Information System Activities in Transnational Corporations: A Comparison of U.S. and Non-U.S. Subsidiaries

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This study investigates the structure of IS activities in U.S. and non-U.S. subsidiaries of transnational corporations. Specifically, activities in the areas of operations, systems development, and planning/control were examined to determine how responsibility for these activities was shared among the parent and subsidiaries. This research seeks to establish whether parent companies treat their U.S. and non-U.S. subsidiaries differently and, if so, in what manner. The Transnational Information System (TIS) model was developed to provide a framework for this study.

A transnational corporation is an open system, composed of interrelated parts, interacting with a diverse environment. The characteristics of an organization are affected by, but not limited to, the characteristics of its subsidiaries. Because of diverse environments, complex organizations may suffer from suboptimization, or “sector improvement” of one or more systems within the total system. Although suboptimization may be beneficial to the sector, it may also be detrimental to the system as a whole [van Gigch 1991]. When a company operates in a transnational environment, complexity and the likelihood of suboptimization increase.

The impact of globalization on IS management is one of the most important research areas in the study of transnational IS [Palvia 1993]. The purpose of this research was to examine the structure of IS activities within subsidiaries of transnational corporations. Information systems (IS) activities, those tasks associated with acquiring, deploying, and managing information technologies [Zmud 1984], are often the primary linkages between subsidiaries and the parent corporation. Our goal was to examine these activities in both U.S. and non-U.S. subsidiaries to determine the differences and similarities. This was a descriptive study, conducted in an effort to identify issues in the early stages of international IS research.

The research was focused on three major areas: IS activities, organizational structure, and the environment of the subsidiaries. Primary research questions include the following:

- What is the relationship between organizational structure and the structure of IS activities?
- How does the structure of IS activities differ between U.S. and non-U.S. subsidiaries?
- How does the external environment affect the structure of IS activities?

TIS Model

The Transnational Information System (TIS) model, shown in Figure 1, was developed to provide a framework for this study. The model shows that IS activities can be impacted (indicated by V-shaped arrows) by the
organizational structure of the company and/or by the environment in which the subunit operates. These three components are explained below.

**Organizational Structure**

Organizational structure is the infrastructure by which the objectives of an organization are attained. It has been demonstrated convincingly [Ein-Dor and Segev 1978, Mason and Mitroff 1973, Liefer 1988, Olson and Chervany 1980], that there is a relationship between IS activities and organizational structure in uninational companies. More recently, research in the transnational realm reveals similar results [Roche 1992, Chismar and Chidambaram 1992]. For these reasons, organizational structure is a major component of the TIS model.

The study of organizational structure and strategy of transnational corporations is built on the broader field of business policy and strategy, which, in turn, is built on the foundation of a number of academic disciplines, including operations research, economics, finance theory, and organizational theory [Ghoshal 1987]. Since Chandler’s [1962] seminal work, which showed that structure follows strategy, many researchers have investigated that relationship [Bartlett and Ghoshal 1989, Egelhoff 1988, Stopford and Wells 1972]. Bartlett and Ghoshal [1989] stressed the role of the subsidiaries within the transnational corporation. In their normative model, they described roles for the subsidiaries within the structures that they stipulated.

Galbraith [1973] and Katz and Kahn [1966] view the organization as a communications and information processing system. Egelhoff [1991], building on previous work, described the relationship between structure and strategy in terms of information processing. He determined that different strategies have certain information processing requirements, and various structures have their own specialized information processing capacities. A good fit between structure and strategy demands that the structure have processing capabilities which match the information processing requirements of the strategies employed by the organization.

A key premise in Egelhoff’s information processing model of organizational design is that the organization will try to close the information gap (or uncertainty) by processing information. That is, there is a relationship

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![Figure 1: Transnational Information Systems Model](image-url)