

In this issue

Tarn, David and Wen's "Disaster management"

Human systems failures, disasters and catastrophes are abundant and with the spread of information technology and systems (IT/S) they are increasing happening at the man-machine interface. So, IT/S is both causing new systems failures and also offering new means towards their rectification and management.

The traditional human-machine interface has changed. No more adjusting belts, unclogging jams and realigning cogs. No more mechanical setups. Information and electronic interface is much more demanding on knowledge and intellect. More human brain-skills and agility are needed. Modern Titanics and Chernobyls are likely to affect global communities in unprecedented and unimaginable ways. Interface troubleshooting is becoming an integral part of machine or system operation.

The authors propose a generic contingency control model to minimize the level and extent of systems damage. They use a pessimistic, quasi-intelligent orientation and apply a threat-driven model base. Decision support technologies are employed to enhance conventional control system constructs and supplement management and/or operational responses.

The authors in fact analyze some notable man-made disasters, like Chernobyl, *Exxon Valdez*, *NASA Challenger* and *Bhopal*, in order to identify common factors, nature of disaster-development path and the role of human judgment. When dealing with human systems, all disasters are ultimately traceable to humans, from design, through production to operation.

Simply adding controlling systems and instruments (law of requisite variety) is not effective because the underlying process and disaster path remain unchanged. Dealing with complexity via even larger complexity of control is a prescription for disaster because now two systems can fail: the controller and the controlled. Radical re-engineering of the process much as it is business, is often necessary. The old "variety matching" approach has outlived its usefulness. The emphasis must be on human perception, not on controlling devices.

The authors have presented an interesting and seminal analysis of human-systems disasters and their pre-

vention and management. A number of differently customized models can be explored and tested: the IT/S today certainly has the hardware, software and brainware to deal effectively with the disasters it engenders.

Warner and Zhu's "Management in China"

People's Republic of China has a culture which insists on doing everything "with Chinese characteristics". From justice, free market economy and socialism to economics, management and even mathematics – all is loaded with the infamous qualification "with Chinese characteristics".

This political excuse and apology for less-than-optical functioning and achievement in the above areas shows also a deep-seated reluctance and mistrust to learn, to join and to participate in global, worldwide affairs.

Warner and Zhu analyze the history of management as practiced in China over the ages. There is even a section on management and management systems since 1978 (since the "Open Door" policy) and during the era of western Global Management Paradigm, i.e., in parallel with converging managerial systems across cultures within the global economy. To be competitive in the global competitive space means to be able to deliver high quality, low cost and rapid delivery without tradeoffs and other decisional compensations. It is getting harder to fulfill such global customer imperative with anything redolent of emphasizing "national" character and focus – as Koreans and Japanese discovered belatedly.

It is becoming clear that historically and culturally grounded, almost obsessive attention to words, slogans, symbols and metaphors will not cut it in the hypercompetitive world of today. The pragmatic words, concepts and actions of productivity, re-engineering, horizontal organization, teamwork, cost, quality, human capital and added value – totally devoid of political meanings and manipulations – have to replace the slogans. The "scientific management" of the turn-of-the-century taylorism and gilbrethism will not cut it either.

The newest slogan of Iron face, Iron guts and Iron hands is almost totally misplaced and bound to be dys-

functional in the era of human capital, knowledge corporation, brainware and electronic commerce. The notions of autonomy, innovation, empowerment and cooperative networks are still too strange and too foreign, waiting to receive the infamous label “with Chinese characteristics”.

Modern Chinese management does not have to be compatible with Western management at all: the Western model itself is undergoing profound changes, upheavals and revolutions. What is needed is the ability to understand the changes and trends wrought by the new global economy. The West is just doing a better job than Asia and especially China.

Kim and Jung’s “Industrial innovation in Korea”

Global economy is placing special demands on those who wish to participate in its hypercompetitive environment: high quality, low cost, faster delivery and total reliability and service. In order to deliver such requirements on a steady and continually improving basis, human capital, teamwork, intracompany markets, re-engineering, innovation and creativity, employee empowerment and “tele”-technology must become much more than slogan and clichés – even in Korea.

Korea should avoid the Chinese path of developing its economy “with Chinese characteristics”. Instead, it should hitch itself to global players, especially the USA and Japan, and become an active player and partner in the global hypercompetition.

Technology, especially derived technology, is becoming widely disseminated and distributed: it is not the basis of lasting competitive advantage anymore. Innovative and original technology or uses of technology are becoming the necessary prerequisites for successful and competitive global participation.

The era of comparative advantage is long gone, the competitive advantage has to be created and fought for, at the time when it is itself transforming into hypercompetitive advantage. No easy imports can substitute for internal knowledge creation and the buildup of knowledge infrastructure necessary for absorbing and using technology to its fullest extent.

Technology is not just hardware (the means), software (the how to) and brainware (the what and the why), but mostly the appropriate supporting infrastructure which allows technology to be used efficiently and effectively. It is not the mobile telephone itself which makes the difference, but what is being said, to whom

and for what purpose. In modern global economy, the technology support net is much more important than technology itself. Human capital accumulation, as expressed in the knowledge infrastructure, is the key to hypercompetitive advantage.

To be the first and the most aggressive in promoting, marketing and selling new technology (not the derived or imitated technology) creates the most effective and durable competitive advantage, as the recent experience of the US affirms.

Korea can position itself to leapfrog from a skillful imitator to a high-tech innovator through striking a substantial collaboration with the US and Japan, not as a recipient but a provider of new technology.

Hiwaki’s “Sustainable development”

Prof. Hiwaki has presented an economic-theoretical framework for a balanced and sustainable socioeconomic development. Sustainability is here understood as being balanced and harmonious while compatible with environmental conservation and renewal at the same time.

First, one has to dismiss the short-run Keynesianism as being irrelevant for the modern age. It has no prerequisites and lays no foundations for sustainability or sustainable development.

Instilling a long-run economic thinking and decision making in people is a formidable challenge. Yet, many older farmers have developed a way of respecting the soil, renewing it, investing in it and developing it in long-term, cross-generational and self-sustaining patterns – many even grew rich through long-term oriented sustainable enterprise. Even some corporations have shown similar longevity and sustainability of their defining environments.

Hiwaki takes Smith’s powerful and mysterious Invisible Hand and transforms it into a “People’s Own Invisible Hand” concept, departing from the classical Self-Interest focus. Hiwaki argues that humans are capable of pursuing more than self-interest. That is, when they are working for the public good, they do not do so with their own personal interest in mind.

There are of course such things as long and short-term self-interest, self-interest of the group and self-interest of the species. Can individuals restrain their self-interest for the common or public good? They can, in the short run. In the long run, the two interests, individual and public, must coincide: they must be both sustainable.

Hiwaki offers people's Own Hands as a replacement for both the Invisible Hand of the market and the Visible Hand of the government.

This curtailing of both market and government as ultimate arbiters of exchange is asymmetrical: the Own Hands have to work jointly with the Invisible Hand, but there is no room for the Visible Hand.

One interpretation could be reflected in the increase of regionality, self-governance and self-management within the free markets, while the power of central government and nation-state weakens. Europe is a good example of a rather desperate integration of nation-state bureaucracies on one hand, and the growing economic and political autonomy of regions on the other hand. Paradoxically, globalization seems to empower the regions and localities more than nation-states. There could be hope in this new complementarity.

Dooley, Skilton and Anderson's "Process knowledge bases"

Processes of design, production and business have many structures and structural characteristics: technological, logical, spatial, temporal, causal, etc. Re-engineering of a process, i.e., direct change of its structure (or architecture), can proceed along some or all of these characteristics or dimensions.

Re-engineering without a deeper understanding of process causal structure is necessarily inadequate and suboptimal. Human understanding and reasoning about causal, spatial and time relationships of processes should therefore be enhanced, supported and facili-

tated. A class of IT devices and supports should be changed with the task of helping humans to reason about the spatial, temporal and causal relationships within the products and processes they manage.

This special IT device is called *process knowledge base* (PKB). Dooley, Skilton and Andersen present an overview, theory and application of PKBs. Very few information systems capture also their spatial and temporal relationships of processes, focusing almost exclusively on "if-then" type of relations (relational data bases, spreadsheets and similar ad hoc devices).

Causal reasoning about processes is different from a simple outcome-based response rule. One can base one's decisions on simple rules, like if price up, then sell, if price down, then buy, without necessarily explicating (or making sense of) the causes of the price movement. Causal reasoning is often avoided because it is "expensive", demanding and time consuming. So, PKB devices are designed to lower the "price" of causal reasoning.

Each PKB should represent three types of knowledge: *structural* (interrelationships and attributes of objects), *functional* (activities of objects) and *behavioral* (relationships between structural and functional attributes). This corresponds with the spatial, temporal and causal relationships, respectively. All three types of knowledge can be, according to Polanyi, tacit (revealed through application) or explicit (revealed through communication). A PKB has to be able to work with both tacit and explicit knowledge.

PKB construction and maintenance is now a technology that is available and doable, allowing to retain process knowledge in a more permanent fashion and thus enhance corporate competitive advantage.