

## In This Issue

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### **Kendall et al.'s 'Future of Systems Analysis'**

Researchers from Rutgers University, in cooperation with London School of Economics, present their own scenario analysis (system SEER) of the roles of information systems and information systems analysts in the twenty-first century.

As management support technology moves vigorously from information to knowledge (and even wisdom) systems, the role of traditional data-processing and information-providing people appears to be quite limited and final, at least in the longer run. Still, the authors concentrate on the IS (information systems) function as it evolves into the future. Their predictions of 'more personal service' at the time of self-service explosion and of a slow-down in automation at the time of vigorous searching for quality, reliability and competitiveness are certainly challenging and thought provoking.

The authors also see a growing desire to keep technology in a subservient role and worry about human or humanized workplace.

More interesting is the exposure to the methodology of SEER (Scenario Exploration, Elaboration, and Review), which is an interesting complement to Delphi technique in that it seeks a systematic divergence of views or opinions, not their artificial convergence towards empty consensus. Delphi technique often culminated in a broad agreement of experts on such things as: 'There will, quite probably, be a change of sorts in a foreseeable future.'

SEER methodology reverses the process: instead of seeking a solution, it states or presets solutions and then unfolds backwards, identifying the problems on the way. The experts form, defend and strengthen their views, no consensus is being sought, there is no anonymity and everything is defended and argued face-to-face.

The four authors of this paper represent four different scenarios to be analyzed by this process.

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These scenarios: I. Overburdened Analyst, II. Overbuilt Organization, III. Loss of Solution/Control Myth, and IV. Attainment of Fluid/Flexible Organization. Discussion of these four scenarios through the SEER process in subjective and individual terms is much more enlightening than reading about sterile consensus solutions.

The notion of consultative participation preserves the autonomy and self-respect of each expert, instead of immature consensus and teenage anonymity, the adult consent and open responsibility are sought. This is not a bad result for a first try.

In fact, the real world is never about extremes or excesses, never about black versus white poles, but always about striking the right balance and establishing a harmony. Harmony is needed between nationalism and cosmopolitanism, between specialization and integration, quality and productivity, safety and stimulation, hierarchy and self-management – especially in an evolutionary sense: extremes do not evolve, they just get more extreme.

The inventors of SEER should now direct their attention to the reform and transformation scenarios in the USSR and Eastern Europe: that's where the real human payoff is and is needed most.

### **Eom and Min's 'Multiple Criteria in DSS'**

This research supports the notion that MCDM (Multiple Criteria Decision Making) has now become 'mainstream' research and focus of management sciences and decision support systems (DSS) modeling.

Because any human decision making process balances multiple criteria and objectives, any modeling support of such a process must, by definition, involve multiple criteria. As there can be no single-criterion decision process, there also cannot be a (respectable) DSS model that is not based on MCDM.

The above does not imply that traditional single-objective OR/MS disciplines have to embrace

MCDM and in fact they have not. What is happening is that DSS and MCDM are establishing themselves on their own, becoming more and more separated from OR/MS which are, to quote Franz Edelman, going 'thataway'. So, MCDM has positioned itself at the core of DSS, as Eom and Min prove, but not necessarily at the core of OR/MS which is an entirely different 'animal', marching to a rather distant drummer.

Single-objective or single-criterion analyses, maximizing this or minimizing that, are not useful in addressing the complexities of multidimensional and multifaceted world around us. Such single-formulations are much easier to handle mathematically and so they attract mathematicians. Yet, the problems themselves are about organizations, strategies and human competition and cooperation.

The authors show that MCDM researchers are growing to be more influential in DSS, but so are the committed 'enemies' of MCDM: for example Ackoff has never accepted MCDM, not even in principle, yet he appears among most influential DSS authors. The whole school of Multiattribute Utility Theory (MAUT), committed to single-criterion (composite utility function) maximization (e.g., Keeney, Raiffa, Dyer) remains heavily influential, even within MCDM.

The presented research is still very useful, especially in presenting MCDM in a strong, even powerful focal position. But the paradigms involved are still evolving, are not clearly defined, and often put fundamentally divergent approaches under common label. Linguistic labels like OR, MS, DSS and MCDM are simply too broad and all-encompassing to provide a clear picture and guidance through the maze of paradigmatic clashes and new directions.

There is no doubt that, after some 20 years of its existence, MCDM has become influential and its influence will continue to grow rapidly. But MCDM itself is going to undergo a profound transformation into at least two contradictory approaches: those relying on single 'superfunction'-based prescriptive, analyst-driven resolution of multicriteria conflict, and those based on preserving criteria autonomy and competition in a prescriptive, user-driven and knowledge producing framework.

This MCDM divergence process has already started, although it still remains 'invisible' to narrow

specialists. There are some indications that this process will not take full twenty years towards its resolution, but perhaps only about 8–10 years, depending on the rate of inflow of fresh 'research blood' and the outcome of their urges to conform with the longings to break out on their own.

### Warner's 'Management Education in China'

The average economic growth rate for 1991 was about 0% (compare 1.4% in 1990, 3% in 1989 and 4.3% in 1988).

The U.S.A. registered a decline of –0.5%, while the Third-world countries grew at about 3.5%. The best growth results have come from China: 5.5% in 1991 and 4.8% in 1990.

Compared to China, Eastern Europe and USSR registered –9.5% (1991) and –6.3% (1990). Czechoslovakia alone went down (official numbers): –23.1% in industrial production, –14% Gross Domestic Product, –39.9% internal sales, inflation +57.9%, unemployment 6.6%, etc.

One of the reasons why China's reforms are proceeding so well and East European reforms are a debacle lies in the emphasis on management education, production training and national capital formation. These factors are all but ignored in Russia and Eastern Europe where the emphasis is on foreign aid, paper speculation and no education or training.

Prof. Warner of Cambridge has prepared a review of current management education and training in China. In China, a nation-wide examination for top managers was introduced. By mid-1987 about 16 000 managers had already taken the examination. There are about 100 management training institutes, with 7 500 full-time and 2 000 part-time teachers, plus over 3 000 training colleges and schools. By 1988, over 100 000 managers had acquired their qualifications.

Warner also analyzes the senior executive programs in six major geographical areas in China and university-level management schools in major cities. He concludes that advanced management training has taken a root and has become well-established and accepted. To compare, industrial economics and enterprise managerialism is frowned

upon in Eastern Europe and monetaristic macro-economics and state interventionism totally dominate.

Prof. Warner doubts that cross-cultural knowledge transfer of Western Management practices is going to be fully effective. Rather, local institutions seem to be evolving their own specific 'schools' and approaches, much more suitable to local economic and cultural conditions. The full impact of management education efforts still defies reliable estimation.

It is becoming clearer that China is doing well economically and its reforms are probably most successful among all socialist countries. It seems that the pace and quality of economic reform is going to continue in the 90s. It also appears that the requisite political reforms, after the unfortunate interruption of Tiananmen Square, are about to take place in the early 1990s.

One can only hope that the political liberalization in China will provide more breathing space for the economic reforms already in place, rather than signal the emergence of renewed state-macroeconomic tinkering with the economy and embracement of the paper-speculative, get-rich-quick schemes of the ex-communist nomenklatura which are now torturing the unfortunate people of Eastern Europe and Russia.

### **Zikiye and Zikiye's "Impacts of Automation"**

The effects of automation on job characteristics are often studied. Especially in the era of increasing automation in the service sector, and its impacts on employment, productivity growth and recession, the issues of job and employees changes are of renewed importance.

Automation increases coordination: virtually every study provides empirical support for this proposition.

Automation increases job autonomy: greater autonomy leads to elimination of supervisory jobs and increasing workers aversion to closer supervision.

Also other dimensions, like career advancement, work pace, new skills requirements, exertion and

job security could be more or less affected by automation.

The Zikiyes from Nova University have presented a study identifying elements positively affected by automation and related to job satisfaction, elements unaffected by automation, and elements affected by automation, but unrelated to job satisfaction. The last category leads the researchers to postulate the "satisfaction gaps" and their effects on the hindrances and barriers to implementing automation and flexible manufacturing systems.

The researchers stress the sharp increase in operator-initiated information exchange within and among departments: the relative isolation from other functional areas is all but disappearing. The operators are becoming more self-confident and more self-reliant, especially in the areas of quality control, programming and maintenance. The tendency and preferences towards unsupervised task completion leads to pressures on eliminating the supervisors.

The increased autonomy and self-reliance has led to the perception of longer work hours in the post-automation period even though the actual duration of time spent in the factory has not changed.

The Zikiyes have also confirmed the increased coordination due to automation and that information exchange was related to job satisfaction. Automation also enhanced the volume of interpersonal communication – a basis for advanced cooperation. They did not find any adverse effects of automation on work pace, inattentiveness, health hazards, job pressure or anxiety – the bread and butter stuff of automation research just a few years ago. *Human Systems Management* has never admitted such short-sighted ideological research which is now just a matter of some wishful thinking of the past.

The fear of unemployment is quite another matter. Automation has led to increased productivity in the service sector and as in the agriculture and manufacturing sectors before that, its employment capacities will drop sharply. The fear of job loss will exhibit clear sectoral dimensions, but it would be a mistake to insist that it will disappear in the near future. There are no labor-intensive traditional sectors of economic activities forthcoming in the mature developed economies.