Autonomy and procedural justice in strategic systems planning

Dinesh A. Mirchandani* & Albert L. Lederer[†]

*College of Business Administration, University of Missouri – St. Louis, 1 University Boulevard, St. Louis, MO 63121-4499, USA, email: mirchandanid@umsl.edu, and [†]425C C.M. Gatton College of Business and Economics, University of Kentucky, Lexington, KY 40506-0034, USA, email: lederer@uky.edu

Abstract. *Job characteristics and procedural justice theories offer an avenue through which to better understand the effectiveness of the strategic planning of decision support and other information systems in the subsidiaries of multinational firms. The first theory suggests that greater autonomy leads to greater perceptions of fair treatment, and the second suggests that perceptions of fair treatment lead to greater commitment and performance. A postal survey of 130 chief information officers of the US subsidiaries of multinational firms collected data to test hypotheses based on the theory.*

Data analysis using partial least squares tested a high-level model and a decomposed model. The high-level model revealed that a second order strategic systems planning (SSP) autonomy construct predicted the perceptions of procedural justice, procedural justice predicted a second order SSP construct, and the SSP construct predicted SSP effectiveness. The decomposed model showed that autonomy in the especially creative strategy conception phase of planning predicted procedural justice. Procedural justice predicted all of the phases of SSP, while the strategy selection phase alone led to planning effectiveness.

These findings underscore the impact of the autonomy to be creative and of the sense of fair treatment, both within the context of limited autonomy for the choice of the strategy. They highlight the impact of the choice of the strategy in contrast to other planning phases, and perhaps most importantly, they argue for local control of the planning process.

Keywords: job characteristics theory, procedural justice, autonomy, IS planning

INTRODUCTION

Managers of multinational firms are increasingly using decision support and other information systems as major tools to help them compete (Rao *et al*., 2007). Effective strategic systems planning (SSP) can assist these managers in choosing from the myriad possibilities those new

systems investments that align best with their business objectives and support their business strategies (Reponen, 1994; Morley, 2004). Ineffective planning, however, can result in the selection of new systems investments that waste scarce resources and fail to address organisational objectives and needs. Not surprisingly therefore, SSP is one of the most critical challenges today confronting not only executives at firms in single countries (the typical target of SSP studies), but also at multinational firms with parent level managers in one country and subsidiary managers in another (the target of this paper) (Deans *et al.*, 1991; Spitze, 2001; Luftman, 2005).

On one hand, the retention of control of SSP decisions by parent level managers may increase the multinational's efficiency in implementing business strategy. On the other, once the parent makes its expectations clear, autonomy for subsidiary managers can provide them the flexibility necessary to develop plans responsive to local conditions (Prahalad & Doz, 1987; Taggart, 1997). Because SSP requires managers to determine key planning issues, analyse current business issues, identify objectives and strategies, conceive new information systems initiatives, and then implement the initiatives, they need knowledge of the local environment. Subsidiary managers are, after all, likely to be more knowledgeable about local culture, language, data export control, taxes, other laws, accounting regulations, exchange rate risk, national infrastructure, systems staff availability, labour and trade unions. At the same time, the parent's lack of knowledge about these local conditions can make planning more difficult for parent managers (Cash *et al.*, 1988; Claggett & Stutzman, 2002; Perkins & Markel, 2004). Greater autonomy for subsidiary managers can thus provide the organisation with systems vital to the success of the multinational firm itself (Walsh & Milner, 2002).

According to job characteristics theory, autonomy for the subordinate manager leads to perceptions of being treated fairly (Hackman & Oldham, 1976; Organ, 1990). Autonomy does so by causing work to be more meaningful, thus inspiring greater responsibility for work outcomes and better knowledge of work results (Hackman & Oldham, 1976).

According to the theory of procedural justice, the perception of being treated fairly leads to increased management commitment (Kim & Mauborgne, 1993a,b). The perception does so by creating an obligation in subsidiary managers to reciprocate the fairness with which they are treated, and to act fairly themselves by committing to the strategic decisions of the parent company. Moreover, the perception makes the managers aware that their own unit's priorities may compete with those of other units, and help them recognise that their priorities cannot always be accommodated.

Consistent with job characteristics and procedural justice theories, decision support and other information systems researchers have suggested that greater autonomy leads to greater commitment and as well as improved performance (Mumford & Henshall, 1979; Mumford *et al.*, 1983; Ives & Olson, 1984; Hunton, 1996a,b; Hunton & Beeler, 1997; Hunton & Price, 1997; Moore, 2000; Ahuja & Thatcher, 2005), though none of these researchers explicitly applied job characteristics theory and only Hunton's and his co-authors' experiments explicitly applied procedural justice theory. In effect, despite the relevance and explanatory power of both theories at the firm level, none have shown procedural justice as a mediator between the autonomy and the planning that may lead to improved performance.
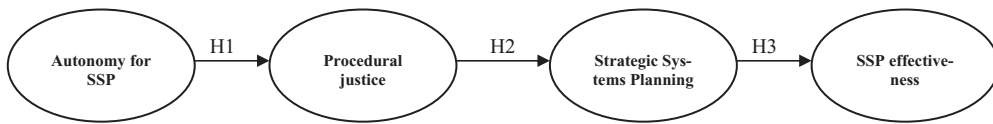
Figure 1. The research model.

The objective of this research is to test a model in which SSP autonomy predicts procedural justice, procedural justice predicts such planning itself, and that planning in turn predicts planning effectiveness. The dramatic growth of multinationals and management's pressing need to understand how to delegate autonomy in order to plan with greater effectiveness in the especially difficult context of multinational firms motivated the study (Tractinsky & Jarvenpaa, 1995; Karahanna *et al.*, 2002; Mirchandani & Lederer, 2005). Job characteristics and procedural justice theories, which say that autonomy for the subordinate manager leads to perceptions of being treated fairly which leads to increased management commitment, provided the foundation because they can explain the motivation to perform SSP more diligently. Despite the growing need in the global context to derive greater value from information systems via better SSP, despite the many studies of SSP, and despite the prevalence of research using procedural justice and job characteristics theory in other areas of the organisation, an extensive literature review failed to uncover prior research that had applied the theories to SSP. Figure 1 shows the high-level research model (i.e. with second order constructs) used to test the broad hypotheses, and Figure 2 shows it decomposed into planning phases (i.e. with first order constructs) to elucidate the high-level model. The philosophy behind the research (i.e. the system of principles for guiding it) is that by testing the effect of SSP autonomy on procedural justice, the effect of procedural justice on SSP itself and the effect of SSP on SSP effectiveness, it would be possible to both enhance the understanding of the concerns of the SSP stakeholders and to improve SSP itself (Córdoba, 2009).

STUDY CONTEXT AND RESEARCH CONSTRUCTS

The multinational corporation

A multinational corporation is a business enterprise with manufacturing, sales or service subsidiaries in one or more foreign countries. A multinational, also known as a transnational or international corporation, typically develops new products in its own country and manufactures them abroad to gain advantages in trade, and economies of labour and materials. Multinationals influence other businesses and even governments. In recent years, many smaller corporations also have become multinationals, some in developing nations (Ibeh *et al.*, 2004). Proponents of multinationals maintain that they create jobs, wealth and new technologies in countries in great need. Critics of multinationals object to their inordinate political influence,
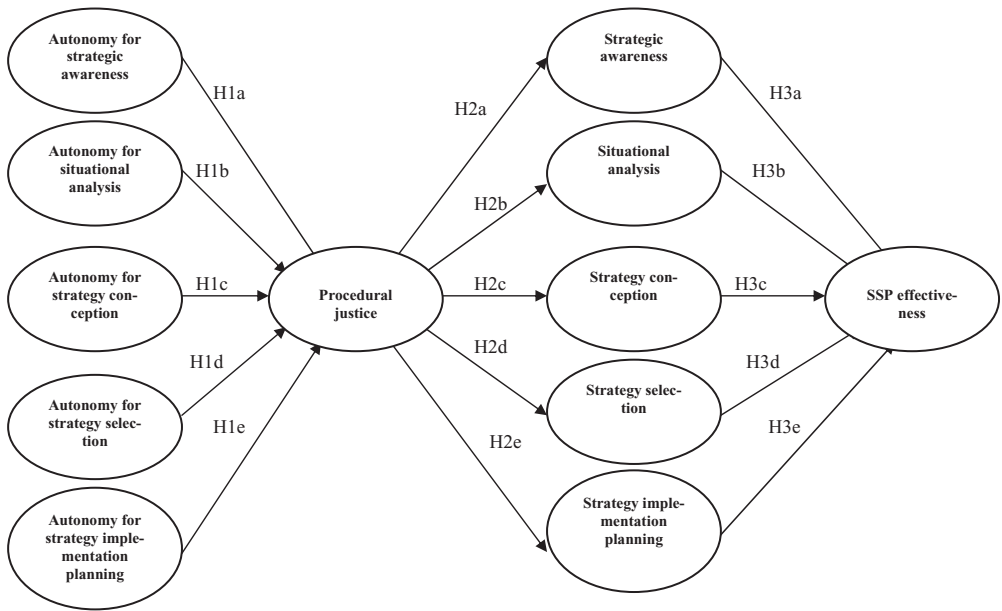
Figure 2. The decomposed research model.

their exploitation of developing nations and the loss of jobs in their home countries (Anonymous, 2008). Because of their growing prominence and management challenges, they served as the context for this study.

SSP process

SSP is the process of assessing the external and internal environments to identify new decision support and other applications that support the organisation's business objectives (King, 1978; 1984; Premkumar & King, 1992; O'Connor, 1993; Segars & Grover, 1998; Sabherwal, 1999; Brown, 2010; Bygstad *et al*., 2010; Chen *et al*., 2010).[1] Senior business executives, along with chief information officers (CIOs), thus play key roles in it (Schuman & Rohrbaugh, 1991; Earl, 1993; Cerpa & Verner, 1998). It is a continuous process periodically adjusted to the expectations of the participants (Salmela & Spil, 2002), and requiring critical reflection on values and assumptions about potential situations, as well as continuous dia-logue, listening and mutual collaboration (Córdoba, 2009). To carry it out, an organisation follows one of many similar, well-defined and documented methodologies, or it customises its own. Its activities recognise opportunities for the use of information technology (IT), determine

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[1]Although SSP is not the independent variable in the current study, an explanation of it necessarily precedes the explanation of the other constructs related to it for clarity of exposition.

resource requirements for these opportunities, and develop strategies and action plans to realise them (Byrd *et al.*, 1995; Sabherwal & King, 1995). It has historically been a large-scale, comprehensive effort, but is increasingly becoming incremental with experimentation and greater organisational learning (Cash & Pearlson, 2005; Newkirk & Lederer, 2006).

Mentzas (1997) divided such planning into five phases of activities. They are *strategic awareness*, *situational analysis*, *strategy conception*, *strategy selection* and *strategy implementation planning*. These phases have been accepted in strategic management (Thompson, 1967) and marketing (Cravens, 1988), and been applied in systems research (Newkirk *et al.*, 2003).

The objective of the *strategic awareness* phase is to increase management commitment to the planning process and to provide initial answers to major questions about the objectives of the organisation and its issues. The phase thus creates direction for the overall planning process.

The major purposes of the *situational analysis* phase are to arrive at a clear and documented diagnosis of the existing business and IT conditions in the organisation, to identify problems and inefficiencies, and to understand the internal and external environments. The phase synthesises a range of views on the strengths and weaknesses of the organisation in the context of its environment, as well as on the management and planning of its information resources.

Strategy conception is the envisioning of alternative future systems uses. It thus includes the identification of opportunities for competitive and performance advantages, and of scenarios for growth.

Strategy selection constitutes the choice of new systems and processes. It includes specifications for data, applications development and maintenance, as well as for the architecture to be implemented. It elucidates the functional, organisational and technical models.

Strategy implementation planning includes the definition of concrete actions, the evaluation of budgetary requirements, and the study of time and organisational constraints. It elaborates upon issues of plan coordination and migration.

The five phases and their major activities, derived from Mentzas (1997) and used by Newkirk *et al.* (2003) and Newkirk & Lederer (2010), appear in Table 1. The current study used one construct to represent the extent to which the subsidiary carried out each of the five SSP phases in the table.

SSP autonomy

Autonomy has been described as the extent an individual or a group of individuals have the freedom, independence and discretion to determine the necessary actions and the means for carrying them out (Orsburn *et al.*, 1990; Manz, 1992; Janz *et al.*, 1997; Janz & Prasarnphanich, 2003). Autonomy in SSP thus refers to the freedom, independence and discretion to set the specifics for carrying out the SSP phases. Such autonomy, like comprehensiveness, formalisation, focus, flow, participation and consistency, may be seen as a key planning dimension (Segars & Grover, 1999). The parent would delegate the autonomy to the subsidiary which

Table 1. Strategic systems planning phases and activities (for autonomy and planning constructs)

Strategic Awareness: Determining key planning issues; defining planning objectives; organising the planning
team(s); obtaining top management commitment
Situational Analysis: Analysing current business systems; analysing current organisational systems; analysing
current information systems; analysing the current external business environment; analysing the current external IT
environment
Strategy Conception: Identifying major IT objectives; identifying opportunities for improvement; evaluating
opportunities for improvement; identifying high-level IT strategies
Strategy Selection: Identifying new business processes; identifying new IT architectures; identifying specific new
projects; identifying priorities for new projects
Strategy Implementation Planning: Defining change management approaches; defining action plans; evaluating
action plans; defining follow-up and control procedures

IT, information technology

would carry out the phase. The current study used one construct for the extent the subsidiary
had autonomy for each of the five SSP phases in Table 1.

Procedural justice

Organisational justice is the perception of fair treatment from a source or focal entity in a
relationship. Researchers have studied five constructs of such justice (Carr, 2007). The five
are systemic, distributive, interpersonal, informational and procedural justice. Systemic justice
is the perception of the overall fairness of the focal entity (Beugré, 1998), and it is thought to
mediate the effect of the other four justices on other variables (Carr, 2007).

Distributive justice is the individual's perception of fairness of outcomes in comparison to the
outcomes of others (Adams, 1965). Interpersonal justice is the perception of fairness of the
manner in which outcomes are administered (Greenberg, 1993). Informational justice is
the perception of fairness of information or knowledge received about procedures (Greenberg,
1993).

Procedural justice, the form investigated in the current research, is the perception of fairness
of policies and processes contributing to outcomes (Lind & Tyler, 1988). It thus refers to the
extent to which a decision process is perceived to be fair (Thibaut & Walker, 1975). Thus, like
the other forms of justice, procedural justice is itself thus a perception. However, previous
authors often have used the redundant 'feelings of procedural justice' or 'perception of
procedural justice' phrases, and to keep the reader focused, we occasionally do likewise in this
paper.

The theory of procedural justice states that perceptions of being treated fairly motivate
increased organisational commitment (Fonda & Guile, 1999). The theory has been the subject
of research for many years in the fields of management and criminology (Kim & Mauborgne,
1993b; Tyler, 2003).

Two theories underlie the theory of procedural justice (Kim & Mauborgne, 1993b). The first
is social exchange theory (Blau, 1964). According to it, the feeling of being treated fairly

creates an obligation in subsidiary managers to reciprocate that fairness and to act fairly themselves by committing to the strategic decisions of the parent company.

The second conceptual base is long-term, self-interest theory (Lind & Tyler, 1988). According to it, organisational members are aware that their own unit's priorities may compete with those of other units. They recognise that their priorities cannot always be accommodated and may even have to be occasionally traded off in the organisation. Thus instead of short-term gains, they look for organisational practices that assure them that over the long term, the interests of their unit will be adequately protected. The presence of procedural justice provides subsidiary managers with this assurance and therefore increases their organisational commitment (Kim & Mauborgne, 1993b).

Procedural justice is considered an important construct in multinational relationships (Luo, 2005). Such relationships are characterised by cultural differences and resulting uncertainties (Parkhe, 1993; Park & Ungson, 1997). These differences can exacerbate conflicts and perceptions of opportunistic behaviours when one party feels unfairly treated with respect to exchange procedures (Klein *et al.*, 2001). Greater procedural justice has been linked to overcoming such barriers (Luo, 2005).

Subsidiary managers in multinational firms have identified five components that lead them to believe they are treated fairly by the parent company. Kim & Mauborgne (1991) derived these components from the responses of 63 multinational subsidiary presidents who identified the characteristics they felt made the strategic planning process between the parent firm and their subsidiary unit particularly fair or unfair. The characteristics were classified into five components (i.e. survey items) representing procedural justice in multinational firms. Individually, these components had been applied in prior management research (Leventhal, 1980; Greenberg, 1986; Bies & Shapiro, 1987; Folger & Konovski, 1989). They have since been operationalised as a group to represent procedural justice in empirical research in multinational firms (Kim & Mauborgne, 1993a,b; 1996; Tseng *et al.*, 2004), and also recommended elsewhere for such use (Ellis, 2000; Rugman & Verbeke, 2001). The characteristics, derived from Kim & Mauborgne (1993a,b; 1996), appear in Table 2.

One approach to assessing fairness in a relationship is by assessing the allocation of control over key decisions (Greenberg & Lind, 2000). Participants have feelings of fairness when they are allowed to voice concerns about decisions. This voice effect can operate even when articulated concerns do not immediately determine the results of a decision at hand so long as participants voicing their concerns believe that other parties in the relationship are listening and

Table 2. Procedural justice components

Bilateral communication exists between managers at the parent company and the local company.
Local company managers can challenge and refute the strategic views of parent company managers.
Parent company managers involved in strategic decision-making are well informed and familiar with the situation of the local company.
The local company is provided a full account for the final strategic decisions of the parent company.
The parent company does not discriminate but applies consistent decision-making procedures across subsidiary units.

that the potential influence they wield through voice is authentic (Barden *et al.*, 2005). Such perceived control over the decision process and outcome (Lind *et al.*, 1990) and the extent to which the ultimate decision represents the values and opinions of the participant (Leventhal, 1980) are important components of procedural justice, much more so than of distributive, interpersonal, informational or systemic (Hunton, 1996a,b). Thus, Kim & Mauborgne (1993a,b) in their research on the organisational justice of subsidiary managers in multinational firms exclusively considered the procedural form, and the current study followed suit.

SSP effectiveness

SSP, like strategic business planning, produces many difficult-to-assess benefits (King, 1988; King & Grover, 1991). The benefits therefore, especially those of systems planning, often cannot be simplified into such financial measures as return on investment, payback or internal rate of return (Segars & Grover, 1998). As a result, researchers have sought more intangible measures of planning effectiveness.

A common way to evaluate strategic planning effectiveness is to assess the level of achievement of key objectives (Cameron & Whetten, 1983; Venkatraman & Ramanujam, 1987; Holsapple & Sena, 2005). Though organisations may differ in terms of their emphasis, strategic planning generally helps them achieve several specific ones (Segars & Grover, 1998). Thus Raghunathan & Raghunathan (1994) operationalised the effectiveness of SSP using nine key planning objectives. Subsequent researchers also used the identical (Wang & Tai, 2003) or very similar (Papke-Shields *et al.*, 2002; 2006) items to study planning effectiveness. The objectives and an explanation of each, derived from Raghunathan & Raghunathan (1994), appear in Table 3.

Table 3. The effectiveness of strategic systems planning

Objective	Explanation
Prediction of future trends	To improve the anticipation of future business and information technology changes
Improved short-term IS performance	To enhance the contribution of systems to the organisation over the next few weeks or months
Improved long-term IS performance	To enhance the contribution of systems to the organisation over the next few months or years
Improved decision-making	To enhance managers' ability to make better business choices
Avoidance of problem areas	To better identify current impediments to realising the organisational systems benefits and minimise their recurrence
Increased user satisfaction	To facilitate greater managerial and other user predilection toward systems
Improved systems integration	To facilitate the sharing of software, hardware and data among new and existing systems
Improved resource allocation	To facilitate better distribution of systems staff and financial support among competing IS projects
Enhanced management development	To enable managers to increase their skills

IS, information systems.

HYPOTHESES

The impact of autonomy on procedural justice

The job characteristics theory of Hackman & Oldham (1976) has long provided a foundation for understanding job design. The theory has been widely studied and validated (Taber & Taylor, 1990), applied to the work of managers (Saavedra & Seog, 2000) and used to explain such organisational change processes as mergers and acquisitions (Seo & Hill, 2005). According to it, a key characteristic of a job is autonomy. Hackman & Oldham (1976) defined autonomy as the degree to which the job gives the worker freedom and independence in scheduling work and determining how the work will be carried out. Autonomy has also been described as the extent that a group of individuals has the freedom, independence and discretion to determine the necessary actions and the means for carrying them out (Orsburn *et al.*, 1990; Manz, 1992; Janz *et al.*, 1997), and the term thus can be applied to the analysis of group processes as readily as to individual tasks (Hackman, 1987).

The theory asserts that autonomy causes 'such psychological states as experienced meaningfulness of the work, experienced responsibility for outcomes of the work, and knowledge of the actual results of the work' (Hackman & Oldham, 1976, p. 255). In the context of the theory, it does so not only for individuals but also for groups (Campion *et al.*, 1993). Some groups, in fact, perform a variety of tasks with considerable authority with regard to work methods, planning and coordination with other groups (Pearson, 1992; Cohen & Bailey, 1997; Van Mierlo *et al.*, 2005).

Several studies have therefore applied the job characteristic of autonomy in studies of teamwork (van Mierlo *et al.*, 2005). This is consistent with autonomy being referred to as among the most important criteria for designing teams (Cordery, 1996). In fact, autonomy (grounded as a job characteristic) in the systems analysis process appears to improve motivation in systems teams (Janz *et al.*, 1997).

According to job characteristics theory, the psychological states of experienced meaningfulness, experienced responsibility, and knowledge of the actual results in turn produce satisfaction for the individual or group. The theory thus posits that autonomy causes satisfaction.

A large component of job satisfaction is the perception of being treated fairly (Organ, 1988a,b; 1990; Moorman, 1991). The perception of being treated fairly within decision processes such as information systems planning is, essentially, synonymous with the construct of procedural justice (Kim & Mauborgne, 1993a).

Thus, multinational subsidiary managers, who are given autonomy in SSP, would be expected to perceive that they are receiving fair treatment. They would do so in terms of Kim & Mauborgne's (1993a,b) components of procedural justice. In other words with such autonomy, they would perceive that their parent company managers are generally knowledgeable about their local situation, that two-way communication exists, and that the parent is fairly consistent in making decisions for subsidiaries. They would further perceive that they can challenge the parent's strategic views and that they receive a reasonable account of the parent's decisions.

Thus, we suggest that the greater the autonomy for SSP, the greater the procedural justice. We hence propose Hypothesis 1:

H1: The greater the autonomy for SSP, the greater the perception of procedural justice.

Autonomy in each of the five SSP phases can affect procedural justice separately through its own activities. Hence, the decomposed model is used to elucidate the impact of autonomy on procedural justice, and five additional hypotheses are advanced.

Strategic awareness deals with determining planning objectives, organising planning team(s) and obtaining top management commitment. This phase is especially important because it influences the scheduling and carrying out of the activities in the other phases. Autonomy for this phase would increase the experienced meaningfulness and responsibility for not only itself, but also those later activities. Autonomy for it would further increase subsidiary managers' knowledge about the actual results of the phase itself (i.e. the nature of the objectives, the rationale for the choices of the members of the teams and the extent of top management commitment). As a result, autonomy would increase subsidiary managers' sense of satisfaction in terms of feeling they are treated fairly. Hence we hypothesise:

H1a: The greater the autonomy for *strategic awareness*, the greater the perception of procedural justice.

Situational analysis deals with analysing current systems and the environment. Autonomy during it provides the space and freedom for participants to challenge existing assumptions and produce new interpretations about the potential impact of the environment on planned information systems within the organisation (Choo, 1999). Under the job characteristics theory, this freedom would promote satisfaction during the otherwise tedious and cumbersome process of situational analysis, and this satisfaction would encompass the perception of fair treatment among those doing that analysis. Thus we hypothesise:

H1b: The greater the autonomy for *situational analysis*, the greater the perception of procedural justice.

Strategy conception entails identifying opportunities and strategies for improvement. It especially demands the creativity and imagination needed to develop competitive systems (Schlender & Sung, 2002). Autonomy during it would produce meaningfulness and responsibility, and thus procedural justice whereas structure might stifle creativity and imagination (von Hellens, 1995).

In fact, strategy often emerges from the autonomous behaviours of organisational members when they suggest improvements and conceive new business opportunities (Burgelman, 1983; Hart, 1992). Such a generative mode of strategy making is said to be particularly well suited to firms operating in such complex environments as found in multinationals (Lee & Leifer, 1992). It encourages experimentation, risk taking and individual initiatives.

Autonomy for *strategy conception* thus informs subsidiary managers that they are allowed to have opinions and that these opinions are of value to the parent (Lind & Tyler, 1988). In accordance with the job characteristics theory, subsidiary managers with greater autonomy for SSP would perceive greater fairness in their treatment. Thus we hypothesise:

H1c: The greater the autonomy for *strategy conception*, the greater the perception of procedural justice.

Strategy selection identifies specific new business processes, IT architectures and projects along with project priorities. Autonomy for s*trategy selection* lets subsidiary managers choose the strategy that best meets their needs, and that they presumably will implement in order to facilitate the achievement of the subsidiary's business goals. Greater autonomy would increase their sense of responsibility, and thus job satisfaction in terms of feelings of fair treatment in this particularly critical activity. In fact, greater autonomy to choose a course of action from among multiple alternatives has been shown to lead to greater perceptions of fair treatment (Folger, 1977; Leventhal, 1980). Thus we hypothesise:

H1d: The greater the autonomy for *strategy selection*, the greater the perception of procedural justice.

Strategy implementation planning defines change management and action plans, the evaluation of action plans and the definition of follow-up and control procedures. Autonomy for s*trategy implementation planning* would place the responsibility for change management and action planning on subsidiary managers who are more knowledgeable about the conditions of the subsidiary than are parent managers. Greater autonomy would produce a sense of responsibility for the final outcome of the planning process and for the realisation of its goals. Such ownership would result in greater job satisfaction in terms of the perception of fairer treatment. Thus we hypothesise:

H1e: The greater the autonomy for *strategy implementation planning*, the greater the perception of procedural justice.

The impact of procedural justice on SSP

Procedural justice, according to its theory, inspires employees with a sense of organisational citizenship (i.e. vesting with the rights, privileges and duties) and therefore to exhibit citizenship behaviour (i.e. acting in response to that vesting to the benefit of the organisation) (Moorman *et al.*, 1998). Citizenship implies commitment (i.e. feeling bound) and motivation (i.e. having incentives) to perform tasks that are deemed useful to the organisation (Organ, 1988a). Citizenship behaviour includes 'personal industry' (i.e. diligence at performing one's job) and 'individual initiative' (i.e. active participation in organisational issues) (Moorman & Blakely,

1995, p. 130).[2] Greater perceptions of procedural justice would thus be expected to motivate subsidiary managers (as organisational citizens) to perform SSP, a behaviour deemed desirable in the organisation (Ward & Peppard, 2002). In effect, managers who feel they are treated more fairly would be more committed to the organisation, be more inspired to personal industry and individual initiative, and hence be expected to be more motivated to perform planning.

Greater procedural justice has been shown to predict commitment to the parent by subsidiary top managers in multinational firms (Kim & Mauborgne, 1996), and to the federal government by its managers in budget decision-making (Staley *et al.*, 2003). It has also been shown to lead to higher levels of participation in organisational affairs by senior managers (Lau & Lim, 2002). It would thus similarly motivate subsidiary systems managers to carry out SSP. Thus, we hypothesise:

H2: The greater the perception of procedural justice, the greater the SSP.

Because SSP can be decomposed into five phases, with each affected separately by procedural justice, we propose five additional hypotheses. For example, procedural justice would predict commitment to and the performance of the laying of the groundwork of the SSP process in the *strategic awareness* phase because the feeling of being treated fairly would inspire planners' personal industry and individual initiative in their defining of planning objectives, issues, teams and top management role. Hence:

H2a: The greater the perception of procedural justice, the greater the *strategic awareness*.

Procedural justice would predict commitment to and the performance of the *situational analysis* phase because the feeling of being treated fairly would inspire personal industry and individual initiative in the analysis of the current systems and of the current environment. Hence:

H2b: The greater the perception of procedural justice, the greater the *situational analysis*.

Procedural justice would predict commitment to and the performance of the *strategy conception* phase because the feeling of being treated fairly would inspire the planners' citizenship behaviours in the identification of IT objectives, opportunities and strategy. Hence:

H2c: The greater the perception of procedural justice, the greater the *strategy conception*.

Procedural justice would predict commitment to and the performance of the *strategy selection* phase because the feeling of being treated fairly would inspire the two behaviours in the identification of the new processes, architectures, projects and priorities. Hence:

H2d: The greater the perception of procedural justice, the greater the *strategy selection*.

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[2]Altruism, conscientiousness, sportsmanship, courtesy, civic virtue, functional participation, advocacy participation, loyalty and voice are among the many citizenship behaviours (Farh *et al.*, 2004), but the authors deemed personal industry and individual initiative the most relevant to the current study.

Finally, procedural justice would predict commitment to and the performance of the *strategy implementation planning* phase because the feeling of fair treatment would inspire the behaviours in the defining of change management approaches, action plans, and follow-up and control procedures. Hence:

H2e: The greater the perception of procedural justice, the greater the *strategy implementation planning*.

The impact of SSP on SSP effectiveness

According to the theory, procedural justice is expected to inspire commitment to activities (i.e. the dependent variables in the H2 hypotheses) that would produce improved performance. One study confirmed such an expectation in terms of the improved performance for strategy conception and execution activities within multinational firms (Kim & Mauborgne, 1993b). For example, bidirectional communication (a procedural justice characteristic) enabled the sharing of perceptions, knowledge and ideas that promoted learning. The ability to question and refute parent decisions helped subsidiary managers in their shunning complacency and working harder. The familiarity of parent managers with subsidiary situations fostered learning about global perspectives by subsidiary managers. Comprehensive explanations of decisions helped subsidiary managers in their efforts to better understand the parent's vision. Lastly in that study, consistent decision-making procedures fostered collaboration practices.

In the current study, procedural justice would be expected (via H2) to inspire the SSP which, in turn, would be expected to enable the organisation to meet the key planning objectives identified by Raghunathan & Raghunathan (1994). For example, planning would enable the organisation to improve its prediction of future trends and avoid problem areas through the knowledge it gains about them. It would enable the organisation to improve both short- and long-term performance by furnishing goals and milestones for achieving them. It would improve managerial decision-making and user satisfaction by recommending those new systems that best meet manager and user needs. It would improve resource allocation and systems integration by analysing technology needs and predicting how and when to meet them. Finally, it would facilitate management development by recommending organisational changes. Thus providing additional relevance and comprehensiveness to the model, we suggest:

H3: The greater the SSP, the greater the SSP effectiveness.

In *strategic awareness*, determining planning objectives, organising planning teams and obtaining top management commitment can produce the achievement of the objectives by focusing the most skilled contributors on the planning endeavour from its outset as well as by reducing conflict (Wang & Chen, 2006). In fact, the appropriateness of planning objectives (King, 1984; Venkatraman & Ramanujam, 1987), the performance of planning teams (Morgan & Piercy, 1993), and top management commitment to the plans (Ang *et al*., 1999; Teo & Ang, 1999) all individually improve planning effectiveness. Thus, we hypothesise:

H3a: The greater the *strategic awareness*, the greater the SSP effectiveness.

S*ituational analysis* involves the recognition of internal strengths and weaknesses via the analysis of current systems. This can improve the organisation's performance because it gives the organisation the information necessary to enable it to plan more effective new systems by helping it build on its strengths and avoid the consequences of its weaknesses (Choo, 1999; Houben *et al*., 2002).

The analysis of external opportunities and threats via the study of the environment can also improve planning effectiveness (Das *et al*., 1991; Choo, 1999; Houben *et al*., 2002). Organisations scan the environment to understand external forces of change, and can thus develop responses that secure their position in the future via the newly planned information systems (Choo, 1999; Capps & Hazen, 2002). Thus, we hypothesise:

H3b: The greater the *situational analysis,* the greater the SSP effectiveness.

S*trategy conception* identifies the IT objectives, opportunities and strategies that can form the foundation of the plan. It enables the eventual selection of the most appropriate ones, and thus facilitates the effectiveness of the planning itself. The identification of such strategic opportunities in prior research has been linked with organisational effectiveness (Guimaraes, 2000). Hence:

H3c: The greater the *strategy conception*, the greater the SSP effectiveness.

Strategy selection chooses the new business processes and standardised IT architectures that will be implemented according to the plan. The selection of the most appropriate ones can foster the achievement of the planning objectives. Correctly assigned priorities for IT projects in this phase have led to improved productivities (Alexander, 2001). Thus:

H3d: The greater the *strategy selection*, the greater the SSP effectiveness.

S*trategy implementation planning* involves defining change management and action plans, evaluating action plans, and defining follow-up and control procedures. Action plans enable the organisation to prioritise new initiatives based on needs, available resources and prerequisites (Teo & Ang, 1999). Change management improves the likelihood of worker acceptance of the plan. Follow-up and control procedures enable the organisation to monitor the progress of the implementation of the plan. Such implementation can avoid lost opportunities, duplicated efforts, incompatible systems and wasted resources; failure to meet SSP objectives; dissatisfaction with and reluctance to continue SSP; and problems in establishing and maintaining priorities in future SSP (Gottschalk, 1999). Thus, we hypothesise:

H3e: The greater the *strategy implementation planning,* the greater the SSP effectiveness.

METHODOLOGY

To test the hypotheses, the study collected data via a five-point Likert scaled-item survey of CIOs, and analysed it using multivariate techniques. This approach was chosen to capture the

extent of procedural justice, SSP and SSP effectiveness in a multitude of organisations. Although more qualitative approaches such as case study and action research may have been possible, the researchers felt that the current understanding of procedural justice and SSP enabled the use of the larger-scale sample with a resulting broader generalisability.

Instrument development

A field survey contained the survey items to measure the research constructs.[3] One construct was the extent of subsidiary autonomy for each planning phase and another was the extent of the carrying out of each of those phases. Items for both were based on the activities in Table 1.

The third construct was procedural justice. It was based on the five items in Table 2.

A fourth construct, planning effectiveness, was the extent of achievement of each SSP objective multiplied by the extent to which the organisation sought each objective. Subjects responded to nine items for the extent of achievement and to nine for the extent sought based on the objectives in Table 3. This weighted planning effectiveness construct was used to facilitate comparability between subjects (Drazen & Van de Ven, 1985; Venkatraman, 1989; Hoffman *et al*., 1992).

The survey also contained demographic questions. They asked about the participant, the subsidiary company and its parent company.

Previous research has validated the SSP phases construct using Cronbach's alpha, confirmatory factor analysis (CFA), and additional tests of convergent and discriminant validity (Newkirk *et al*., 2003). It has validated the SSP effectiveness construct using alpha, CFA and other tests on three different samples in the USA and Taiwan (Raghunathan & Raghunathan, 1994; Papke-Shields *et al*., 2002; 2006; Wang & Tai, 2003).

Initial research (Kim & Mauborgne, 1991; 1993a,b; 1996) used Cronbach's alpha to establish convergent validity, and used low correlations with other constructs to establish discriminant validity for the procedural justice items. Later research (Taggart, 1997; Tseng *et al*., 2004) applied the similar techniques to revalidate the items.

Pilot testing

Despite the previous validation of the phases, effectiveness and procedural justice items in independent studies with various samples, the instrument was pilot tested with the senior systems executives at five subsidiaries of foreign firms in manufacturing, the industry in the current study, to identify any possible flaws in combining the items, or any possible improvement in them for the target population (Kerlinger, 1986). The senior author met with each participant independently at his or her workplace, and reviewed the purpose of the survey. The participant read the sample cover letter and filled out the survey, making any comments during this time. After completion, the senior author discussed the survey with the participant, and

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[3]Five-point scales were used for consistency with previous research using the measures herein, and for consistency within the current instrument.

asked for comments regarding the presentation of the questions and the utility of the cover letter in gaining responses. The pilot subjects suggested minor revisions to the questions and the cover letter. Changes were duly incorporated in the final version.

Survey distribution

The CIOs of US subsidiaries of multinational firms served as subjects. CIOs are generally viewed as the most knowledgeable individual in the organisation to evaluate SSP, its context and outcomes (Premkumar & King, 1992). The choice of such subsidiaries of firms based outside the US as the subjects of this study was motivated not to test cultural differences (cultural distance served as a control as detailed below), but rather to better understand SSP in the especially challenging multinational context, to address the growing interest in multi-national firms and to supplement the relatively sparse research in the area.

A mailing list was obtained from Applied Computer Research (ACR) in Phoenix, AZ, USA, for a one-time fee based use. It included the name, telephone number and mailing address of CIOs of about 11 000 manufacturing companies based in the USA. This list was compared with a list of foreign-owned subsidiaries in the USA from the *Directory of Foreign Firms Operating in the U.S*. The *Directory* listed about 4000 such subsidiaries. Comparison of the ACR list and the *Directory* identified 416 CIOs of the subsidiaries in the USA to whom the survey was mailed.

To increase the sample, 490 manufacturing subsidiaries with more than 50 employees but not in the ACR list were identified in the *Directory.* This group of firms had contact information specified for the chief executive officer (CEO) rather than the CIO. The survey was mailed to the CEO with a cover letter requesting it be forwarded to the CIO of the organisation.

Within 6 weeks of the initial mailing, 21 of the 906 (416 + 490) firms had returned completed surveys. To determine why more firms had not returned surveys and to encourage greater participation, the senior author and an assistant phoned non-respondents. A few initial phone calls indicated that many subjects no longer had the survey; hence large-scale phoning was used instead of postcard reminders. Each non-respondent received an average of three calls. When the individual was unreachable, the caller left no message, but phoned again after a few days. On the fourth try, the caller left a message requesting participation and mentioning that another survey would be mailed within a few days. In all, of the 906 possible subjects, 137 were unreachable because the subject had moved, or the company had closed, or was no longer a subsidiary. Of the remaining, 98 declined to participate because of corporate policy. Such declining is consistent with observations that subsidiary managers often lack the authority to reply to organisational surveys (Tomaskovic-Devey *et al*., 1994). A total of 130 CIO surveys were received so the effective response rate was about 19.4% (130/671).

Demographics

The respondents had been with their companies an average of 9 years. They had nearly 14 years of systems experience and 15 in manufacturing. Sixty-seven per cent had at least a 4-year college degree.

Table 4. Descriptive statistics and reliabilities

Factor	Mean	SD	Cronbach's α	Composite reliability
Autonomy for . . .	4.15	0.86		
. . . Strategic Awareness	4.19	0.93	0.95	0.97
. . . Situational Analysis	4.18	0.90	0.94	0.96
. . . Strategy Conception	4.16	0.89	0.94	0.97
. . . Strategy Selection	3.99	1.00	0.93	0.96
. . . Strategy Implementation Planning	4.24	0.92	0.96	0.98
Planning during . . .	3.81	0.80		
. . . Strategic Awareness	3.77	0.95	0.93	0.96
. . . Situational Analysis	3.74	0.89	0.93	0.95
. . . Strategy Conception	4.01	0.82	0.91	0.95
. . . Strategy Selection	3.83	0.88	0.88	0.93
. . . Strategy Implementation Planning	3.72	1.00	0.95	0.96
Procedural Justice	3.21	0.78	0.81	0.86
Weighted Achievement of Planning Objectives	13.20	4.28	0.90	0.91

SD, standard above and deviation below.

Of the respondent subsidiary firms, 44% had local sales revenues of less than $100 million. About 33% had sales between $100 million and $250 million, while the remainder had sales of more than $250 million. Fifty per cent had fewer than 500 employees locally, 19% had between 500 and 1000 employees, and the rest had more than 1000 employees.

Of the parent firms, about 35% had worldwide sales revenues of less than $1 billion. Another 33% had sales between $1 billion and $5 billion, while the remainder had sales of more than $5 billion. Fifty-seven per cent had fewer than 5000 employees worldwide, 20% had between 5000 and 15 000, and the rest had more than 15 000. Their major manufacturing sectors were fabricated metal products (17%), industrial and commercial machinery and computer equipment (11%), electronic and electrical equipment and components (11%), transportation equipment (8%), and chemicals and allied products (8%).

The means and standard deviations of the study constructs appear in Table 4. Perhaps most interestingly, the table reveals that *strategy selection* had the least autonomy (i.e. its 3.99 mean was less than all other phases at $p < 0.001$) whereas *strategy conception* was the most practiced planning phase (i.e. its 4.01 mean was greater than all other phases at $p < 0.001$).

DATA ANALYSIS

Non-response bias

Using two approaches, the returned surveys were examined for non-response bias, a prejudice toward the views of subjects who complete a survey; such a bias can result from a low response rate. Multivariate analysis of variance (i.e. a technique for simultaneously assessing

group differences across multiple dependent variables based on a set of categorical independent variables) found no differences between early and late respondents for such key variables as subsidiary employees, subsidiary sales, parent employees and parent sales (Wilks' $\Lambda = 0.83$, $p = 0.28$).

Second, the respondents in the sample were compared with the non-respondents in terms of their number of PCs, systems budget, systems employees (using data from ACR), sales, gross profit, income, return on assets and return on investment (using data from the Compustat database) via independent samples t-tests with all p-values ranging from 0.38 to 0.81 except for income ($p = 0.08$). These findings are generally consistent with the absence of the bias.

Common method variance

The possibility that the subjects provide socially desirable rather than objective answers is a concern with self-report methodology when the researcher plans to correlate responses for both independent and dependent variables from the same subject (Campbell & Fiske, 1959). The current study included three tests for such common method variance (Malhotra *et al.*, 2006).

First, Harman's one-factor test was first performed (Harman, 1967; Podsakoff & Organ, 1986). The test is often used in research in information systems (Igbaria *et al.*, 1997; Moore, 2000; Devaraj *et al.*, 2002; Barua *et al.*, 2004). All the variables were entered into a principal components factor analysis (i.e. a technique for uncovering the underlying dimensions or factors in a large set of variables). According to this technique, if a single factor emerges from the factor analysis or one 'general' factor accounts for most of the variance, then common method variance is deemed present. However, the results of the analysis revealed eleven factors with eigenvalues greater than one, and no one factor accounting for more than 26.7% of the variance. These results are consistent with the absence of common method variance.

Second, a partial correlation test (i.e. a technique for measuring the degree of association between two random variables, with the effect of a set of controlling random variables removed) was used. The highest factor from the factor analysis was added as a control variable on the dependent variable in the partial least squares (PLS) model. The highest factor is assumed to contain the best approximation of the common method variance (Podsakoff & Organ, 1986). The r-square (whose significance is equivalent to that of the regression coefficient for the added control) changed from 0.32 to 0.35, a difference not statistically significant, again suggesting no substantial common method variance.

Finally, the current study used a more conservative test of common method variance. That test used a marker variable, a theoretically unrelated multi-item construct, to identify such variance (Lindell & Whitney, 2001). The procedure adjusts study correlations using the second lowest correlation among a set of constructs as a surrogate for the marker variable. In the current study, six of the seven paths (found statistically significant in the Results section) remained significant after adjustment, suggesting the absence of common method variance in them. One, found significant at the $p < 0.05$ level (actually $p = 0.042$) did not remain significant after adjustment (it became $p = 0.063$), thus raising the possibility that such variance may have

had a role. However, that path is considered significant in the discussion of the results because the test is conservative, the other two tests did not detect the variance, and the adjusted *p* value remained close to 0.05.

Content validity

The derivation of the scales from past research and their use in other studies support their content validity (Kim & Mauborgne, 1991; 1993a,b; 1996; Raghunathan & Raghunathan, 1994; Taggart, 1997; Papke-Shields *et al.*, 2002; 2006; Newkirk *et al.*, 2003; Wang & Tai, 2003; Tseng *et al.*, 2004). Their pilot testing does likewise.

Reliability

Reliability refers to the consistency of a set of measurements. The Cronbach's alpha measure of reliability for each construct exceeded 0.80, well above the 0.70 criterion (Nunnally, 1978). Furthermore, the composite reliabilities (Fornell & Larcker, 1981) of all the scales exceeded 0.90. These findings thus support the reliability of the constructs.

Convergent validity

Convergent validity refers to the degree to which items in a construct are related to other items (in the same construct) that they theoretically should also be related to. The PLS procedure of PLS-Graph (Version 3.0, http://www.plsgraph.com/) was used to assess scale convergent validity (Chin, 1998). The stability of the estimates was tested with a bootstrap re-sampling procedure (1000 samples) (Mooney & Duval, 1993). For each latent construct, the observed variables loaded significantly ($p < 0.001$) on their respective latent factor and almost all path loadings exceeded the recommended 0.707 (Hair *et al.*, 1998). The average variance extracted (AVE) for each construct exceeded 0.50 (Hatcher, 1994). These results support the convergent validity of the constructs.

Discriminant validity

Discriminant validity refers to the degree that items in constructs that theoretically should be unrelated to each other are, in fact, observed to be unrelated to each other. Support for discriminant validity was shown through an AVE test and the examination of cross loadings (Hatcher, 1994). In the AVE test, the square root of the AVE for each construct exceeded the correlations between it and the other constructs. Moreover, no observed variable cross-loaded on another construct. In fact, the entire validation procedure did not result in the dropping of any items.

Structural model

To test H1, H2 and H3, an initial PLS run examined the overall relationships between planning autonomy, procedural justice, planning and planning effectiveness. To control for the

nationality of the parent company in that model, dummy variables were created for the five main nationality groups in the survey (Canada, Germany, Japan, UK and Switzerland); for example a subject from Canada had a value of one for the Canada variable and values of zero for the Germany, Japan, UK, Switzerland and other country variables. To control for industry, the five main industry groups (fabricated metal products, industrial and commercial machinery and computer equipment, electronic and electrical equipment and components, transportation equipment, and chemicals and allied products) were also included as dummy variables. To control for subsidiary size, the number of employees was included. To control for interdependencies among the subsidiary and the multinational group, the model included variables for subsidiary purchases from the parent and other subsidiaries, subsidiary sales to the parent and other subsidiaries, and subsidiary modifications to products of the parent.

Lastly a score, CD_j, for the cultural distance of each subsidiary from the parent was calculated. The score was based on the deviation of the parent's country from the USA for each Hofstede cultural dimension using this formula (Kogut & Singh, 1988). Here is the formula:

$$CD_j = \tfrac{1}{4} \sum_{i=1,4} [(I_{ij} - I_{iu})^2 / V_i]$$

In the equation, I_{ij} stands for the index of the ith cultural dimension from j^{th} country, V_i is the variance of the index for the ith dimension, and u indicates the US cultural distance was included as a control on procedural justice whereas the other variables were controls on effectiveness. No control variable was significant.

The significance of the path coefficients for the hypothesis testing was found using a bootstrap re-sampling procedure (i.e. a method for drawing repeated samples from an original data set to compute a test statistic) with 1000 samples (Chin, 1998). Second order constructs (i.e. constructs made up of other constructs) represented planning autonomy and planning itself. The path from planning autonomy to procedural justice (0.37, $t = 5.30$, $p < 0.001$ for H1), from procedural justice to planning (0.29, $t = 3.06$, $p < 0.01$ for H2), and from planning to planning effectiveness (0.61, $t = 7.99$, $p < 0.001$ for H3) were all significant. These findings, shown in Figure 3, give overall credence to the relationships between the constructs.

Procedural justice was also tested as a mediating variable. First, continuing to use second order constructs in PLS but in two separate, additional runs, the path from planning autonomy to planning was 0.38 and from planning autonomy to procedural justice was 0.34, both statistically significant ($p < 0.001$). When the effect of procedural justice on planning was removed (i.e. it was used instead as a control in a third run where planning autonomy was the
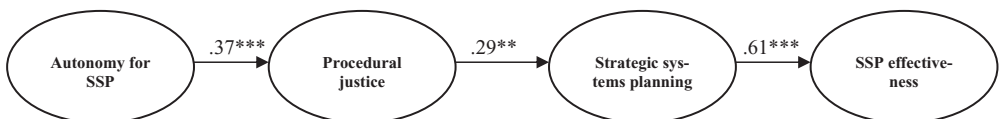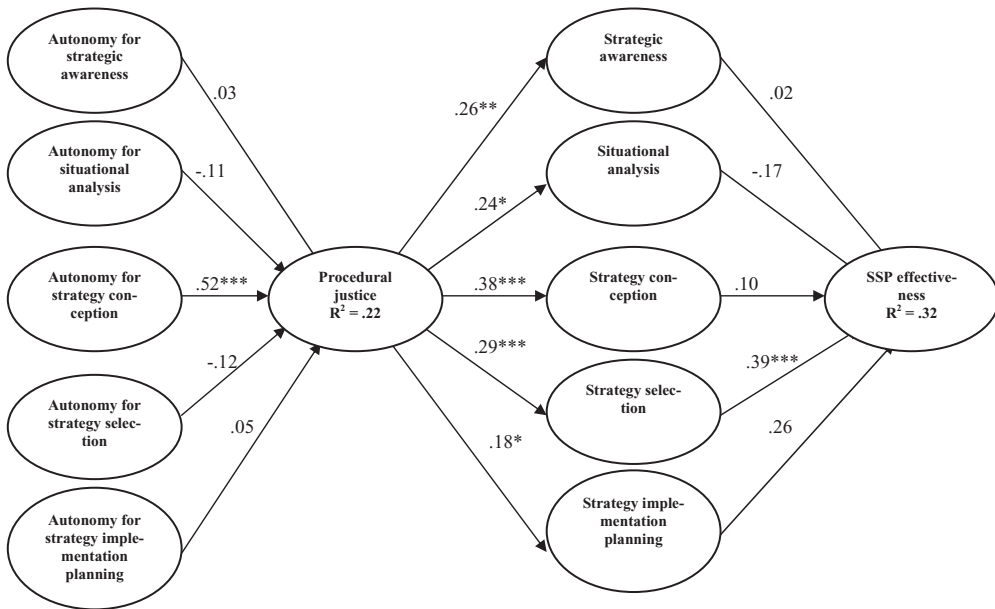

Figure 3. $**p < .01$ and $***p < .001$.

Figure 4. The decomposed structural model. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

independent variable and planning was the dependent variable), the path from planning autonomy to planning was reduced to 0.32 ($p < 0.001$) while the partial effect of procedural justice on planning was 0.20 ($p < 0.05$), thus indicating partial mediation (Howell, 2001).

Figure 4 shows the structural model for the hypothesis testing for the individual planning phases, again using PLS and the bootstrap procedure with 1000 samples. The path from *strategy conception* to procedural justice (H1c) was significant (0.52, $t = 3.36$, $p < 0.001$). Also significant were those from procedural justice to *strategic awareness* (H2a; 0.26, $t = 2.80$, $p < 0.01$), *situational analysis* (H2b; 0.24, $t = 2.33$, $p < 0.05$), *strategy conception* (H2c; 0.38, $t = 4.86$, $p < 0.001$), *strategy selection* (H2d; 0.29, $t = 3.04$, $p < 0.001$) and *strategy imple-mentation planning* (H2e; 0.18, $t = 2.05$, $p < 0.05$). Finally, the path from *strategy selection* to SSP effectiveness was significant (H3d; 0.39, $t = 3.27$, $p < 0.001$).

DISCUSSION

The objective of this research was to test relationships among SSP and its autonomy, procedural justice and planning effectiveness in response to management's pressing need to understand how to delegate autonomy in order to better plan in the especially difficult context of multinational firms. The study found support for the three broad hypotheses (H1, H2 and H3 with the second order analysis) in the high-level model, and elucidated those findings with

support for seven of the 15 component hypotheses using the first order analysis. It found support for the hypothesis that *strategy conception* predicted procedural justice (H1c), for all five hypotheses that procedural justice predicted SSP phases (H2a–e), and for the hypothesis that *strategy selection* predicted SSP effectiveness (H3d).

These findings are generally consistent with job characteristics and procedural justice theories. According to the theories, when managers receive more autonomy, they are more satisfied and feel that they are treated more fairly (Hackman & Oldham, 1976). When they feel that they are treated more fairly, they work harder and perform better (Organ, 1988a; Kim & Mauborgne, 1993a).

The impact of autonomy on procedural justice

Whereas Hypothesis 1c, that greater autonomy for *strategy conception* would lead to greater procedural justice, was strongly supported ($p < 0.001$), the other hypotheses (1a, 1b, 1d and 1e) in which planning autonomy predicted procedural justice were not. Perhaps *strategy conception* – that is, envisioning alternative uses of information systems, projecting scenarios for future growth, and identifying opportunities for competitive and performance advantages – requires the greatest imagination and creativity in the planning process (Burstein & Linger, 2002). Perhaps planners' appreciation for the freedom to be creative produces such distinctive support for this hypothesis (von Hellens, 1995; Brandt, 2002). Perhaps the relative lack of creativity in the other four phases produces substantially less of Hackman & Oldham's (1976, p. 255) 'experienced meaningfulness of the work,' and hence markedly less procedural justice.

The impact of procedural justice on planning

The research also found support for Hypotheses 2a through 2e, i.e. greater procedural justice is associated with greater *strategic awareness* ($p < 0.01$), *situational analysis* ($p < 0.05$), *strategy conception* ($p < 0.001$), *strategy selection* ($p < 0.001$) and *strategy implementation planning* ($p < 0.05$). Perhaps procedural justice had the strongest predictive effect (i.e. it had the highest coefficient) on *strategy conception* because that phase requires the greatest creativity (Schlender & Sung, 2002) and creativity thrives in an environment of freedom (DiPietro, 2003). Interestingly, *strategy conception* had the highest mean. During a post-survey phone conversation with one of the authors to explore the conjecture about the great impact of *strategy conception*, one survey participant seemingly agreed by saying 'the creativity of strategy conception is gratifying' whereas another suggested during a different conversation that the 'greater ownership and pride in thinking something up' might be responsible.

Procedural justice had a relatively weak predictive effect on *situational analysis* (i.e. with the second lowest coefficient). Perhaps this was because that phase is the most procedurally based and thus least creative (Choo, 1999; Ngamkroeckjoti & Johri, 2000).

On the other hand, procedural justice had its weakest effect on *strategy implementation planning* (i.e. with the lowest coefficient). Perhaps procedural justice does not motivate *strategy implementation planning* as much because subsidiary managers know in advance that

implementation will be the major impediment to effective SSP (Gottschalk, 1999). Interestingly as Table 4 shows, *strategy implementation planning* was the phase with the greatest autonomy and the one least carried out (albeit just slightly).

The impact of planning on planning effectiveness

Hypothesis 3d, predicting that greater *strategy selection* would be associated with greater planning effectiveness, was strongly supported ($p < 0.01$), though the other hypotheses related to the impact of the planning were not supported at all. The rationale for the hypothesis was that autonomy for this phase lets subsidiary managers select the strategy that best meets their needs. The support of this hypothesis confirmed the expectation that subsidiary managers produce more effective systems plans when they carried out *strategy selection*.

Strategy selection* is perhaps the focal point of the SSP process. The three preceding phases, *strategic awareness*, *situational analysis* and *strategy conception*, all simply set the stage for the final selection of a strategy, and therefore perhaps the lack of support for their hypotheses is not so surprising. The final SSP phase*, strategy implementation planning,* is the realisation of the selected strategy; perhaps the lack of support for this hypothesis is not so surprising because implementation is the major impediment to effective SSP (Gottschalk, 1999). During a phone conversation well after the survey to explore this conjecture, one survey participant agreed by saying 'implementation is a lot more difficult than selection.' Another participant, however, stated during a different conversation that 'selection brings people together and creates consensus' to explain why the impact of autonomy might be so great.

Strategy selection* is, in a sense, the culmination of SSP. Interestingly, although it was the strongest predictor of effectiveness, it had the least autonomy (see Table 4). Perhaps subsidiary managers realise that *strategy selection* is so important, and are especially frustrated by their lack of autonomy for it.

IMPLICATIONS FOR FUTURE RESEARCH

Of the five planning phases, only autonomy for *strategy conception* (H1c) predicted procedural justice. Future researchers could investigate reasons for the lack of support for the expected relationships of autonomy with procedural justice for the other four phases. We have suggested that the creativity inherent in *strategy conception* in an autonomous environment may have distinguished that phase from the others, but future researchers might test that reason and seek additional reasons that the other phases did not predict procedural justice.

The predictive power of *strategy conception* autonomy within the model suggests its importance in SSP. Thus, future researchers might investigate its antecedents.

Strategy selection* predicted effective planning (H3d). The unsupported relationships between the other four planning phases (*strategic awareness*, *situational analysis, strategy conception* and *strategy implementation planning*) with the dependent variable also provide grounds for future study. The current study speculated that because s*trategy selection* culminates the

planning process, it may be the most critical to the achievement of planning objectives. Future researchers might seek reasons why the other four phases did not predict the achievement of objectives.

The application of the job characteristics and procedural justice theories in this study demonstrates their usefulness in systems research. Future researchers might apply the theories in other areas of such research where employee motivation can be a key research element. Such areas might include systems analysis and design as well as programming and other more technical endeavours necessary to create decision support and other information systems.

All of the nations represented in the current study were highly industrialised and sophisticated in IT use. Future researchers might have different results in firms in less-developed nations.

One limitation of the current research was the use of single respondents for each firm. Although the three tests for common method variance did not reveal any problem, future research should employ multiple respondents from each firm. A second limitation was the subjective variables. Autonomy and procedural justice are perceptual in nature and subjective measures are common in planning research, but future studies might try to use objective ones for planning and effectiveness.

IMPLICATIONS FOR PRACTITIONERS

This study provides implications for practitioners. First, it draws their attention to the potential impact of procedural justice and of job design. Practitioners may use the items in the measures of procedural justice to help them assess the feelings of fair treatment by subsidiary managers in their organisations. For example, parent managers might attempt to assess the extent that bilateral communication exists between themselves and managers at the local company, or the extent local managers can challenge and refute the strategic views of parent company managers. Parent managers might distribute anonymous questionnaires or might attempt to elicit views from focus groups. Questions about being treated fairly are difficult to ask objectively, but asked objectively, their answers might be surprising and useful.

Practitioners may use the items in the measures of autonomy of SSP to help them assess the extent of independence that local managers believe they have. Again, subsidiary managers' answers, if given freely, might be surprising and useful.

The study suggests that parent managers might want to create feelings of procedural justice in their subsidiary systems managers because procedural justice appears to inspire, and such planning predicts planning effectiveness. Parent managers might be especially interested in procedural justice in terms of *strategy selection* because of its particular impact on planning effectiveness. Parent managers might thus, for example, encourage independence of subsidiary information systems managers in identifying new business processes, identifying new IT architectures, identifying specific new projects and identifying priorities for new projects. Parent managers might also discuss among themselves their openness to approving such initiatives.

The study also suggests that parent managers of multinational firms may be able to create the feeling of procedural justice for those subsidiary systems managers by designing those managers' jobs with more autonomy. Parent managers might do so in particular for *strategy conception* in the planning process because of the impact of autonomy for it on procedural justice. Parent managers might thus encourage independence of subsidiary managers in the creative processes of identifying major IT objectives; identifying opportunities for improvement; evaluating opportunities for improvement; identifying high-level IT strategies.

At the same time, subsidiary managers may want to seek more SSP autonomy. The results in this study suggest they may want to attempt to persuade parent managers to grant such autonomy to them in order to improve their SSP effectiveness. Subsidiary managers might thus increase efforts to explain to parent managers that they (the subsidiary managers) are probably more knowledgeable about local culture, language, data export control, taxes, other laws, accounting regulations, exchange rate risk, national infrastructure, systems staff availability, labour and trade unions, and that thus there are advantages of greater local control of the choices of new information systems at their local organisations.

CONCLUSION

Effective SSP can assist managers in choosing from the myriad possibilities those new systems investments that align best with their business objectives and support their business strategies, whereas ineffective planning can result in the selection of new systems investments that waste scarce resources and fail to address organisational objectives. This study used job characteristics and procedural justice theories to develop hypotheses that it tested on data from a postal survey of 130 CIOs using PLS analysis. A second order SSP autonomy construct predicted the perceptions of procedural justice, procedural justice predicted a second order SSP construct, and the SSP construct predicted SSP effectiveness. A decomposed model showed that autonomy in the especially creative strategy conception phase of planning predicted procedural justice. Procedural justice predicted all of the phases of SSP, while the strategy selection phase alone led to planning effectiveness.

The current study contributes both theoretically and practically. It first contributes by illustrating the applicability of job characteristics and procedural justice theories in SSP research, and thereby suggesting their further application in the field. Future researchers might use the theories to better understand such planning in terms of the relationship of information systems professionals with top management, users and each other.

The study further contributes to theory by supporting relationships about the effect of SSP autonomy in general and in one particular SSP phase on procedural justice, of procedural justice on all SSP phases, and of SSP in general and one particular phase on effectiveness. Its failure to support particular hypotheses permits speculation about extensions to the theories, and thus motivates future research. In addition, the validation of the instruments contributes theoretically by confirming the existence of their constructs.

The study contributes to the practice of the management of SSP by showing the prominence of the impact of procedural justice on such planning for all five phases. It thus signifies the

all-embracing impact of the feeling of being treated fairly, and it suggests that multinational managers cultivate procedural justice among their subsidiary managers, especially for the practice of *strategy selection* which so strongly predicts effectiveness in planning. It further suggests that subsidiary information systems managers seek procedural justice from corporate management for the same reason, and especially for *strategy selection*.

It contributes to the practice of SSP by suggesting that multinational managers might concentrate on providing autonomy, and especially for *strategy conception*. This is because it appears to engender procedural justice.

In conclusion, this research contributes by helping senior executives in multinational companies respond to their pressing need to understand and to improve the delegation of autonomy in order to bring about better decision-making in the especially difficult context of SSP in multinational firms. The research underscores the impact of the autonomy to be creative (H1c) and the impact of the sense of fair treatment (H2a–e) in the context of limited autonomy for the choice of the strategy (i.e. *strategy selection* had the least autonomy). It also highlights the effect of the choice of the IT strategy (H3d) in contrast to the other planning phases. It thus suggests the delegation of more autonomy and the promotion of more procedural justice by senior executives of multinational firms to their subsidiary managers.

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Biographies

Dinesh A. Mirchandani is an Associate Professor in information systems in the College of Business Administration at the University of Missouri St Louis. He received a PhD in Business Administration (MIS) from the University of Kentucky, an MS in Electrical Engineering from Purdue University, and a Bachelor's Degree in Electronics Engineering (with honours) from the University of Bombay. His research interests include information systems planning and electronic business. His papers have been published in academic journals such as *Communications of the ACM*, *Journal of Organizational Computing and Electronic Commerce*, *International Journal of Electronic Commerce*, *Information & Management*, and *Omega: The International Journal of Management Science* among others. He is a member of the Association for Information Systems.

Albert L. Lederer is a Professor in information systems at the Gatton College of the University of Kentucky. He holds a BA in Psychology from the University of Cincinnati, an MS in Computer and Information Sciences from the Ohio State University, and a PhD in Industrial and Systems Engineering from Ohio State. His articles on his major research area, information systems planning, have previously appeared in *Information Systems Journal*, *European Journal of Information Systems*, *MIS Quarterly*, *Journal of MIS*, *Information Systems Research*, *Decision Sciences*, the *International Journal of Electronic Commerce*, and a variety of other academic and practitioner journals. He is a member of the Association for Computing Machinery and Association for Information Systems.