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Information Systems Planning Autonomy in U.S.-Based Subsidiaries of Foreign Firms

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Abstract

Globally competing firms are increasingly dependent on information systems (IS) for managing and monitoring their international businesses. To utilize IS effectively, the need for IS planning is critical. This research-in-progress examines IS planning autonomy in U.S.-based subsidiaries of foreign (based outside the U.S.) firms and organizational variables that might influence this autonomy. It aims to determine if IS planning autonomy is a predictor of effective IS planning for these firms.

Introduction

Autonomy is an element of organizational structure related to the division of decision making authority between a local unit and an outside organization which controls it (Garnier, 1982). According to Selig (1983) greater autonomy of strategic business units is an issue important to firms that compete globally. This research thus proposes to study specifically the autonomy that U.S.-based subsidiaries have from their parent companies for IS planning. It lays the groundwork for improved research and practice for IS planning in such firms.

Three main components comprise the research model of this study. These are:

- (1) contingency variables derived from literature review, that could potentially influence the IS planning autonomy of subsidiaries of globally competing firms
- (2) components of IS planning (i.e., IS planning activities and IS planning phases), and
- (3) IS planning effectiveness measured in terms of objectives realized by IS plans

This model is shown in Figure 1, and proposes to study two relationships:

- (1) the influence of company-wide and subsidiary-level conditions on subsidiary IS planning autonomy, and
- (2) the influence of subsidiary IS planning autonomy on IS planning effectiveness

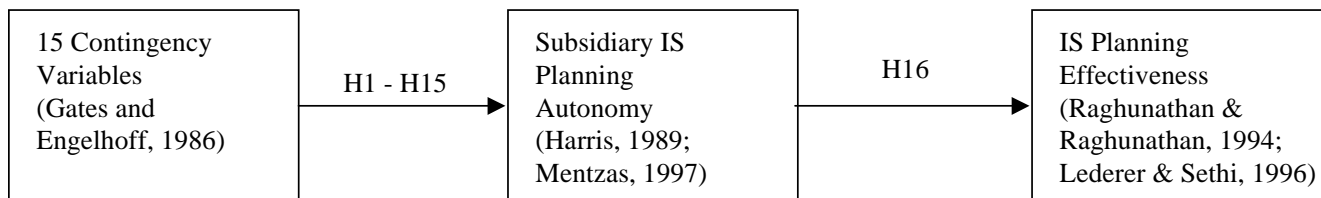


Figure 1. The Research Model

Contingency Variables

Prior research (Gates and Egelhoff, 1986) has identified 15 contingency variables that can influence the autonomy of a subsidiary. Nine of the variables are measured at the company-level and apply to all parent-subsidary relationships within a company, while six variables are measured at the subsidiary level and apply to a specific parent-subsidary relationship. These variables are described below.

Company-Level Contingency Variables: (1) Size of foreign operations (2) Size of the corporation (3) Foreign product diversity (4) Product modification differences between subsidiaries (5) Extent of outside ownership in foreign subsidiaries (6) Extent of foreign acquisitions (7) Industry (8) Nationality (9) Age of the company abroad.

Subsidiary-Level Contingency Variables: (1) Relative size of the subsidiary (2) Size of the subsidiary (3) Degree of product change in subsidiary (4) Competitive climate change faced by subsidiary (5) Level of intracompany purchases by subsidiary (6) Age of subsidiary.

The hypotheses associated with these variables are shown in Table 2.

Table 1. Components of IS Planning

IS Planning	Activities
General IS Resource Planning	Application Software Planning Systems Software Planning Hardware Planning Network Communications Planning Data Security Planning Disaster Recovery Planning Personnel Planning Technical Training Planning End-user Computing Planning Standards and Procedures Planning Facilities Planning Systems Control Planning
IS Planning Phases	Stages
Planning the IS planning process (i.e., Strategic Awareness)	Determining key planning issues Defining planning objectives Defining planning objectives Organizing the planning team(s) Obtaining top management commitment
Analyzing the Current Environment (i.e., Situation Analysis)	Analyzing current business systems Analyzing current organizational systems Analyzing current information systems Analyzing the current external business environment Analyzing the current external IT environment
Conceiving Strategy Alternatives (i.e., Strategy Conception)	Identifying major IT objectives Identifying opportunities for improvement Evaluating opportunities for improvement Identifying high level IT strategies
Selecting Strategy (i.e., Strategy Formulation)	Identifying new business processes Identifying new IT architectures Identifying specific new projects Identifying priorities for new projects
Planning Strategy Implementation (i.e., Strategy Implementation Planning)	Defining change management approach Defining action plan Evaluating action plan Defining follow-up and control procedures

Components of IS Planning

A review of IS planning literature indicates that IS planning has two major components (1) Activities (Harris, 1989), and (2) Phases (with associated stages) (Mentzas, 1997). These are described in Table 1.

IS Planning Effectiveness

IS planning effectiveness can be measured in terms of objectives achieved by IS planning (Ragunathan and Ragunathan, 1994; Lederer and Sethi, 1996). These objectives are: (1) Prediction of future trends (2) Improved short-term IS performance (3) Improved long-term IS performance (4) Improved decision making (5) Avoidance of problem areas (6) Increased user satisfaction (7) Improved systems integration (8) Improved resource allocation (9) Enhancing management development (10) Align IT with business needs (11) Gain a competitive advantage from IT (12) Identify new and higher payback applications (13) Identify strategic applications (14) Increase top management commitment to IT (15) Improve communication about IT with users (16) Forecast IT resource requirements (17) Allocate IT (18) Develop an information architecture (19) Increase visibility of IT in the organization.

Theoretical Background

From a rational perspective (Tractinsky and Jarvenpaa, 1995), it may be assumed that increased autonomy for IS planning in subsidiaries will positively influence their planning effectiveness. This assumption can be justified by the theory of procedural justice (Kim and Mauborgne, 1993), where subsidiary managers perceiving fair treatment from the parent firm, will tend to align their strategies with the parent. Also underlying the rational approach are theories of organizational information processing, and communications (Galbraith, 1973; Daft and Lengel, 1986).

Table 2. Hypotheses and Associated Statistical Tests

No.	Hypotheses	Statistical Test
1	Autonomy of IS planning is positively correlated with the size of foreign operations in globally competing firms	Correlation/ Regression
2	Autonomy of IS planning is positively correlated with the size of the globally competing firm.	Correlation/ Regression
3	Autonomy of IS planning is positively correlated with foreign product diversity in globally competing firms	Correlation/ Regression
4	Autonomy of IS planning is positively correlated with the extent of product modification differences in globally competing firms	Correlation/ Regression
5	Autonomy of IS planning is positively correlated with extent of local management ownership in foreign subsidiaries in globally competing firms	Correlation/ Regression
6	Autonomy of IS planning is positively correlated with the extent of foreign acquisitions in globally competing firms	Correlation/ Regression
7	Autonomy of IS planning differs across industry types, multidomestic industries will have greater autonomy for IS planning than global industries	ANOVA
8	Autonomy of IS planning differs according to the national culture of the parent company	ANOVA
9	Autonomy of IS planning is positively correlated with the age of the multinational corporation abroad	Correlation/ Regression
10	Autonomy of IS planning is positively correlated with the relative size of the subsidiary	Correlation/ Regression
11	Autonomy of IS planning is positively correlated with the size of the subsidiary	Correlation/ Regression
12	Autonomy of IS planning is negatively correlated with product change	Correlation/ Regression
13	Autonomy of IS planning is positively correlated with competitive climate change	Correlation/ Regression
14	Autonomy of IS planning is negatively correlated with intracompany purchases by the subsidiary	Correlation/ Regression
15	Autonomy of IS planning is positively correlated with the age of the subsidiary	Correlation/ Regression
16	More autonomy for IS planning will result in more effective IS plans	Regression

Organizational theorists have concluded that under environmental uncertainty, to achieve higher effectiveness, organizations need to have a higher degree of decentralization (Lawrence and Lorsch, 1967). Since subsidiaries of globally competing firms operate in uncertain environments (Cray, 1984), greater autonomy would lead them to be more effective. Also, according to Gupta (1987) greater subunit autonomy increases the information processing capacity of the subunit by pushing the locus of responsibility towards it, thereby helping prevent an overload of the corporate-subunit dyad (Gupta, 1987). Since globally competing firms have greater information processing requirements than domestically competing firms, increasing their information processing capacity will lead to greater organizational effectiveness. Further, Govindarajan (1988) suggests that greater decentralization should always be preferred, regardless of the strategy followed by the subsidiary, and the benefits of decentralization will be higher for subsidiaries pursuing differentiation rather than low cost strategies. He found an overall positive correlation between decentralization and effectiveness.

Methodology

The research proposes to use a field survey consisting of two questionnaires. The primary questionnaire will consist of questions about contingency variables influencing the autonomy of IS planning, 5-point Likert scale items to measure the extent of IS planning and autonomy of IS planning, 5-point Likert-scale items to measure the effectiveness of IS planning in terms of objectives sought from IS planning and objectives achieved from IS planning, and general demographic questions. The secondary questionnaire will consist of 5-point Likert scale items to measure the effectiveness of IS planning in terms of objectives sought from IS planning and objectives achieved from IS planning, and general demographic questions. Both questionnaires will be sent to a senior IS executive who will be requested to complete the primary questionnaire and direct the secondary questionnaire to another member of top management who is familiar with but separate from the IS area. Matched-pair surveys are advantageous because they reduce the common source variance associated with sampling the same source for the independent and the dependent variables. The statistical tests associated with the hypotheses of the study are shown in Table 2.

Expected Contributions of this Research

This research tests well known organizational theories. As a result, an important outcome of it will be an understanding of whether those theories that apply to domestic firms also apply to globally competing firms.

The study's results can also be compared to previous research that has examined decision-making autonomy for the functional areas of marketing, manufacturing, and finance under the influence of the same contingency variables used in this study. In effect, the research will also provide an understanding as to whether the well known theories apply to the IS area

If, as expected, higher subsidiary IS planning autonomy leads to more effective IS planning, then the identification of a set of contingency variables that influence the autonomy of IS planning would be valuable information to managers. Managers could perhaps then attempt to compensate for the unfavorable effects of the variables that diminish autonomy.

References

References available upon request from the first author.