

In This Issue

Tribus' 'Changing the Corporate Culture'

Myron Tribus is well known for his insistence on defining the manager's job as follows: 'The people work *in* a system. The job of the manager is to work *on* the system to improve it with their help.'

A stronger version could be: 'All employees work both in and on a system, continually improving its processes through mutual cooperation and adjustment.'

Newly emerging process-oriented management practices are natural and successful in those corporations which were (somehow) able to implement them 'from scratch'. The problem of management system switch or transformation remains difficult, stressful and risky for traditionally managed and organized companies: their chances of becoming globally competitive and respected by their employees and customers are rapidly declining.

Tribus studies the role of *change agents* bringing about the conditions necessary for a change in overall corporate culture.

It is well known that the best time to make a change is at a time of deep distress. An enterprise is suddenly faced with the necessity to change and to change drastically. But is there anything to be done when times are still relatively 'good' locally, but global competitors have already shifted towards more process-oriented management practices?

The change agent must be able to recognize and define a *process* (not just the 'end state' or 'product'). He must be able to understand how to *improve a process* and develop an ability to *communicate the essence of a process*. Finally, he must *understand the problems of people who must work in a process*. A person having these competencies could succeed as a change agent.

Tribus also elaborates on the theme that the most desirable way to describe the best means of doing

things can *only* be determined by those who must follow the practices and procedures.

The article is accompanied by practical tools, charts and other devices, so-called 'charts with people coordinates', which bring the notion of changing corporate culture from the world of theory squarely into the world of practice. For example, 'quality evolution diagrams' show how to take customer needs and requirements and refine them in successive stages: they are always presented in customers' terms of reference.

Customer integration into the very process of production is thus being translated into the very real terms of practical experience.

Kondo's 'Improvement of Productivity versus Humanity'

Yoshio Kondo, Japanese disciple of Juran, Deming, Nishibori and others, from the Kyoto University, has prepared an article on human-oriented management: increasing productivity by continuous enhancement of humanity or total quality of life and human nature of all employees. He is therefore obliged to insist that the Taylor system actually hindered the employment of human ability of workers in the enhancement of productivity.

Kondo insists that quality assurance and humanity are not in contradiction and in fact should be consistent with one another. Quality assurance has more to do with human participation, responsibility, initiative and co-ownership. It has *much less* to do with statistics and even less with this or that statistical technique. All of these statistics are increasingly automatically gathered and analyzed by the technology itself: *informing technology* and *autonomation* are the new keywords in this respect.

The point is not how to use statistics to measure whatever we are doing, but how to improve what we are doing so that the statistics confirm and broadcast our efforts.

For Kondo the key is *balance or harmony* among product quality, price and production volume. Quality improvement increases productivity and reduces cost and thus becomes a leading thrust of business.

Another theme is the dichotomy between *work* and *labor*. Modern economies and businesses are shifting from the Tayloristic-Marxist concept of *labor* to an emerging post-socialistic concept of *work* as an integrated and holistic effort of autonomous individuals for the benefit of other individuals.

Kondo repeats the wise and increasingly acceptable principle that the *profit is the means towards purpose, not the purpose itself*. He also attacks the myth of ‘Japanese-style management’ which has been so irresponsibly and simplemindedly exploited by assorted U.S. business writers and semigurus. There is no such thing: there is *only good management*, suitable for the era of global competition and applicable to *any* country.

This excellent and thoughtful paper concludes with a list of eleven major effects of employee participation. In fact, an image of a *new management system* is presented. Kondo, *HSM* Editorial Board member, is sharing with us an informed and competent view of the future of management.

Mackenzie’s ‘Process Approach to Organizational Design’

Kenneth Mackenzie stresses that prevailing simple cause-effect explanations (and models) are little more than (very) crude heuristics. So-called ‘irrefutable teleological theories’ are nothing more than a simplistic reduction of reality, modeled by linearly simplified representations and based on admittedly poor information.

Thus, paradoxically, the most scientifically appearing quantitative researches, overflowing with regression models, tinkering endlessly with correlations and R-squares, arguing incessantly about proper and improper causal or instrumental variables, are not only unscientific but could represent the very denial of scientific thought in the social sciences.

Mackenzie proposes what he calls the *process ap-*

proach to business and management research. In this he echoes the powerful trend sweeping management practices in globally competitive business ecologies: from product-orientation to process-orientation, from sequential separation and specialization to cyclical integration and commonality, from quantitative to qualitative concerns – from quantity to quality, from scale to scope. Also, Mackenzie’s approach can be characterized by its focus on *describing the process rather than a result*.

The process approach requires eight intellectual commitments:

1. Define concepts and relationships as clearly as possible before proceeding.
2. Determine the process (*how* things happen) and resist teleological speculations as long as possible.
3. Describe the how-statements as laws.
4. Attempt explanation on a deductive-nomological basis.
5. Keep it simple.
6. Avoid probability and frequency statements.
7. Use deterministic models whenever possible.
8. Use methods based on strong reference.

The shift from superficial quantification to meaningful qualification is obvious. Mackenzie is concerned with Type III Error (working on a wrong problem) and not with the secondary and often useless Types I and II of statistical inference. Any approach explicitly addressing the Type III error must be ‘more’ scientific by definition: working on wrong, irrelevant or non-existing problems cannot be science.

Mackenzie has accumulated extensive experience with applying the process approach in designing organizations. Through process design he is learning *how* organizations work.

Zeleny’s ‘Knowledge as Capital: Part I’

Knowledge has now become the most important productive force. It has upstaged man’s traditional dependency on land, heavy raw materials, labor, mechanical machines and money. Milan Zeleny argues that a nation’s store of knowledge is its principal asset and the greatest source of wealth. Other forms of capital are increasingly flowing

from the knowledge-poor to the knowledge-rich areas of today's world.

Traditional categories of economics, like 'labor-intensive' or 'capital-intensive', are becoming progressively irrelevant in the 'knowledge-intensive' business ecology. Possession of land, raw-materials, labor, infrastructure, technology and money remains necessary, but it is no longer sufficient: one has to *know* how, for what and why to use them.

Therefore, Zeleny argues, *knowledge has become primary form of capital*.

We speak of the 'knowledge industries,' 'knowledge systems,' 'knowledge workers' or 'knowledge engineering.' Productive systems of unlimited growth in performance are mainly characterized by their scope, integrated management and expansion of knowledge, less so by their scale, labor, money and 'knowledge-defying' management information systems (MIS).

Historical transition to knowledge brought about another new phenomenon: the emergence of *newly declining* economies, the 'ex-riche nouveaux' countries which only some forty years ago were highly industrialized and developed. Their knowledge has become increasingly specialized, atomized and splintered, overlaid with vast and rigid coordinative bureaucracies and thus inflexible, inaccessible and non-expanding, resulting in the overwhelming ineffectiveness and waste in their outdated labor-oriented processes, task specialization and division of labor.

At the same time, *newly accelerating* economies are taking full advantage of the knowledge era. These countries are characterized by their overwhelming emphasis on task, labor and knowledge *reintegration*, multifunctionality, flexibility and integrative education. Their recognizing of education as a primary productive force can even appear close to national obsession. Yet, there can be no such thing as *too much* education, by definition.

The fact that the Asian city-state of Singapore (only two million residents) now exports more machinery to the West than all of Eastern Europe put together richly illustrates this argument.

In the first part of his paper Zeleny introduces practical definition of knowledge, useful for modern business, and then analyzes its initial division and subsequent reintegration (the *corso* and *ricorso*

of human economic development). Examples of integrative orders, organizations, practices and technologies are also presented. In Part II he will proceed with analyzing and describing some newly emerging knowledge-appropriate management systems, together with short case studies of their current world-class representatives.

Minabe's 'Revision of Some Trade Theory Laws of Economics'

In an increasingly global economy the questions of international trade and tariffs are acquiring new importance. Although life expectancy of 'modern' economic theory is about five years, there are certain theories and models which people take for granted or do not question for decades or even centuries. Viz., for example, Adam Smith's 'law' that division of labor is limited only by the extent of the market and compare it with currently powerful trends towards multifunctionality, despecialization and reintegration of task, labor and knowledge, which are taking place under unprecedented growth of global demand and global markets. Yet, some theorists, ignoring reality, keep happily quoting Smith's 'law'.

Shigeo Minabe has selected Ricardo's international trade theory, Say's law, Walras' law and Leontieff's trade theory for his analytical comments.

Ricardo uses a *labor theory of value* when discussing the relative prices of commodities in a home country before trade, but switches to demand-supply analysis (*subjective theory of value*) when he seeks to determine patterns of trade. So, in the Ricardian international trade model there are two inconsistent and mutually exclusive theories of value. Because expounding international trade theory in terms of a labor theory of value is an impossible task, in order to be consistent one should drop a labor theory from modeling.

Obviously, the static Ricardian assumption that labor is the only factor of production is glaringly deficient in the era when *knowledge is the dominant form of capital*. What has escaped the attention of most economists is that in terms of consistent subjective value theory, both in domestic and interna-

tional markets, Ricardo's theory is *utterly defective* as a means to determine the pattern of trade.

Similarly, Wassily Leontieff's trade theory of 1933 and its analytical instruments are still being included in standard textbooks. Minabe shows that a strict Say's law must hold in classical trade theory, presents Walras' law in terms of its geometrical implications for international equilibrium conditions and then eliminates *Leontieff's incorrect diagram* related to his discussion of tariffs.

Although Minabe's observations do not diminish the importance of Leontieff's pioneering work, the discrepancies of his model went unnoticed by economists specializing in international trade theory for too many years.

It is just about time that the cherished models and theories from the times when labor was about the only thing that mattered be vigorously reassessed at that mattered be vigorously reassessed at a time when what matters most is human knowledge as a productive force of unprecedented global impact.

Ishikawa's 'AI in Japan'

Artificial Intelligence developments in Japan are entering into a new phase of *Industrialization*. In the 1990s AI-systems in Japan will go commercial and industrial. This trend is being propelled by the Institute of New Computer Technology and the Fifth Generation Computer project.

Akira Ishikawa of Aoyama Gakuin University has prepared a review of major Japanese AI systems, especially expert systems, AI development tools and automatic translation.

Teknowledge PROSPECTOR appears to be a prototype of successful Japanese ES industrialization. Other systems commercially available include SOGEN, Knowledge Craft, Super BRAINS, COMEX, Shell Friday and so on, ranging in price from 98 (SOGEN by AI Soft) to 8890 (VW/ESE by IBM Japan) yen.

As Tokyo became the world's largest financial center, applications of AI to international financial and portfolio analyses are correspondingly emphasized and in fact booming.

Ishikawa presents a ten-criteria Table of Comparisons of the AI status between the U.S.A. and

Japan. Only in Machine Translation Systems Japan appears to be currently ahead of the U.S.

The description of SOGEN concludes Ishikawa's review. This is an effective ES development tool. SOGEN requires no deep knowledge of AI and no programming knowledge (like LISP or PROLOG): it can be easily learned and used by beginners.

Interesting is the mentioning of a knowledge system which is trying to accumulate and order the thousand year-old knowledge of Chinese medicine. Also do-it-yourself trouble-shooting system for electric appliances and new-product, new-venture management support are also discussed.

Ishikawa concludes with five 'lessons':

1. Expert knowledge can be successfully diffused into public domain;
2. Better intelligence implies competitive advantage;
3. High economic- and human-value systems have priority;
4. Expert systems prevent knowledge of humanity from disappearing or degradation;
5. Risk, surprises and 'muddling through' of management are being minimized.

Maruyama's 'Problems in International Business'

Magoroh Maruyama addresses the newly emerging problems of international business in an increasingly global economy. In the era of integration and globalization the cultural and epistemological differences between individuals, groups and nations have to be studied more seriously, and in a business-related framework they require new ways of analysis.

Maruyama uses his *mindscape theory* to analyze the American failure to increase exports, the Japanese failure to reform agricultural policy, unsuccessful American attempts to create Japanese-style general trading companies and corporate tendencies to reverse or switch their management principles when operating in a foreign country.

Although Maruyama's 'mindscape types' vary from individual to individual, their statistical distribution varies from culture to culture. However, mindscape theory is not a typology. It is a tool for relating and connecting apparently unrelated as-

pects of business with non-business activities. For example, how is *extensive job rotation across specializations* related to the traditional *convertibility of space in Japanese architecture*?

There are four basic mindscape types which can be identified most frequently:

1. *H-type* (specialized, hierarchical, sequential, zero-sum competitive)
2. *I-type* (specialized, isolationist, orderless, negative-sum individualistic)
3. *S-type* (convertible, interactive, simultaneous, positive-sum cooperative)
4. *G-type* (convertible, interactive, simultaneous, positive-sum cogenerative)

The list of mindscape characteristics is actually much longer and there are significant overlaps between the types.

Maruyama also addresses the question of methodological changes among U.S. management theorists: instead of arguing which variables should be selected or what is the cause and what is the effect,

modern management researchers employ causal-loops, change-amplification, phenomenology and heterogenization processes and polyobjective vision. This is in contrast to the U.S. sociology and anthropology which have never really succeeded in fully developing phenomenological and causal-loop methodologies, remaining methodologically regressed in a linearly quantifiable H-mindscape.

Maruyama stresses the advantages of business management research: new *types* of data and the infusion of young scholars and practitioners from other fields and a growing cross-section of countries and cultures. This generates a conceptual shift and vitality not available in other areas of social research.

Prof. Shigeo MINABE
Department of Economics
Hiroshima University
Hiroshima 730, Japan