Research

Management information systems in the Chinese business culture: An explanatory theory

Maris G. Martinsons\textsuperscript{a,}\textsuperscript{*}, Robert I. Westwood\textsuperscript{b}

\textsuperscript{a} Associate Professor of Business and Management, City University of Hong Kong, Tat Chee Avenue, Kowloon, Hong Kong
\textsuperscript{b} Senior Lecturer of Management, Chinese University of Hong Kong, Shatin, New Territories, Hong Kong

Abstract

Despite the growing economic power of the Overseas Chinese and the People's Republic of China, Chinese business practices remain poorly understood. Recent studies do indicate that Chinese managers make remarkably limited direct use of computer-based information systems. A theory is developed to explain the observed phenomenon by first contrasting Western and Chinese philosophy and then considering the Confucian-based values and behaviours which distinguish Chinese management systems from their Anglo-American counterparts. The explanatory theory suggests that the use of MIS in the Chinese business culture has been, and will continue to be, shaped by factors such as paternalism, personalism and high context communications. The implications for competing or collaborating with Chinese organizations and supplying information technology-based products and services to the Chinese market are discussed. The cross-cultural challenge facing information management researchers and practitioners is outlined. © 1997 Elsevier Science B.V.

Keywords: Chinese management; Chinese business culture; Information management; MIS; Explanatory theory; Cross-cultural management; Comparative management; Technology transfer; Business communications; Organizational behaviour

1. Introduction

The global business influence of the Overseas Chinese has been well-documented [45, 48, 71, 76]. They represent a rather dispersed but coherent and highly significant socio-economic force, both in East Asia and around the world. Estimates indicate that there are some 51 million Overseas Chinese who have collective assets in excess of US $2.5 trillion and annually account for a GDP equivalent of over US $700 billion [20]. It has also been argued that they “dominate trade and investment in every East Asian country except Korea and Japan” ([49], p. 45).

Meanwhile, the emergence of a market-based economy in the People's Republic of China (PRC) is now arguably the most important global development. In addition to presenting an assortment of investment and trade opportunities, the economic reforms in China have given rise to a new breed of local entrepreneurs and private business managers. Their organizations are increasingly operating alongside, and often competing against, well-established state enterprises. The Chinese diaspora is playing a critical role in the economic development of mainland China. The Overseas Chinese have accounted for about 80% of all
direct foreign investment into the PRC since the Open Door Policy was enacted in the late 1970s. By 1995, their cumulative financial commitment exceeded US $200 billion [50].

The Chinese on the mainland and in the diaspora share, not only an ethnic background, but also a social identity based on a common cultural heritage. Culture is the “collective programming of the mind which distinguishes the members of one group or category of people from another” [38]. It affects both practices and the theories developed to explain those practices [2, 38, 39]. It can be misleading and even dangerous to take individual traits and apply them to a large group of people. Cultural generalizations need to be empirically-grounded and commonly accepted as being true by those being stereotyped. Nevertheless, given these provisos, it can be very useful to examine the values and beliefs that characterize and distinguish a society.

The Japanese, Korean and Chinese cultures are all rooted in the social ethic espoused by Confucius and his disciples [68, 88, 92]. Although this commonality is the basis for a culturalist explanation of economic success in East Asia – the “post-Confucian hypothesis” [39, 44, 71], there are critical differences in emphasis [25, 34, 36, 92]. The Japanese may be considered akin to a block of granite whereas the Chinese resemble a tray of loose sand, with every grain representing a family rather than an individual [25]. Chinese ethics are based largely on relationships between individuals whereas those of Japanese society arise primarily from collective group norms. In terms of their history of family enterprises, the Chinese resemble the Italians more than the Japanese. However, Chinese management systems differ substantially from those prevailing in North America, Europe, Japan or Korea [26, 63, 71, 92].

Among the most remarkable and consistently reported observations about Chinese managers is that they make comparatively limited direct use of computer-based information systems [56, 61, 69, 71, 96, 97]. This cumulative evidence cannot be adequately explained by a lack of technological sophistication, institutional factors or even comparatively smaller firm sizes. The Chinese-dominated economies of Hong Kong, Singapore and Taiwan, each have significant overall levels of computerization, institutions which support IT innovation as well as substantial numbers of large firms [9, 10, 17, 59, 76, 93]. Moreover, IT products and services are within easy physical and financial reach of many businesses in these economies.

This leads us to postulate that the observed phenomenon arises from a misfit between the Chinese business culture and computer-based management information systems (MIS). The cultural values of a society do not and cannot be changed easily or rapidly [6, 36, 38]. Thus, the distinctive management systems of the Chinese, and the patterns of information flow that follow from them, may be expected to substantially influence their future use of MIS.

This article integrates and elaborates a number of ideas previously developed by the authors [58, 60, 88, 89]. We first illustrate how the prevailing philosophies, values and beliefs of Western and Chinese societies have led to very different organizational management systems and business communication patterns. Then, the distinctive role of management information in the Chinese context is considered. Those competing or collaborating with Chinese businesses will benefit from this discussion of Chinese information management practice. Those seeking to provide IT-related products and services for the Chinese market will also find it helpful to understand how information is managed and the role of IT in the Chinese business culture.

2. Western philosophy and economic organization

There is a dominant and resolute Western belief that human beings have individual rights and a legitimate appetite for private property. This in turn has spawned specific forms of democracy, capitalism and technological development [32]. Similarly, although the increasing business role of MIS has been enabled by technological advances, this development has hinged on the acceptance of a specific set of assumptions. As shown in Table 1, the rationale for using MIS stems largely from the cultural values and attitudes that are associated with Western (and particularly Anglo-American) philosophical beliefs.

As a result of these beliefs, which have been crystallized in the Weberian bureaucratic idealization [86], considerable effort has been made to organize economic activities into an orderly system. This system
Table 1
Western beliefs that foster the use of MIS

<table>
<thead>
<tr>
<th>Fundamental Beliefs</th>
<th>Justification for MIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic organization</td>
<td></td>
</tr>
<tr>
<td>Formal</td>
<td>Set rational and objective business goals</td>
</tr>
<tr>
<td>Impersonal</td>
<td>Formulate and communicate systematic policies</td>
</tr>
<tr>
<td>Systematic</td>
<td>Formalize and codify rules and regulations</td>
</tr>
<tr>
<td>Decision making</td>
<td>Monitor, control and review activities</td>
</tr>
<tr>
<td>Complex relationships can be modelled</td>
<td></td>
</tr>
<tr>
<td>Quantitative analysis can be applied to relationship models</td>
<td>Represent complex relationships using simplified, quantified and integrated forms</td>
</tr>
<tr>
<td>Relationship to the environment</td>
<td>Raise the efficiency and consistency of quantitative analysis</td>
</tr>
<tr>
<td>Man can control nature</td>
<td>The environment merits systematic study</td>
</tr>
<tr>
<td>Uncertainty can be reduced by collecting and analyzing data</td>
<td>The future can be forecast and planned</td>
</tr>
<tr>
<td>Communications</td>
<td>Decisions can be supported by extensive 'what-if' analysis</td>
</tr>
<tr>
<td>Low context</td>
<td>Codify data and messages to increase efficiency (with little loss of value)</td>
</tr>
<tr>
<td>Governance</td>
<td></td>
</tr>
<tr>
<td>Democratic tradition</td>
<td>Facilitate open information culture</td>
</tr>
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</table>

has a well-defined purpose and is governed by a rational and impersonal set of rules. This *impersonalism* is critical. The organization takes on a distinct identity, separate from that of its owners, with a structure based on an abstractly-ordered set of positions. The relationships among these positions result from the need to achieve specific and objective business goals. Information, which as Peter Drucker [18] points out is objective, logical, formal and specific, naturally supports the achievement of these goals.

Such a cognitive model diminishes the relevance of individuals and personal relationships. A bureaucratic tradition also promotes formalism. Organizational rules are codified into systematic policies, procedures and regulations. As a result, a formal and impersonal MIS is needed to monitor and control a large number and wide range of activities. The IT application provides the manager with compressed and/or filtered symbolic data on a timely and frequent basis.

2.1. Information management in Western businesses

Management science techniques are also used to enhance business decision making. This assumes a rational and logical process that can be effectively modelled and quantified [67]. Quantitative methods are used to develop a better understanding of the complex relationships between organizational and environmental variables. These methods require extensive data collection and analysis, and so their efficiency can be greatly enhanced by computers. Meanwhile, the multi-faceted and complex nature of the modelled relationships encourages integration of the resulting information systems.

The use of scientific methods further implies that nature is subject to man rather than vice versa. The environment is considered to be explainable, predictable, and even controllable. As Thomas Jefferson stated, "a man's future is in his own hands." The natural world can be investigated and analyzed, enabling individuals to forecast the future and make decisions accordingly. This logic can also be extended to business planning. Business managers assume that they can influence environmental events and circumstances. Uncertainty may be hard to eliminate, but it can be mechanistically reduced. The assumed relationship between uncertainty and a lack of information suggests that with sufficient data there is a basis for predicting the future.

The mainstream American management literature further implies that using information processing to reduce uncertainty simply requires obtaining suffi-
cient data for solving the focal problem [15, 55]. A key assumption is that managers can ask questions, obtain answers, and consequently reduce their levels of uncertainty. They can even determine specific outcomes of planned actions subject only to their own bounded rationality and resource constraints. When explicit business planning is deemed to be both plausible and useful, the development of elaborate MIS becomes inevitable. They meet the analytic needs of the corporate planner.

3. The impact of Chinese philosophy

It is difficult to directly compare Western and Chinese philosophies, because of their profoundly different foci and roles [3, 4, 14, 28]. Western philosophy stresses epistemology while its Chinese counterpart focuses on ethically-driven metaphysics. The role of philosophy for the Chinese "has been comparable to that of religion in other civilizations" (28, p. 1). Ethics provide "the spiritual basis in Chinese civilization" (28, p. 4). Rather than elaborating a systematic and reflective discourse on the human existence and the world around us, the principal intention of Chinese philosophy is to transmit instructions that promote the proper functioning of human beings [3, 28]. The intellectual disciples of the major Chinese schools of thought still commonly seek to teach ethics and reform society and identify themselves as "thinkers with a practical mission" rather than "philosophers" [4].

The themes of liberal democracy, capitalist free enterprise and the proliferation of rational technologies are all alien to the Chinese. Moreover, it is argued that the Chinese would widely view each with suspicion [32]. This can be partly explained by an underdeveloped logical and epistemological tradition [41] and the existence of 'sciences, but not science' in China [79]. It has been argued that the Chinese search for Virtue while their Western counterparts search for the Truth [39, 58]. Significant to our thesis, an analysis of power and authority systems by Max Weber [87] found that the Western processes of rationalism and formal bureaucracy had not developed in the same manner within China. The emergence of capitalism there was animated by ideals of kinship rather than by rationalism. The patrimonial power system described by Weber [87] continues to prevail in both mainland China and the Chinese diaspora [42, 63, 74, 90].

3.1. Confucian thought and Chinese management

The family "represents a natural extension of oneself" in the Chinese culture ([3], p. 6). It is the backbone of Chinese society and also its pre-eminent economic unit [7, 71, 88]. An enduring set of Confucian-based values provides the justification and support for this familism. Confucianism is a social and moral philosophy based on the life and works of Kong Fu Ze (551–479 BC), who was subsequently called Confucius by the Jesuit missionaries, and his disciples.

Strictly speaking, Confucianism is not a religion, but rather an ethical system which relies on both scholarship and speculative thought to guide social behaviour [14, 28]. Although (and partly because) it has been periodically re-interpreted to serve as a political legitimating agent [11, 14], Confucianism continues to hold considerable sway in the contemporary Chinese social milieu [68, 72, 90]. Referring to the Overseas Chinese, Redding ([71], p. 2) argues that it remains "the most apposite single-word label for the values which govern most of their social behaviour."

The mainland Chinese have also retained much of their Confucian tradition. According to a leading historian, the Confucian doctrine "still has a far-reaching influence on the common culture and psychology of the Chinese nation" [5]. Even after importing Marxist ideology and experiencing a Cultural Revolution (1966–1976), the Chinese government remains very similar to those since the days of the Han Dynasty (206 BC–220 AD). The contention that Confucian codes of conduct are firmly embedded in the Chinese Communist Party system [23] is supported by the words of PRC leader Jiang Zemin, who has stated that "Confucius was one of China's great thinkers... we must thoroughly study his fine ideals and carry them into the future" [5].

In contrast to the Western view that man can dominate nature, maintaining harmony with, and following nature is a central principle of neo-Confucianism, which incorporates elements of Taoism. Moderation in both thought and action is advocated to extend harmony and balance from the natural realm to the social realm. The Chinese also have a 'situation-
accepting’ tendency rather than the ‘problem-solving’ orientation which prevails in Western societies [2, 54]. They see little value in trying to influence external events or significantly change their surroundings. Their proclivity is to accept their environment and focus on adapting to it [28, 88, 95].

This has broad implications for the cross-cultural transfer of both management and production technologies [62, 64, 65]. It also significantly influences business planning [52, 62, 81]. Chinese managers are less inclined to use systematic and formal planning procedures than their Western counterparts. Instead, they will rely more on extrapolations from experience and intuition [62, 71]. The Chinese also view cause and effect in a multi-causal and non-linear manner.

In the Chinese cosmos, all things are interdependent. A solution to a given problem will greatly depend upon its specific and holistic context [7, 70]. Instead of conducting a rational analysis of the data related to a single issue, the Chinese seek to synthesize a wealth of knowledge that has been absorbed over many years. Decisions tend to be based subjectively on a combination of intuition and experience. Based on the problem-handling typology proposed by Ackoff [1], the Chinese are more apt to resolve or dissolve a problem, applying common sense and judgement in order to adapt to the environment, rather than seeking a scientific solution.

The approach employed by the Chinese reduces the need to construct alternative scenarios and assess possible outcomes. The concepts of rational science and rational economy in the Western sense conflict with the Chinese belief in the fundamental unity of nature [7, 87]. This helps to explain the underdevelopment of management science in Chinese organizations. The limited use of formal planning methods and quantitative analysis in private-sector Chinese enterprises [52, 71] moderates both the need for and potential value of an MIS.

4. Culture and communications

Cultural values also influence the processes which are used to transmit and interpret information [22, 75]. Most Westerners, including Americans, tend to use low context forms of communications [33]. There is a belief that the intended meaning of a message can be largely conveyed by explicit and elaborate codes—primarily words and numbers. This promotes the use of formal communications, direct speech, and a reliance on transliteration.

The democratic and egalitarian tendencies in the West have also contributed to the development of an open information culture. The importance attached to both individuals (rather than the groups) and the freedom of expression creates a need for standardized public information systems. Large amounts of data can lead to confusion and induce information overload while controversial ideas in the public domain can stimulate conflicts that threaten social stability. Despite these risks, censorship is resisted because of a belief that open enquiry will lead to a popular consensus for the best ideas [40, 82].

The Chinese see the world differently. They are socially-oriented and situation-centred rather than individually-oriented and self-centred [5, 40]. Chinese societies are based on networks of relationships. One is first and foremost a member of a collective, and the very concept of self is relational [6, 88]. The needs of the in-group supersede individual aspirations and their fulfillment. Although the English word ‘man’ implies separateness, free will and individualism, its Chinese counterpart “has overtones of connectedness and reciprocal relations” [82].

With rare exceptions, Chinese governments and people “do not recognize anything like inalienable rights” ([32], p. 957). Instead, rights are earned by participating and contributing to a social group. Social and structural harmony is created and preserved by complex relationship networks. These in turn are sustained by status hierarchies, loyalty to people (more than principles or ideas), and norms of conformity, mutual obligation and reciprocity [7, 71].

The release of information which promotes conformity and reinforces the existing relationship networks is encouraged. Conversely, messages which advocate radical change or undermine social stability tend to be suppressed [62]. Government-imposed restrictions on free speech and information access in many Chinese societies follow from the Confucian belief that those in charge have a responsibility to prevent disruptive influences from damaging the social fabric [32]. The Chinese are comfortable with limited access to information, because it is not per-
ceived to be a public commodity. Moreover, their management systems do little to promote the release of timely or accurate information. Chinese entrepreneurs typically keep information within their \textit{in-group}, rather than disclosing it for public scrutiny or use [71, 94].

The high context Chinese culture also features more implicit and indirect communications [33]. Influential works, such as the \textit{Confucian Analects} and the \textit{Tao Te Ching} (Lao-zi), are remarkably brief by Western standards. Although they contain little explicit analysis or deductive reasoning, they are full of aphorisms, allusions and illustrations [3, 28]. This follows from the Chinese ideal of being suggestive rather than articulate; “the number of words should be limited, so that the suggested ideas are limitless” ([28], p. 12). The tendency towards \textit{restricted} coding remains evident in contemporary Chinese communications [42, 47, 64]. Chinese messages are comparatively terse in words, but rich in meaning. Subtle cues are used to enrich the explicit content. Audible clues, such as tone, dynamics and any hesitation in response, together with facial expressions and body language must be perceived and interpreted in order to fully understand the words being communicated. “The syntactic sentence is not central to Chinese language” ([3], p. 6).

This helps to explain the absence of both formal communication systems and explicit, consistent or enforceable rules. For the Chinese, there is little value in codifying business information into a standardized form, especially if its context would be lost. Computers do not convey the necessary richness of meaning in a high context communication environment. Electronic information exchange would also erode status-based hierarchies by diminishing the social context and dynamic communication cues [21]. Thus, an MIS is anathema to the tacit and personalistic Chinese management system which features subtle relationship codes and bonds.

Information exchanges do depend on the nature of the relationship between those communicating. However, as with most other Chinese business interactions, a well-defined, socially-accepted pattern usually ensues. Ambiguous or conditional statements are used to maintain flexibility, promote harmony and preserve face. The aim is to achieve compromise and avoid conflict [7, 47]. As a result, the prevailing Chinese methods to motivate subordinates and resolve employee conflicts differ from those in the West [51, 90].

Chinese interpersonal relations stress harmony, conformance and reciprocal respect, rather than openness and spontaneity. Organizational coordination and control are achieved using informal, relational and implicit means rather than the formal, transactional and explicit approaches common to Western corporate settings [12, 48, 74]. The consequent need for media richness favours the use of informal and primarily verbal forms of communication [15, 38] and makes the formal constitution of MIS in Chinese organizations both difficult and undesirable [51, 88].

5. Cultural values and leadership

Scholars such as Geert Hofstede, Michael Bond and Gordon Redding have provided empirical support for the proposition that there is a fundamental difference between the Western and Chinese business cultures. Hofstede [27] studied the influence of national culture on work environments and isolated four independent dimensions of culture: power distance, uncertainty avoidance, individualism–collectivism and masculinity–femininity. Bond and Hofstede later found a fifth dimension, which has been termed \textit{the Confucian dynamism} [39]. The values for four Anglo-American societies (Australia, Canada, the United States and the United Kingdom) and three Chinese-dominated states (Hong Kong, Singapore and Taiwan) are shown in Table 2.

The three Chinese-dominated states form a comparatively tight cluster. They have significantly higher power distances and lower individualism while scoring considerably higher in terms of Confucian dynamism than the Anglo-American cluster. Subsequent research indicates that the work-related values in the PRC closely resemble those found in Hong Kong, Singapore and Taiwan [83, 88, 95]. The cumulative evidence strongly suggests that the Anglo-Americans and the Chinese differ fundamentally in their beliefs, attitudes and behaviours. This is outlined in Table 3.

Redding [71] has argued that the roots of Chinese capitalistic enterprise differ from those which Weber [85] indicated were instrumental to the development
Table 2
Scores on five cultural dimensions for Anglo-American and Chinese societies

<table>
<thead>
<tr>
<th>Cultural Element</th>
<th>Anglo-American Perspective</th>
<th>Chinese Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship to the environment</td>
<td>Dominance</td>
<td>Harmony</td>
</tr>
<tr>
<td>Fundamental social unit</td>
<td>Individual</td>
<td>Collective – The family or a similar grouping</td>
</tr>
<tr>
<td>Power distance</td>
<td>Small</td>
<td>Large</td>
</tr>
<tr>
<td>Basic form of governance</td>
<td>Mechanistic democracy</td>
<td>Organic autocracy</td>
</tr>
<tr>
<td>Problem-solving approach</td>
<td>Analysis</td>
<td>Synthesis</td>
</tr>
<tr>
<td>Primary basis for trust social order comes from-</td>
<td>Universal or systemic rule by law</td>
<td>Personal rule of man</td>
</tr>
<tr>
<td>Primary basis for power</td>
<td>The position</td>
<td>The person</td>
</tr>
<tr>
<td>Uncertainty tolerance</td>
<td>Low (problem-solving orientation)</td>
<td>High (situation-accepting orientation)</td>
</tr>
<tr>
<td>Nature of communications</td>
<td>Explicit/low context/function-oriented</td>
<td>Implicit/high context/relationship-oriented</td>
</tr>
<tr>
<td>Causality and time</td>
<td>Linear cause and effect/single cause monochronic time</td>
<td>Non-linear cause and effect/multiple causes polychronic time</td>
</tr>
</tbody>
</table>

Extracted from [37, 39].

Table 3
Contrasting Anglo-American and Chinese cultural values

<table>
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</table>

Adapted from [38, 39, 60, 62, 89].

of Western capitalism. He also suggested that Overseas Chinese business is distinguished by the following three factors:

1. paternalism – the importance of the family, with the father figure at the centre,
2. personalism – a reliance on interpersonal bonding as the basis of transaction, and
3. a sense of systemic insecurity which fosters hard work and wealth accumulation.

The high power distances and paternalistic tendencies of the Chinese have resulted in very centralized and directive management systems, which combine discipline and benevolence [71, 74, 90, 91]. Evidence from Hong Kong indicates that Chinese firms have much more centralized structures than their Anglo-American counterparts [8, 73]. Key decisions are made mostly by the proprietor, and if not by him, then often by a relative. The father figure has strong personal (rather than institutional) power and his personality has a pervasive influence on the organizational culture. He provides didactic leadership by serving as both a mentor and a role model [77]. This patriarch takes care of subordinates and protects their interests in return for their deference, respect, obedience, and personal loyalty to him [88, 91].

The Chinese concept of leadership differs from both Western and Japanese norms and conflicts with a reliance on MIS. There is no explicit dependence on subordinates nor a responsibility to adopt a team
perspective [25, 34]. Social capital is largely absent in Chinese societies [27], and therefore trust is built up and maintained on a one-to-one basis rather than systematically. This leads to distinctive in-groups and moderates the use of bureaucratic regulations. Autocratic tendencies further limit the flow of data and promote unequal access to information.

Chinese leaders are widely perceived to have a natural right to determine organizational objectives [77, 90]. Of course, the apparent acceptance of authority could alternatively conceal an insidious exercise of power through manipulation [57]. Nevertheless, Chinese businesses tend to use the entrepreneurial mode of strategy making [66]. Strategies emphasize exploiting opportunities rather than solving problems and are made by powerful individuals (rather than groups), who frequently rely on personal knowledge and intuition rather than objective criteria or formal and quantitative methods [70, 71, 82, 94]. Both strategies and tactics tend to be loosely formulated and selectively revealed [74, 88]. Few Chinese leaders feel obliged to declare or discuss their goals or the actions to be used to achieve them. They may symbolically consult their subordinates, but will rarely let them make a meaningful contribution to the decision-making process. Thus, Chinese business meetings are primarily rituals, using rehearsed discussion flows to rubber-stamp previously-made decisions. This avoids conflict in the public arena.

Such a guarded management style can be attributed to insecurity. The Overseas Chinese have faced considerable hardship and uncertainty as refugees or outsiders in their host country while in the PRC, there appears to be a pronounced and widespread fear of losing political control. From the Chinese leader’s perspective, open communications and the formalization of ideas threaten power, reduce flexibility and increase the potential for both accountability and challenge.

The storage, retrieval and transmission of electronic data could also expose their organizations to mischief or sabotage by computer hackers or cyberspace terrorists. Even as many Western firms implement open or distributed IS architectures, many Chinese executives continue to seek well-secured and centralized database management systems. This cross-cultural difference will be reflected in the markets for information technology products and services.

6. Information as a personal asset

Although information is universally valued, it is not used in a cultural vacuum. In the Chinese business culture, although information is a key source of power [77, 90], it is fundamentally a personal asset rather than an organizational resource [58, 60]. The power structure in a Chinese organization is perhaps best represented as a series of concentric circles with the patriarch in the centre [90]. Power is maintained by carefully controlling key information. Most management information really is information only for top managers. Much of it remains in a soft form – in the mind of the manager – and is verbally communicated [48, 71]. Key details, ideas and knowledge are selectively passed on to chosen individuals. This promotes a divide and rule strategy, since no other individual is privy to a full information set.

6.1. Personal connections and personal computers

Personalism and centralization dominate Chinese organizational behaviour [48, 71, 74]. Private meetings rather than written memos or reports are the primary means of communication. The face-to-face contact sensitizes the boss to the opinions and feelings of his subordinates. Employees will compete for the privileged confidence of the boss and manoeuvre to get close to him so that they can better understand his intentions. The amount of information they receive will reflect the degree to which they are trusted. Employees are also largely assessed on the basis of their loyalty, obedience and effort rather than explicit or tangible output measures. Perceived circumstances usually supersede contracted expectations for appraising performance.

New business is also often generated by introductions and personal referrals rather than more formal marketing activities. Even elaborate sub-contracting arrangements are likely to be based on verbal agreements rather than written contracts [78]. A good agreement will be self-enforcing, because each party will perceive that it serves their self-interests. Compromise during the negotiations, rather than the threat of legal action afterwards, is seen as the basis for progress. The two sides should be committed to a long-term relationship based on a high degree of personal trust and reciprocation between their leaders.
[12, 84]. Indeed, Chinese businesses have developed a molecular structure, with the activities of many small firms being loosely coordinated [12, 45, 92]. Personal trust reduces the need for the formal documentation of contractual information. This further militates against the use of a formal and integrated MIS.

The big boss is the central node for external communications. Guanxi connections, or personal relationships, are the preferred informational networks for the Chinese. Even in the age of the Internet, they remain a common substitute for more formal, impersonal and abstract sources [71, 76]. Information on new products, new technologies and new market possibilities is often accumulated by socializing with friends and acquaintances ([71], p. 18).

This blurs the boundaries between business and social activities and limits the distinction between professional and personal relationships in Chinese society. Business networks provide both material gains and the benefits of social friendship to the in-group. Information informally shared by the group is frequently used as a bargaining chip in negotiations with outsiders. Thus, even external business associations and the information they generate are not amenable to MIS.

6.2. Politics and information technology

Many Chinese firms have partially formalized some of their core operational processes by introducing either paper-based or computer-based information systems. The selected applications are usually in areas where the 'big boss' finds it difficult to be personally involved and which are relatively abstracted from more sensitive and relationship-dependent informational domains [73]. Significantly, there has been little use of IT to support or formalize the most strategic and sensitive areas [10, 71]. In the Chinese business culture, computer-based information systems provide little support for human resource management or marketing [61, 71, 97]. A high tolerance for uncertainty moderates the need for formal rules or support staff in these areas.

The ability to provide or withhold information is closely related to power and control [13]. This implies that IT can be an instrument of liberation or repression depending on how it is used. It can reinforce autocratic control or delegate decision making. Few Chinese organizational heads have introduced computing and telecommunications technology to formalize rules, empower employees or facilitate multi-directional communications. Their interests are served by maintaining prerogatives unfettered by systematic records or documented regulations.

The IT investment in the Chinese business culture has typically stemmed from a desire to monitor and control the basic operations in an expanding business [10, 71]. Even the primary aim of the national information infrastructure in Singapore is to increase economic productivity and monitoring capabilities rather than to decentralize decision making [80, 93]. In the Chinese context, IT is often used to maintain power and control. Thus, applications which are consistent with directive rather than participative management are likely to suit the Chinese market.

7. The future of Chinese management

As economic activity becomes more international, cross-cultural management issues become increasingly difficult to ignore. The Chinese are now selectively assimilating foreign technologies into many parts of their business operations [16, 65]. Despite an increase in their inter-cultural interactions, the Chinese continue to employ a unique approach to business. The trend towards globalization will undeniably blur the boundaries and distinctions between societal cultures, and promote hybridization [3, 39, 58]. However, the management systems of the Chinese are likely to reflect the inertia of their deeply-rooted values for many decades to come.

Clashes between societal traditions and emerging global developments are inevitable. The desire to simultaneously achieve economic progress and maintain information control already poses a dilemma for many Chinese political and organizational leaders. International information services such as the Internet have enormous commercial potential. However, the capability to undermine social stability by diffusing controversial ideas has prompted concerns in China and Singapore [19, 31, 53]. Even as the PRC modernizes its economy, the government is explicitly aiming to preserve Chinese philosophy and culture — spiritual pollution is not to be tolerated. As a result, IT applications are likely to create fortified islands of operational
and financial data rather than open information systems. Data filtering technologies will also be in demand [24].

Wide-spread IT usage currently does not serve the general interests of either Chinese bosses or their employees [60, 62]. Managers in the PRC worry that an MIS will reduce their discretionary power while their workers fear that labour substitution by IT will leave them without a job. As a result, computerization and the business practices that accompany them hold little attraction for either group. Both are encouraged by the limited role which MIS has played in the business success of the Overseas Chinese. The latter have been able to adapt to frequent environmental changes and flourish amidst great uncertainty. Many small and nimble Chinese firms have leveraged their deal-making skills and remarkable ability to quickly identify and exploit lucrative market niches [48, 71]. Few of them have adopted the modern management principles which stem from industrial engineering and applied psychology.

7.1. Information technology and culture

Technological innovation and economic development do exert an undeniable influence on social behaviour and management practice. Many of the larger Chinese enterprises and Sino-foreign joint ventures have introduced Western management ideas and technologies. However, even their adoption has been shaped by the socio-cultural context. Most have grafted foreign innovations onto the existing management system rather than effectively integrating the two [43, 84]. This is consistent with the notion that even as a society modernizes, it will incorporate and assimilate innovations so as to retain and perhaps even enhance traditional values [35]. For example, Eastern cultures may be expected to leverage their synthetic thinking by selectively applying analytically-derived technologies from the West [39, 58].

Technology applications can also be expected to promote the interests of those in authority. As a result of their high power distances, the Chinese may be expected to make IT investments that help to monitor and control expanding business operations and selectively communicate management directives to organizational subordinates. Meanwhile, their distinctive collectivism may be expected to encourage IT applications that help to maintain in-group relationships as well as organic (rather than mechanistic) and informal business structures.

Many norms of organizational design and management are becoming more universal as a result of the globalization process. However, many others have been found to resist change and convergence [46, 83]. Martinsons and Hempel [63] note that "beneath a business veneer which resembles that found in the West, (the Chinese have) a deeply-rooted and different social culture (which) has led to unique patterns of intra- and inter-organizational behaviour." Even the selective use of silicon chips and fibre optics has done little to change Chinese business practices [10, 76]. Subordinates continue to receive key information at the discretion of their boss rather than retrieving it from a computer-based IS. Professional management practice, such as it is taught in Anglo-American business schools, remains rare in the Chinese business culture.

Chinese managers continue to rely on informal communications and an extensive engagement with the business environment. Experience, intuition and insights from personal connections are used to assess situations and determine appropriate courses of action. This approach has been particularly effective in the emerging market economies across Asia, where reliable public information remains in scarce supply. As summarized in Table 4, this also limits the need for and potential value of Western-style MIS.

8. Summary and implications

Cross-cultural differences pose an emerging challenge to the global information management community. There is a growing amount of evidence to indicate that profound differences in societal and organizational cultures limit the applicability of many management theories and practices [22, 38, 58, 82, 89]. Management technologies developed for one context often cannot be readily transferred to another. MIS is not immune to this phenomenon. The explanatory theory presented here also suggests that factors such as paternalism, personalism and high context communications will shape the future use of MIS in the Chinese business culture.
Table 4
Chinese business culture and MIS use

<table>
<thead>
<tr>
<th>Chinese cultural characteristic</th>
<th>Nature of constraint on MIS use</th>
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<tbody>
<tr>
<td>Personal relationships are the preferred sources of business</td>
<td>Reliance on informal (primarily verbal) rather than formal (written) communications</td>
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<tr>
<td>information</td>
<td>Relaxed need to exchange information between managers</td>
</tr>
<tr>
<td>Centralized decision making</td>
<td>Relatively little information is broadcast or made accessible</td>
</tr>
<tr>
<td>Information is a major instrument of personal power</td>
<td>Data and messages are perceived to lose much of their meaning if they are encoded</td>
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<tr>
<td>High context communications</td>
<td>Reduced need for data collection and analysis</td>
</tr>
<tr>
<td>Decision making based on intuition and experience</td>
<td>Reduced need for business planning and scenario development/analysis</td>
</tr>
<tr>
<td>People should adapt to the environment rather than attempting</td>
<td></td>
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<tr>
<td>to control it in order to maintain harmony</td>
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As a result, those who interact with Chinese business leaders or develop information systems for the Chinese market should be sensitive to and take account of the distinctively Chinese information management practices. The Chinese are becoming more important in the global economy and China has emerged as an attractive and potentially enormous market for information products and services. However, in order to capitalize on the opportunities associated with these developments, adjustments in plans and actions as well as products and services may be needed. It has also been suggested that “far more strenuous efforts are required to test out our ideas in other countries, and to learn from this experience” ([30], p. S51).

With changes in their own business environments, Western managers may come to question the value of collecting mountains of data and using ever more complex and sophisticated computer-based models to analyze them [29, 58]. In recent decades, many Western organizations have selectively assimilated elements of Japanese business practice, such as the concept of total quality management. However, it has been argued that “conceptual as well as technological imperialism is alive and well” within the realm of information management ([29], p. S51).

More sophisticated and open-minded analyses of the Chinese approach to doing business and managing business information may now be appropriate. Although the warnings about studying the Chinese scientifically [6, 58, 82] need to be considered, such efforts could raise the prospects for Western business success in East Asia. Perhaps more importantly, they could clarify the limitations, conventions and appropriate future directions for information management research and practice around the world. By learning more about the practices of a foreign culture, each of us can also expect to develop a better understanding of the management systems that are being (or could be) used in our own society, and the cultural values which underpin them.

The importance of modifying management practices to suit specific contexts has already become evident with foreign market entry and cross-cultural joint venture participation. Growing concerns about the efficacy of a highly technical managerial practice and frequent data overkill may be expected to stimulate a search for alternative ways to manage information. Those seeking to find approaches that are suitable for dynamic and ambiguous business environments may wish to further examine information management practice in the Chinese business culture.

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References


**Maris G. Martinsons** is an Associate Professor of Business and Management at the City University of Hong Kong, Research Director of the Pacific Rim Institute for Studies of Management (PRISM), and Pacific Rim Editor of the *Journal of Applied Management Studies*. He has worked for DRI/McGraw-Hill, McKinsey and Co., Ontario Hydro, and the University of Toronto. His research, teaching and consulting interests include the strategic management of information resources, IT-enabled organizational change and cross-cultural technology transfer. In 1995, his work appeared in the *Handbook of IS Management, IEEE Transactions on Engineering Management, International Journal of Information Management, International Journal of Manpower, Journal of Engineering and Technology Management, Journal of Management Systems, Long Range Planning* and the *Proceedings of the Academy of Management meetings*, he received a Teaching Excellence Award, and he was the keynote speaker at the *International Association of Management* conference in Vancouver.

**Robert Westwood** was educated in the United Kingdom but has spent the last 13 years in the Asia-Pacific region. Most of that time he has been at the Chinese University of Hong Kong where he is currently Senior Lecturer in the Department of Management. Much of his research and writing has been in the area of cross-cultural and comparative management, frequently with a Chinese orientation. He is the editor and chief contributor to *Organisational Behaviour: Southeast Asian Perspectives*, published by Longman in 1992, and he has been published widely in international and regional journals. His research interests include the meaning of work, women managers and cross-cultural managerial values.