

In this issue

Endeshaw and Tung's "Teleworking"

Singapore is rapidly emerging as one of the leading economies engaged in telecommuting or telework. The combination of high economic growth, crowded traditional commuting conditions, the New economy and general information technology savvy and productivity are powerful prerequisites for telework.

The Nanyang scientists seek to establish the general trend in telecommuting in Singapore. A survey of the National Computer Board (NCB) in Singapore revealed that 43% of the workforce is engaged in information-related activities. Many organizations are experimenting with telecommuting as a means of deploying their human resources. Singapore has the highest number of workers who send and receive office information via computer away from work. In fact, 46% of Singapore respondents said they used their personal computers to exchange information.

The increasingly irrational logic of transporting employees' physical bodies across long distances just to stare at computer screens is dawning on many corporate executives the world over, not just in Singapore. The likes of Hewlett Packard, Anderson Consulting, Internal Revenue Service and IBM are known for their telecommuting pilot.

The era of vast American 'boiler rooms', full of screens, telephones and non-communicating warm bodies is over. Hardware, software and especially brainware can now be decentralized, distributed and interlinked. The first rule of the boiler room: It matters not *where* you stare at your computer or pick up your phone. Telework allows higher rates of work at home, self-service and self-employment. Housekeepers can enter the workforce, especially in Singapore, plagued by significant labor shortage. In spite of the obvious advantages, there is no accurate indicator of the trend in telecommuting. Even the Singapore Department of Statistics has not yet started putting out data on telecommuters. Traditional institutions can be so slow, unresponsive and 'out of it' that they help to dampen the economic growth.

The authors have approached a large number of firms, randomly picked from the telephone directory, to establish those involved in telecommuting. A questionnaire was then administered and follow-up telephone

calls made. The firms ranged from auditing to banking, insurance, publishing and taxation.

Internet usage is beginning to gain popularity among telecommuters. The message is that telecommuters should continually improve themselves in terms of computing skills in order to take advantage of newer and better forms of electronic communication and systems in order to stay relevant within their respective fields of activity. However, as long as the traditional subordinate is crucially dependent on the supervisor, telecommuting adoption will not take off to a significant degree, even in Singapore.

Walden, Carlsson and Liu's "Intelligent agents"

Walden, Carlsson and Liu from the LAMSR research institute have addressed the forecasting problems in the new environment of increasingly voluminous data sources, leading to information overload and its associated phenomena.

Information overload is accompanied by poor quality of decision making and doubtful reliability of the used data, combined with bloated confidence and self-confidence of human agents, derived from the huge amount of data processed. A support system with *intelligent agents* should help managers conduct constantly active scanning and interpretation activities with hundreds of data sources. Intelligent agents (software robots, cybots) should be impervious to misplaced self-confidence build up. The LAMSR was built on a Java platform and has been enhanced and developed in several versions. The first implementation was at the Alko Group (the producers of the *Finlandia* vodka). The system is expected to provide managers with a broad and comprehensive first approximation of environmental trends and events as needed, and will help them extract useful information from large volumes of data.

The authors use the label *industry foresight* to differentiate their approach from traditional forecasting based on outdated time series analysis and mathematical modeling. The scope of a foresight lies 5–15 years ahead. Modern businesses look for changing trends or the emergence of new trends – not for the extrapolation of the past. The knowledge and data from past obser-

vations are not necessarily relevant or valid in the New economy. There is a need for a new theory of forecasting: theory of foresight.

The UK Foresight programme is specified along these lines. It is to develop visions of the future, i.e., looking at possible future needs, opportunities and threats, and deciding what should be done *now* to make sure that we are ready for the upcoming new challenges.

It is therefore desirable (1) to find theoretical frameworks which can explain the scope and substance of the industry foresight, and (2) to find methods and models for describing, explaining and predicting the development of its key components. One also has to (3) find good solutions with information systems technology in order to create, maintain, modify, adapt, and update reliable and good quality foresights. The authors have undertaken this task and show an application in which scanning agents are used.

Agents based systems should be as autonomous as possible for these kind of applications in order to avoid well known human biases associated with information processing. The theory and methodology of software agents is rapidly expanding and disclosing many opportunities for designing and implementing innovative applications in a number of fields.

Bell, Coleman, Guo and Sewell's "Information systems in China"

Information systems (IS) projects are especially challenging in developing and transforming countries like China. Even in IT savvy countries the failure rates still hover about 80%. Attempting any sort of success with IS in developing economies would appear to be a recipe for disaster. The authors describe an IS project, developed jointly by the UK and China, already in the beta-testing stage and showing early signs of success. The paper describes the process, the methodology and the problems and difficulties encountered.

The project focuses on the development of a Feasibility and Appraisal Information System (FAIS) which the British team had helped the Chinese to develop jointly over the past two years. Even though the project is a top-down, expert-driven affair, the British and Chinese teams tried to enhance participation and teamwork.

The information system in question is expected to be based on Lotus Notes and the World Wide Web

(WWW), providing the Chinese with a global information awareness/dissemination opportunity and clear branding of Chinese information. The experience of the British and Chinese teams so far indicates that it is not enough to use methodology to reduce risk and vulnerability in the development of IS.

The *Soft Systems Methodology* (SSM) was applied as the core of the review approach. It was also agreed that each of the British researchers should work closely with Chinese on the three aspects of the information system:

- hardware and software,
- logical systems and system design,
- project and project data.

The softness of the approach is apparent in emphasizing celebration of project progress, informal interviews, sharing the news and talking about problems. The team was involved in hand drawing, not tidied up on a computer, drawing out tasks and issues, developing views of areas of concern. And still more of celebrating the team's joint working and friendship.

In terms of real work, a workable, modest design is being tested in a beta stage. SSM can apparently be used in a manner, which allows multiple perspectives and a holistic approach. The complexity of the project seems to be clarified. History, dominant attitudes and power structures of a problem situation call for still another approaches to be tried in China.

British researchers have tried SSM and the IS project actually advanced into the next stage – not a bad achievement in China.

Rastogi's "Question of human capital"

Human capital, knowledge management, learning corporation and intellectual resources – all these factors are undoubtedly in high vogue all around the world. Only a few post-communist and still-communist economies seem to take a strong exception from the rule.

Is human capital handled properly as a core competence rather than some HRM or personnel functional silo? Is HC the real answer to corporate competitiveness? It is clear that *knowledge* represents the new business frontier as the main form of capital. The New economy sees knowledge as a primary condition for effective coordination and usage of capital, land and labor. Yet, by itself, specialized knowledge produces

very little. Knowledge adds value to goods and services only when fully integrated into their production.

Clearly, knowledge cannot be some data warehouse, storage or database: it is not a symbolic description of action. Knowledge is action itself or, more precisely, *knowledge is purposeful coordination of action* (production process). Primary organizational activity is not producing widgets or servicing gadgets, but developing and using the knowledge required by successful production and services in a competitive and fluid environment.

Prof. Rastogi cites Matsushita, that only by the combined brainpower of all employees can a firm succeed in today's environment. People are creators (producers), owners and users of knowledge and therefore constitute company's most valuable and ultimate resource. He then tries to distinguish between human resources (HR) and *human capital* (HC). Human capital includes purpose and direction, not only skills, training and coordination per se. High levels of human resource management (HRM) have always been present in traditional, knowledge-unconscious companies. Yet, their human capital remained undeveloped, undirected and ineffective. Even the best HRM companies are repeatedly 'missing the boat' or at least efficiently 'rowing it' in the wrong direction.

Rastogi stresses the need for understanding the context of business enterprise, motivation to excel, and ability to be effective, as three dimensions of using human capital (knowledge) successfully. Production and development of human capital cannot be separated or isolated from all other processes and productions of the enterprise. It must be embedded in the network of support relationships, in its requisite *social capital*. Work excellence, skills, abilities are only the necessary conditions for HC. Sufficient conditions require human understanding of the context of business action and the relentless pursuit of learning, continuous production and reproduction of human capital.

Human capital and knowledge is not a static, fixed and unchanging stock or endowment.

Van Gigch's "Cyberspace"

Van Gigch's article argues the need for establishing some form of metasystem over the Net, in the 'cyberspace'. This type of system would be responsible for resolving unanticipated situations that due to the

web's lack of maturity have not been encountered before.

For example, denial-of-service attacks or establishing a worldwide democratic board to administer the Internet's address system are so new, that there are no technical, legal or political precedents for them.

An over-arching control system that would arbitrate over controversies, decide on the legality of new policies and, in general, act as a metalevel controller over the activities of the virtual community is needed, according van Gigch.

The nature of cyberspace is different, as a *virtual organization* is different from the traditional hierarchy. The Net can be viewed as a *community* of individuals connected through a network of electronic linkages. It can also be viewed as a *network* of computers and other devices, which communicate with each other.

To state that cyberspace is a virtual organization denotes that the entity in question differs from the traditional embodiment of the organization. It is not a formal, actuarial legal entity. It is devoid of the usual trappings of a business organization, such as buildings, offices, and formal job descriptions.

Can cyberspace and the Internet be subjected to a metacontroller? Should cyberspace and/or the Internet be subjected to any control at all?

Van Gigch argues that while cyberspace and the Internet do not physically exhibit the usual attributes of traditional organizations, they are still very real and not 'virtual' at all. They are built by real people, have a physical presence and their products and results are visible for all to see. In particular, the denial-of-service attacks are not 'virtual', they disrupt and interrupt actual legitimate businesses and threaten valuable data centers.

It is obvious that no one organization, super-agency or enterprise private or public, could fulfill all the responsibilities which a metacontroller demands, abide by the imperatives, and still be able to function as a single effective controller. Businesses are in complete accord with such proposals. They prefer 'to keep cyberspace open and free, because it sparks creativity and innovation', but they also acknowledge that 'cyberspace must be a community of shared responsibilities and common values'.

Walden and Turban's "Anywhere, anytime, anyone"

Virtual teamwork, distance work and telework are all on the rise. Groupwork, virtual teams, collaborative

work, etc. promise greater productivity through the Internet. Walden and Turban report on a long-term collaboration experiment between MBA students of Åbo Akademi University in Finland and California State University, Long Beach in the USA. A ten-hour time difference, as well as different cultural backgrounds separated the teams. Students were challenged to push the limits of Internet by collaborating on a joint task on electronic commerce with people they never met face-to-face. The teams cooperated with ten Finnish companies to create implementable plans for e-business. This paper identifies several new issues related to *distributed groupwork*.

Internet is offering the possibility for people to work together without the limitations of being in the same place at the same time. To complement the traditional face-to-face teams, the *virtual teams* are emerging to give their members more degrees of freedom. Virtual teams transcend distance, time zones, and organizational boundaries and make it possible to work together while being apart. This new form of boundary-crossing teams will be the basic working unit of the New Economy organizations. The concept of 'work-

ing anywhere, anytime and with anyone' is becoming a reality. However, technology enabling is not enough. People have to be trained in order to cope within the new concept of work. Universities are directly responsible for preparing the present and future workforce to succeed in a global environment. Virtual teams are increasingly being integrated into the electronic commerce environment.

The purpose of the second phase of the study was to examine in more detail the collaboration between students from Finland and the US. The students were involved in a real business problem-solving and decision-making process on how to initiate commerce on the Internet for ten Finnish companies. In several of the companies the suggested plans have since then been put into practice.

The research issues were to study (1) the process of virtual teams, (2) value of learning electronic commerce by doing, (3) country specific differences in attitudes, as well as (4) the effectiveness of teaching electronic commerce through virtual teamwork.