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Group Support Systems:

Barriers to Adoption in a Cross-Cultural Setting

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Group Support Systems: Barriers to Adoption in a Cross-Cultural Setting

Abstract

This paper develops a model to explain how Group Support Systems (GSS) may be received in different cultural settings - national and organisational. The model is supported by the views of Information Systems professionals regarding the suitability of GSS in those different cultural settings. A detailed investigation into the suitability of adopting GSS in organisations in Hong Kong is undertaken with three cases presented here. We argue for greater sensitivity when attempts are made to transfer technology from one culture to another, as well as the need to develop indigenous solutions that do fit with cultural norms. We also believe that studies documenting the organisational use of GSS - successful and unsuccessful - are essential.

Introduction

Meetings constitute an almost universally accepted component of the way that organisations do business. Meetings are also notable (or notorious) for their shortcomings, which we argue are also near universal. Various studies over the last 25 years (Mintzberg, 1973; Monge et al., 1989; Panko, 1992) have shown that managers and executives tend to spend a large percentage of their working time in meetings, but that this time is generally unproductive. The lack of productivity may be attributed in part to what we characterise as process losses - problems involving communication, teamwork and workgroup efficiency.

Group Support Systems (GSS), a technology that enables and facilitates various forms of group communication, has been suggested as a tool to improve

meeting productivity. Substantial work has been undertaken in the laboratory and more recently in the field (see e.g. Dennis et al., 1991; Benbasat and Lim, 1993; Pervan 1994 for reviews). Research data from field studies suggest that GSS do indeed help meetings to be more productive, as well as improving participant satisfaction with the meeting processes, and reducing costs of time and money (see e.g. Post, 1993).

A typical GSS comprises a suite of software tools used to focus and structure group deliberation, reduce the cognitive cost of communication, and ease the burden of information access as team members make a joint cognitive effort towards a goal. Participants can enter their contributions simultaneously into a network of personal computers. The system immediately makes each contribution available to all participants on their workstations (Davison and Briggs, 1997). GSS may, however, also produce negative effects, such as a reduction in communication intimacy if all communication is electronic, and the tendency of some team members to free-ride on the contributions of others.

Experimental research in the GSS area has predominantly been undertaken in North America, where student subjects are required to use a GSS to solve designed problems, often with predictable outcomes or solutions (see Pervan, 1994). Needless to say, such students have little vested interest in the tasks they perform - except to get their course credits or other incentives provided. More recently, field research has been conducted with business executives, professionals and diplomats with a variety of real-world tasks (e.g. Lyytinen et al., 1993; Hitchcock et al., 1994). As we indicated above, however, published research tends to paint a rather rosy picture of GSS, often focusing on the benefits achieved in GSS meetings (Dennis et al., 1990; Nunamaker et al., 1989) but paying little attention to the

documentation of GSS failings and failures (Grudin, 1994; Vreede and Muller, 1997). In the following section we examine some of these problems and then present the rationale for and layout of this study.

Problems in GSS Research

A serious problem with GSS research is that, very often, little justification is given for why a GSS was thought to be a suitable tool for a particular group and its task or problem. It is unlikely that GSS constitute a suitable tool for all kinds of problems or tasks and in all organisational and geographical environments, given the wide variety of task characteristics and work practices that exist in different cultures. Therefore, a reasoned justification as to the potential suitability of a GSS to address a group's problems would be valuable in helping both researchers and managers understand when GSS use is most appropriate. However, this justification, together with an attempt to inject some cultural or task analysis into the 'decision to use a GSS' process, is seldom reported.

With regard to the differences that exist between cultures, a second key problem in GSS research has been the predominance of work undertaken in North America, with the result that results or outcomes can only reasonably be generalised to the North American environment. This cultural limitation is important, and is illustrated by Watson et al. (1994, p.45), discussing GSS designs, who state: "the designs of current GSSs are based on North American concepts of desirable group behaviour. Oriental cultures have a different model of desirable group behaviour". We would argue that all cultures have different models of desirable group behaviour and that in consequence, these different models will affect the way in which meeting participants interact with each other, with or without a GSS, in different cultures.

A further concern about the GSS research literature is that it tends to focus almost exclusively on success components (see e.g. Nunamaker et al., 1988, 1989; Jessup and Tansik, 1991; Zigurs et al., 1988) and success stories (see e.g. Dennis et al., 1990). Published reports documenting failures either to adopt or to use GSS are rarely encountered. Despite this propensity to report successes, the research literature is replete with instances of results that are inconsistent with other results. Jessup and colleagues (1990, p.313), for example, discussing the role of anonymity in GSS research, comment: "Unfortunately, empirical investigations thus far provide confusing results".

Various explanations have been suggested for these inconsistencies, for example:

- the lack of theory-driven methodological research (Rao and Jarvenpaa, 1991);
- the prevalent use of students as subjects,
- the preference for using small-sized groups, and
- the fact that these groups are formed for the sole purpose of the task studied (Pinsonneault and Kraemer, 1990); and
- even experimental design itself (Galliers and Land, 1987).

Furthermore, Pervan (1994) notes that there has been insufficient replication of experimental conditions to make anything more than the most tentative of generalisations about GSS performance.

Anecdotal evidence from a broad spectrum of GSS facilitators in North America, Europe, Southeast Asia and Australasia, solicited by e-mail through the discussion lists GSS-L and ISWORLD, suggests that there is a far higher awareness

of GSS failures than the published literature would suggest. Key contributors to GSS failure appear to be:

- mismatching software tools and the task to be performed;
- a lack of awareness concerning internal political issues that permeate or underlie a group and its interrelations;
- insufficient experience in facilitating groups or inability to adapt a facilitation style to a group;
- not being able to identify a GSS champion who can both promote a GSS to the organisation and follow through with its implementation;
- the meeting owner fearing that he may lose control and/or encourage a challenge to his authority;
- the facilitator not realising that there is a mismatch between the implicit culture of the GSS and the actual culture of an organisation.

This paper aims to progress some of these items by offering supporting evidence.

Layout of this Study

In this study we examine reasons for the failure of organisations to adopt GSS. In order to facilitate our investigation, we make use of a model (Davison and Jordan, 1996) developed to help explain how different cultures have different expectations and concepts about the way information is distributed and manipulated in organisations. The model introduces and explains factors which may influence the adoption of GSS (as well as other technologies) in different cultures. Opinions collected from Information Systems (IS) professionals in eighteen countries world wide illustrate the propositions in the model. Furthermore, we describe cases where we attempted to introduce GSS in Hong Kong - and then reason why these attempts

have failed. This will lead to some lessons we have learned that improve our understanding of why the failures occurred.

A Model to Explain how GSS Operate in Different Cultures

The literature addressing the role and use of information in organisations is substantial and typically relies on the organisation structure as intermediary (Jordan, 1995). Within that literature there is limited reference to culture, and the work of Hofstede and Boisot is most prominent. Davison and Jordan (1996) developed a multi-cultural framework of organisational forms and national cultures from various sources. Their framework draws upon several areas of literature, including Hofstede's (1980, 1991) work into national cultures and work on organisational forms undertaken by Boisot (1987).

Hofstede suggests that two of the cultural dimensions - power distance and uncertainty avoidance - are of key importance to understanding organisation structure. These are characterised by Hofstede (1991, pp.261-263) as follows:

- **power distance:** the extent to which less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally;
- **uncertainty avoidance:** the extent to which members of a culture feel threatened by uncertain or unknown situations;

Hofstede then uses these dimensions to develop four 'implicit models' - generic organisational structures that allow us to address the information approaches. These implicit models have some similarities to the results of Boisot

(1987) where, in describing how information is managed in organisations, reference is made to two attributes of information, viz. codification and diffusion:

- **codification:** the degree of formal representation,
- **diffusion:** the degree of spread throughout the population

Dichotomising these two attributes, Boisot produces four organisational forms, as illustrated in Figure 1 below. Codified information is most usually found in formal business settings and so produces the major structural forms. If information is widely distributed (i.e. diffused) a market structure is in effect, whereas if it is centralised, a bureaucracy form results. A clan has diffused but uncoded information, but a fief is controlled by an individual, in whose mind most of the real information resides.

Figure 1 Organisational Forms with Information Codification and Diffusion (Boisot, 1987, p. 100)

Bureaucracy	Market	CODIFIED INFORMATION
Fief	Clan	
UNDIFFUSED INFORMATION	DIFFUSED INFORMATION	UNCODIFIED INFORMATION

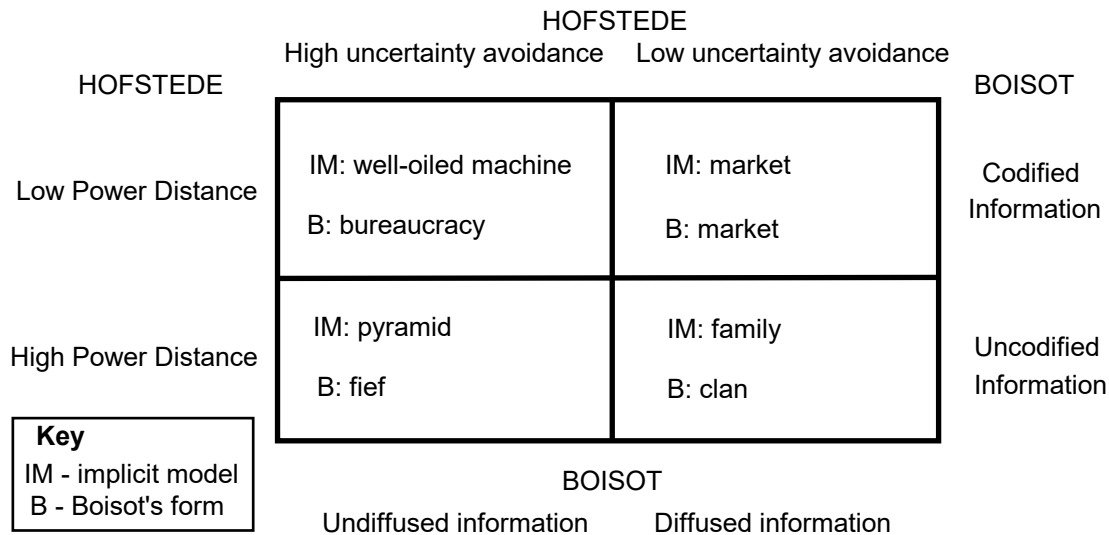
A GSS can be seen to promote both codification and diffusion in that it helps to structure or codify information, while also diffusing or disseminating it to all members of a group. Therefore, we might expect a market-type organisational form to adopt a GSS most easily, since an existing tendency to diffuse and codify information is supported by a GSS. On the other hand, a fief-type organisational

form could be expected to resist adoption of a GSS most strongly, since the information management style is entirely different. We will discuss this further below.

Both Boisot and Hofstede identify four generic organisational structures and, in addition, there are similarities between them. Both have a 'market' structure. Boisot's 'bureaucracy' compares directly with Hofstede's 'well-oiled machine' (Mintzberg combines them as a 'machine bureaucracy'). Boisot's 'clan' has strong similarities with Hofstede's 'family' implicit model, and, finally, Boisot's 'fief' structure has strong leadership that corresponds to Hofstede's 'pyramid' implicit model. If we draw together Hofstede's implicit model and Boisot's model of organisational forms, we produce a composite model (see Figure 2 below). This model thus associates information characteristics, organisational structure and national culture.

Power distance and uncertainty avoidance are empirically established variables that can provide a more effective explanation for Boisot's organisational forms. The power distance and uncertainty avoidance dimensions are strengthened by the information codification and diffusion attributes, producing strong configurations of organisation, information and culture (Davison and Jordan, 1996).

Figure 2 The Impact of Power Distance and Uncertainty Avoidance on Organisational Forms (Davison and Jordan, 1996)

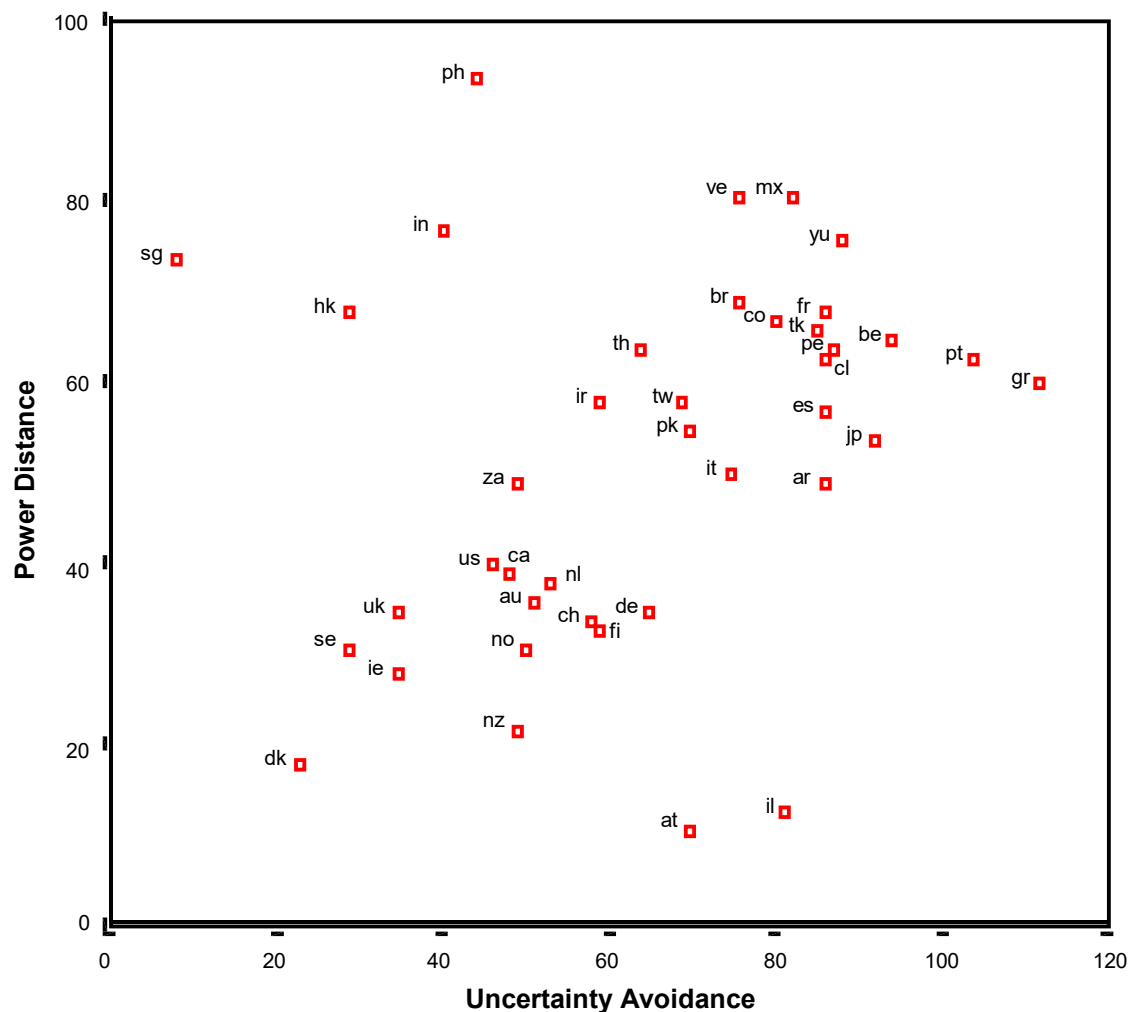


In order to give this composite model some geographical relevance, it is useful to superimpose a plot (see Figure 3) of the scores which Hofstede (1980) lists for countries for the power distance dimension against the uncertainty avoidance dimension. The country abbreviations used in Figure 3 are explained in Table 1 below.

Table 1 Country Abbreviations

ar	Argentina	dk	Denmark	it	Italy	se	Sweden
at	Austria	es	Spain	jp	Japan	sg	Singapore
au	Australia	fi	Finland	mx	Mexico	th	Thailand
be	Belgium	fr	France	nl	The Netherlands	tk	Turkey
br	Brazil	gr	Greece	no	Norway	tw	Taiwan
ca	Canada	hk	Hong Kong	nz	New Zealand	uk	Great Britain
ch	Switzerland	ie	Ireland	pe	Peru	us	USA
cl	Chile	il	Israel	ph	Philippines	ve	Venezuela
co	Colombia	in	India	pk	Pakistan	yu	Yugoslavia
de	Germany	ir	Iran	pt	Portugal	za	South Africa

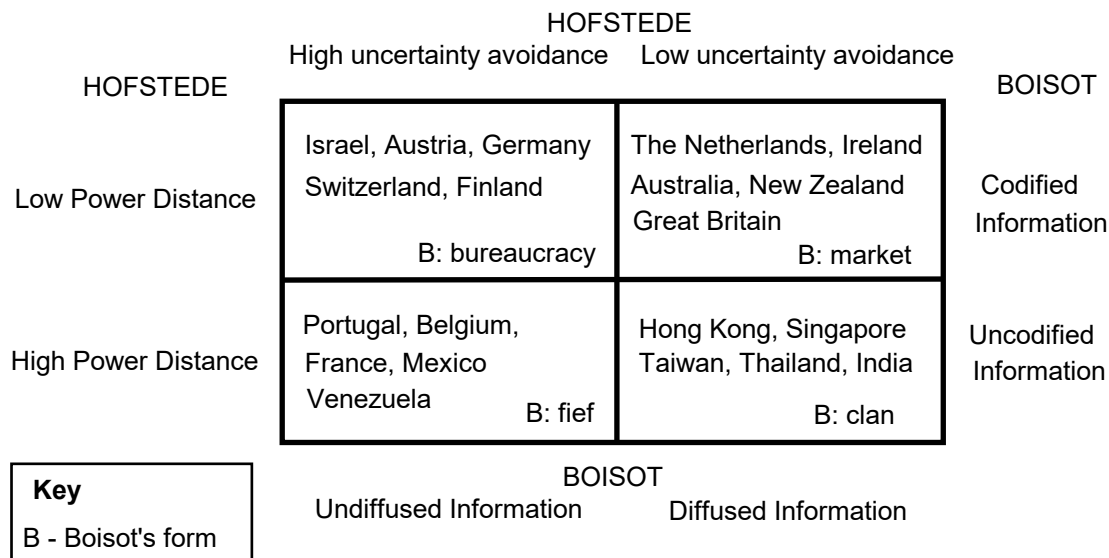
Figure 3 Scattergram of Power Distance and Uncertainty Avoidance Scores Using Hofstede's (1980) Data



If we extract example countries from this scattergram into our model, we produce the following framework (see Figure 4) which associates power distance, uncertainty avoidance, information codification and information diffusion, while also indicating some of the countries that are most likely to possess those information and cultural attributes. The framework should not be treated in a black and white fashion, i.e. within each of the four quadrants there are degrees of power distance and so forth. Furthermore, the framework does not imply that all Finnish organisations, for

instance, will be bureaucracies, but that, all things being equal, a Finnish organisation is more likely to be structured as a bureaucracy.

Figure 4 A Framework to Associate Power Distance and Uncertainty Avoidance with National Culture and Organisational Forms (adapted from Davison and Jordan, 1996)



In order to investigate the accuracy of this proposed framework, we solicited, via e-mail, the experiences of IS professionals in twenty countries around the world. Five countries were chosen from each of the four quadrants - these twenty countries are those identified in Figure 4 above. We identified ten IS professionals for each of the twenty countries using the INFOSYS email distribution list as a source. Email addresses that could be traced to each of the selected twenty countries (by the two-letter country code) were first extracted from the overall list; ten addresses were then randomly selected for each country. While our response rate was low (18.3%), and we were unable to collect data from Great Britain and Austria, the respondents were evenly distributed across the four quadrants.

The IS professionals were asked to identify (i) the potential barriers to the implementation and use of, and (ii) the potential benefits arising from the use of Group Support Systems - in their respective countries.

Analysis of the data collected generally supports the framework and its concepts, and a summary of the survey respondents' views is presented below. We focus here primarily on the barriers to adoption of the technology, since the advantages to adoption are already well-reported in the literature. However, a short summary of benefits thought by respondents to accrue from GSS technology is presented at the end of this section.

Clan

Respondents from *clan* cultures (Hong Kong, India, Singapore, Taiwan, Thailand) suggested that management would be likely to resist introduction of GSS on a company-wide basis since it leads to too wide a diffusion of information and might have the potential to reduce manager power. Furthermore, it would be hard to cost justify the expenses given management's lack of commitment. The notions of democracy and participative decision making incorporated in a GSS may be unappealing to managers in a high power distance context, where one to one communication is the preferred norm. Ordinary participants, furthermore, would be unlikely to be willing to give their real and honest opinions on topics, even if those opinions were actively sought by management and could be presented anonymously, since such free idea generation is traditionally frowned upon. Indeed, the technology supports a communication style that is so different from existing forms that considerable user resistance would be expected.

Fief

Respondents from *fief* cultures (Belgium, France, Mexico, Portugal, Venezuela) suggested that management is thought to lack a strategic IT vision (which might help in terms of the adoption of new technology) and to fear losing its power. The management style is reported as being typically unstructured, incorporating a hierarchical and centralised model that concentrates flexible power in the hands of a small minority of people. Small organisations tend to adopt control strategies based on informal, yet hierarchical interactions. The centralisation results in an unwillingness to share information with others, since it might not be in one's political self-interest to do so. Furthermore, the lack of IT personnel to promote and support GSS is seen as a critical problem – management commitment to IT is shaky.

Market

Management in the *market* culture (Australia, Ireland, The Netherlands, New Zealand) does not oppose the technology in principle but seeks to establish standards in order to ease its integration into the workplace. There is a concern that executive management processes may not yet be sufficiently mature in some cases to benefit from the increased interaction and democratic discussion styles enabled by GSS. The organisational environment would need to make adjustments to incorporate the different interaction styles that a GSS would introduce, and top management needs to be informed about and subsequently to

buy in to the benefits that can be accrued before a GSS can be used successfully.

Bureaucracy

Management in *bureaucracies* (Finland, Germany, Israel, Switzerland) share the reticence of the other organisational forms regarding its attunement with the enabling aspects of the technology. Respondents suggest that a lack of co-ordination and systematic planning at the corporate level is seen as the key problem. It may be that the bureaucratic model, with its fixed hierarchical structure, does not lend itself to the kind of co-ordination which often comes through information diffusion.

On the positive side, most respondents identify how GSS would help to improve effectiveness and efficiency of communications, and productivity of work, while empowering individuals to work in a more co-operative and mutually beneficial manner.

This model (see Figure 4) is valuable because it indicates which organisational cultures are likely to experience difficulties in adopting GSS. The reported experiences from IS professionals are also valuable, not only because they lend support to the model, but also because they augment it with significant interpretative information.

While the above email responses can be seen to be supportive of the model, they represent limited data and it is useful to take this investigation a stage further through the greater in-depth rigour of a case study approach in just one of the quadrants of the model. Niederman et al. (1996) have illustrated critical success

factors for GSS from a facilitator's point of view, but recommend that other viewpoints be considered. We now take up that recommendation by examining the prospective meeting owner's point of view.

We illustrate the model and theory used in its development with three case examples which document our experiences of attempting to persuade organisations in Hong Kong to adopt GSS. In the model description we showed that Hong Kong belonged to the clan quadrant, where uncodified but diffused information was the cultural norm.

Barriers to the Introduction of GSS in Hong Kong

Hong Kong, a territory of Great Britain from 1841-1997, has a population of some 6.5 million, approximately 97% of whom are Chinese. Culturally it looks to China for its heritage, yet it has also absorbed strong elements of Western culture (Lau and Kuan, 1988). Despite the apparent Western influence, Hofstede's (1980) study of national cultures placed Hong Kong firmly in what we have characterised as the clan form, with high power distance and low uncertainty avoidance.

There is a certain danger in considering Hofstede's research to be definitive since the instrument he used was developed by Western European social scientists and is, therefore, the product of cultural bias. Furthermore, the last twenty years have seen enormous social changes as the influences of advancing technology and globalisation have combined to accelerate the speed of national and economic development. However, replicative studies undertaken since Hofstede's original work generally confirm his findings, suggesting that Hofstede is right to perceive cultural values as slow to change (see House et al., 1997, pp.574-585, for an incisive review of the Hofstede-related literature). Thus, as we have described in our informal study

above, we are not surprised to find that placement of Hong Kong in the clan form still holds true.

In the course of exploring how GSS might function in Hong Kong, we have contacted a variety of organisations from a wide range of industry sectors, including: accounting, banking and credit, construction, entertainment and leisure, government, software development and transportation management. Three short cases that typify some of the key barriers to adoption of GSS are introduced and analysed below. In all three cases, proposals were made for the testing and organisational assessment of GSS. Responses below are from senior managers directly involved in dealing with the proposals.

International Bank

This Fortune Global 100 corporation is headquartered in Hong Kong, but provides retail, investment and corporate banking services around the world. It is well known for its innovative use of IT to support key business processes at all levels of its operation. However, the management style of the bank is often perceived to be conservative. Earlier we described how management was typically concerned about the information codification and diffusion that a GSS might bring to an organisation. In this respect, the opinions of a senior IT Project Manager are informative. He observed: "In this organisation, a few people sitting round a table do the thinking and deciding. They consult with another, but that is as far as it goes. They are all functionally computer illiterate. Once they have decided what they want, they tell us what to do and we jump. Participative discussion or decision making would be anathema to them". This management style corresponds closely with that expected in the clan form. Although the technical infrastructure of the bank is more than adequately developed to absorb the GSS technology, management will not permit a

revolution (or even an evolution) in its current organisational culture, and so any external recommendation to adopt GSS will fail.

Television Broadcast Corporation

The corporation is highly competent in the use it makes of a wide range of Information Technologies in support of its core business – providing television services to a large audience throughout Hong Kong. The offices of the corporation are spread around several floors of an office building as well as various other locations. The first author gave the corporation's MIS Director an in-depth and hands-on demonstration of the GSS software before discussing its potential applications in the organisation. The MIS Director observed, however, that the local organisational culture had developed what he characterised as a "perverse" attitude towards IT, specifically electronic mail. He observed how his subordinates often used email as a means of passing responsibility for an action to someone else. Thus, incoming emails that required action were all too often forwarded to another person for that action.

The MIS Director found this thoroughly frustrating and commented that the only effective way to get anything done was to command his subordinates to do it in person. While he recognised that GSS could play a key role in organisational communication, his employees' cavalier attitude towards email technology made him wary of introducing a GSS, since he suspected that it would only serve to exacerbate the existing problems. In addition, if electronic communications between people were anonymous, the GSS could be used simply as a channel for making accusations about others with corresponding denials and further recrimination. The need to maintain control over his employees and their tasks was of paramount

concern as his effectiveness as a manager was at stake. In consequence, he decided not to proceed with any implementation of the GSS.

Multinational Credit Card Company

This Fortune Global 500 company is headquartered in North America, though it provides credit card related services throughout the world. The Hong Kong branch of the company is its Far East regional office and serves a large local customer base, as well as international customers. Its US offices make extensive use of GSS, and therefore we invited the Far East Human Resources Director to a demonstration of the GSS. He was impressed with the software and shortly afterwards decided to implement it in the organisation. Somewhat surprised at his initiative, we questioned him as to the possible culture clash between the software and the organisational culture. He assured us that the software would not be resisted by the management culture since the organisational values were similar to those inherent in the GSS. Unexpectedly, however, the technical staff in the organisation put up a considerable resistance. They refused to agree to the installation of the software since they had not developed it themselves and it was not commonly available in the Hong Kong marketplace. As they were responsible for all hardware and software matters within the organisation, they had the power of veto over any decision made. In the face of this opposition, the Human Resources Director decided that in spite of the obvious potential benefits to the organisation, he should not insist on the adoption of the GSS.

It would appear that while the Human Resources Director could have insisted on his proposal, disregarding the views and expertise of the technical staff, in practice he chose not to do so, deciding instead that the organisation's best interests

were served by maintaining harmony. Although the Human Resources Director was considerably senior to the technical staff, he needed their co-operation.

Lessons Learned and Conclusions

In many of the organisations we have studied, management attitudes closely resemble those we predicted for clan type organisations. Clans typically exist in high power distance and low uncertainty avoidance contexts, where a small number of people at the top of an organisation engage in discussion and decision making, and everyone else does what they are told (cf. Pun, 1991). In this context, executives both intentionally avoid participative decision making and are always 'right', hence they cannot be contradicted. In this organisational culture, there exists a considerable danger that a GSS would be seen as a threat to the existing status quo and to the structure of authority present in the organisation, since it would encourage the distribution of information over which managers would have no direct control. This was exemplified by the television broadcast company case, where, in fact, the MIS Director had already started to lose control. Clans normally adopt a centralised information structure, with information selectively distributed to employees (Martinsons and Revenaugh, 1996). Widespread information diffusion, in a rigidly controlled organisation, could be construed as destructive and hence intolerable, since it could all too easily lead to the questioning of management decisions and the undermining of stability in an organisation (cf. Watson et al., 1994; Martinsons and Revenaugh, 1996). Even where management actively encourages participation, in apparent violation of the norm, there is no guarantee that junior employees will contribute actively.

As we observed earlier, GSS have been designed and developed principally in the USA and so, quite naturally and appropriately, reflect US norms of correct or desirable behaviour. On the other hand, countries with different cultural heritages have different norms. Hofstede (1987) addressed this cultural polychotomy when he described how McGregor's (1960) theories of human resource development, designed in mid-century America, were irrelevant in Indonesia where different theories that fit better with local traditions and norms should be devised. Paraphrasing Hofstede (1987) we would argue that an 'overseas' GSS may be used as a source of inspiration, but its underlying assumptions should be tested to see if they fit in with local assumptions about how groups should function. Where necessary, the assumptions should be reconceptualised according to local traditions. Such an approach has been taken by Wei and Tan (1993) who describe the building of a Chinese GSS - Chinese SAGE. The key differences between Chinese SAGE and more traditional GSSs lie in the Chinese language interface and the terminology used to describe the various activities that take place. As Wei and Tan (1993, p.1) note, a Chinese GSS "should be sensitive to the social and cultural peculiarities of the Chinese with the role of supporting, rather than altering, these social and cultural characteristics".

Thus, people should not be expected to adapt to a technology that conflicts with their own assumptions about how to work. The need to provide an indigenous solution for a group and its problems is paramount. This is explicitly related to the way in which groups are selected for GSS support. Cass et al. (1992) remark: "Practitioners must carefully identify which groups will benefit from groupware, which functions of groupware are useful to a particular team...". Not all groups will benefit from a GSS and not all tools will be suitable. The identification of which groups may

be able to benefit from a GSS is a sensitive issue since researchers and practitioners are likely to have entirely different objectives. We believe that researchers do have as much of a role to play as practitioners in the use of GSS in organisational settings, but the research methodology adopted is critical.

References

Benbasat, I.G. and Lim, L.H. (1993) The effects of group, task, context, and technology variables on the usefulness of group support systems: A meta-analysis of experimental studies. *Small Group Research*, 24(4), 430-462.

Boisot, M. (1987). Information and organizations: The manager as anthropologist. London: Fontana.

Cass, K., Heintz, T.J. & Kaiser, K.M. (1992). An investigation of satisfaction when using GDSS in dispersed locations. *Information and Management*, 23(4), 173-182.

Davison, R.M. & Jordan, E. (1996). Cultural factors in the adoption and use of GSS. Proceedings of the 2nd International Office of the Future Conference (IFIP WG8.4), Tucson, Az., April 8-11, 103-116.

Davison, R.M. & Briggs, R.O. (1997). GSS for presentation style meetings. Proceedings of the 30th Hawaii International Conference on System Sciences, Wailea, HI, January 7-10, II, 430-439.

Dennis, A.R., Heminger, A.R., Nunamaker, J.F. & Vogel, D.R. (1990). Bringing automated support to large groups: The Burr-Brown experience. *Information and Management*, 18(3), 111-121.

Dennis, A.R., Nunamaker, J.F. and Vogel, D.R. (1991) A comparison of laboratory and field research in the study of electronic meeting systems. *Journal of Management Information Systems*, 7(3), 107-135.

Galliers, R.D. and Land, F.F. (1987) Choosing appropriate information systems research methodologies. *Communications of the ACM*, 30(11), 900-902.

Grudin, J. (1994) Groupware and social dynamics: Eight challenges for developers. *Communications of the ACM*, 37(1), 93-105.

Hitchcock, R., Lewis, L.F. & Keleman, K. (1994). Building a business around group support technology. Proceedings of the 27th Hawaii Annual International Conference on Systems Science, **IV**, 63-72.

Hofstede, G. (1980). *Culture's consequences: International differences in work related values*. London: Sage Publications.

Hofstede, G. (1987). The applicability of McGregor's theories in South East Asia. *Journal of Management Development*, 6(3), 9-18.

Hofstede, G. (1991). *Cultures and organisations: Software of the mind*. New York: McGraw Hill.

House, R.J., Wright, N.S. & Aditya, R.N. (1997). Cross-cultural research on organizational leadership. in: Earley, P.C. and Erez, M. (Eds.) *New perspectives on international industrial/organizational psychology*. San Francisco: New Lexington Press, 535-635.

Jessup, L.M., Connolly, T. & Galegher, J. (1990). The effects of anonymity on GDSS: Group process with an idea-generating task. *Management Information Systems Quarterly*, 14(3), 313-321.

Jessup, L.M. & Tansik, D.A. (1991). Decision making in an automated environment: The effects of anonymity and proximity with a group decision support system. *Decision Sciences*, 22(2), 266-279.

Jordan, E. (1995). Information strategy: Alignment with organisation structure. *Journal of Strategic Information Systems*, 4(4), 357-382.

Lau, S.K. & Kuan, H.C. (1988). *The ethos of the Hong Kong Chinese*. Hong Kong: Chinese University of Hong Kong Press.

Lyytinen, K., Maaranen, P. & Knuuttila, J. (1993). Unusual business or business as usual: An investigation of meeting support requirements in multilateral diplomacy. *Accounting, Management & Information Technology*, 3(2), 97-117.

Martinsons, M.G. & Revenaugh, D.L. (1996). The impact of societal culture on IS planning and implementation. Proceedings of the 2nd Americas Association for Information Systems Conference, Phoenix, Az, August 16-18, 497-499.

McGregor, D. (1960). The human side of enterprise. New York: McGraw Hill.

Mintzberg, H.E. (1973). The nature of managerial work. New York: Harper and Row.

Monge, P.R., McSween, C. & Wyer, J.A. (1989). A profile of meetings in corporate America: Results of the 3M meeting effectiveness study. University of Southern California: Los Angeles, CA.

Niederman, F., Beise, C.M. & Beranek, P.M. (1996). Issues and concerns about computer supported meetings: The facilitator's perspective. *Management Information Systems Quarterly*, 20(1), 1-21.

Nunamaker, J.F., Applegate, L.M. & Konsynski, B.R. (1988). Computer aided deliberation: Model management and group decision support, *Journal of Operations Research*, 36(6), 826-848.

Nunamaker, J.F., Vogel, D.R., Heminger, A., Martz, W.B., Grohowski, R., & McGoff, C. (1989). Experiences at IBM with group decision support systems: A field study. *Decision Support Systems*, 5(2), 183-196.

Panko, R.R. (1992). Managerial communication patterns. *Journal of Organisational Computing*, 2(1), 95-122.

Pervan, G.P. (1994). The measurement of GSS effectiveness: A meta-analysis of the literature and recommendations for future GSS research. Proceedings of the 27th Hawaii International Conference on Systems Science, **IV**, 562-571.

Pinsonneault, A. and Kraemer, K.L. (1990) The effects of electronic meetings on group processes and outcomes: An assessment of the empirical research. *European Journal of Operational Research*, 46(2), 143-161.

Post, B.Q. (1993) A business case framework for group support technology. *Journal of Management Information Systems*, 9(3), 7-26.

Pun, H.C. (1991). Organizational behaviour: A case study, Working Paper MS91056, Business Research Centre, Hong Kong Baptist University, Hong Kong.

Rao, V.S. and Jarvenpaa, S.L. (1991) Computer support of groups: Theory based models for GDSS research. *Management Science*, 37(10), 1347-1362.

Vreede, G.J. de & Muller, P.C. (1997). Why some GSS meetings just don't work: Exploring critical success factors of electronic meetings. Proceedings of the European Conference on Information Systems, June, 1266-1285.

Watson, R.T., Ho, T.H. & Raman, K.S. (1994). Culture: A fourth dimension of group support systems research. *Communications of the ACM*, 37(10), 44-55.

Wei, K.K. & Tan, B.C.Y. (1993). Chinese SAGE: A Macintosh based GDSS. *Communications of the Chinese and Oriental Languages Information Processing Society*, 3(1), 1-10.

Zigurs, I., Poole, M.S. & DeSanctis, G.L. (1988). A study of influence in computer-mediated group decision making. *Management Information Systems Quarterly*, 12(4), 625-644.