come in first place with dramatic increases as a result of TDF issues.

The Impact of TDF Restrictions on Different Industry Types and IS Structures

In order to understand the impact of TDF restrictions on MNCs, it is critical to look at industry type and IS structure, since industry type and IS structure act as antecedents to IS costs.

Industry Type

There are conflicting theories in the literature about the impact of TDF restrictions on service and manufacturing industries. One group claims that TDF restrictions have a greater impact on MNCs operating in service industries, since they depend more on international information. Another group says manufacturing MNCs have more direct foreign investment, so they feel the impact of TDF restrictions more. On the other hand, some see no difference in the level of impact at all (Lai & Floyd, 1998, p.129).

IS Structure

As with industry type, there are conflicting theories as to whether IS structure influences the impact of TDF restrictions. Some say that decentralized systems can handle TDF restrictions better than centralized or distributed ones. Others, however, say centralized systems are more effective due to global efficiency and economies of scale. Some defend distributed systems on the basis of lower operating costs, improved data integrity, increased reliability, resource sharing capability, and ability to foster quicker response time (Lai & Floyd, 1998, p. 125).

According to Lai & Floyd's study, TDF restrictions do not have unequal influence for different IS structures (1998, p. 130). On the other hand, they strongly impact IS decision making at "strategic, tactical, operational, and overall decision levels" (Lai & Floyd, 1998, p. 132).

Conclusion

Management should thoroughly examine TDF restrictions in the countries with which the MNC is doing business. In this way, problems arising from regulation violations can be minimized (Saraswat and Gorgone, 1993). Also, adopting new communication technologies can decrease networking costs (Saraswat and Gorgone, 1993). Allowing local managers to make decisions about TDF in each host country may enable MNCs to deal with the restrictions more effectively (Saraswat and Gorgone, 1993). For trade barriers, having subsidiaries in countries with liberal telecommunication policies would help MNCs a great deal in TDF (Saraswat and Gorgone, 1993).

To sum up, it is possible for MNCs to get the best results in terms of overcoming TDF problems by adjusting the organizational and IS structures according to the TDF environment with a thorough understanding of TDF issues. MNCs should also encourage network standardization by working with vendors and standards organizations worldwide to expedite the international standard setting process.

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