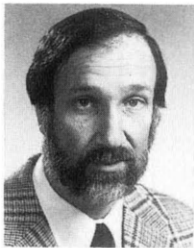


Editorial policy for the management of technology area of Human Systems Management

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Donald Gerwin. Currently, I'm a professor at the School of Business Administration at the University of Wisconsin-Milwaukee. I received my Ph.D. in Industrial Administration from Carnegie-Mellon University where my interest in human problem solving developed. I've also visited at the University of Wisconsin in Madison, the International Institute of Management in Berlin and ESSEC in Cergy, France.

Trying to understand problem solving led me to research in administrative decision making and scientific inference. I've published a book "Budgeting Public Funds" and articles in *Management Science*, *Administrative Science Quarterly* and other journals on the former topic; and papers in *Behavioral Science* and elsewhere on the latter topic. My interest in the design of problem solving systems led me to work on organizational design, especially where technological considerations are important. I've published on this topic in *Management Science* and various management journals, and am completing a handbook chapter on the relationships between structure and technology. At the moment I'm involved in a field study of the organizational impacts of advanced manufacturing systems. We are trying to trace the processes by which new technology interacts with structure, policy making, and other variables.

In addition to being on the editorial board of *Human Systems Management*, my professional activities include being an associate editor for *Management Science*, and a consultant to the Division of Applied Research of NSF.

The management of technology is of particular significance for our professional society because it is one of the principal areas in which a concern for humanism and a concern for management intersect. It is still uncertain whether man's ability to control his destiny is in conflict with, or can be facilitated by our awesome technological capabilities. There are two critical questions arising out of this humanistic confrontation with technology which have impact for work organizations:

(1) Are our organizations developing in ways which cause technological considerations to inhibit the attainment of human values?

(2) Can technology be used to facilitate task performance and human values?

My own belief is that the way in which technology is managed in work organizations will play a crucial role in determining how these questions are answered. Consequently, I believe we must learn a great deal more about the administrative processes used in dealing with technology if humanistic concerns are to continue to shape our development.

Human Systems Management will hopefully not be satisfied with being just another voice, however meaningful, in the debate over these critical issues. Ideally, the transdisciplinary objectives of the journal will prompt us in time to become a central, integrating focus for contributions from scholars and practitioners in the humanities, management, social sciences, and computer science and engineering. As far as I know, at this time no center of activity of this kind exists. In the short run, however, it may be more realistic to develop the Management of Technology area primarily for and with the help of management scholars and practitioners.

Within the broad, general framework outlined above, some concrete objectives and boundaries need

to be spelled out. Technology broadly defined refers to the means used to accomplish tasks in organizations. It may be embodied in a material form such as products and processes, or disembodied as is the case for ideas such as operations research techniques and internalized performance programs. The problems of managing technology fall into two broad categories: stimulating an organization to adopt new technologies, and interfacing implemented technology with the rest of the organization. Existing knowledge on how to solve these problems comes from the literatures on contingency theory, socio-technical systems, organizational innovation, computerization, comparative analysis, and organizational development.

In general, contributions falling into the two broad problem areas of the adoption and implementation of technology are appropriate for the Management of Technology area. However, in keeping with the aims of *Human Systems Management*, refinements of the basic concepts of the literature mentioned above or of related literatures will receive low priority. Existing journals provide adequate outlets for this research; we are not intending to compete with them. On the other hand, papers which attempt to integrate or critically review these literatures, for example from a humanistic perspective, will be encouraged, especially if they incorporate meaningful suggestions for future research. A humanistic critique might evaluate the view of man taken by a certain approach, or discuss the implications of the approach for the achievement of human aspirations. Argyris' *The Applicability of Organizational Sociology* is a fine example.

In my view new knowledge about managing technology can best be developed by research which takes a process oriented approach. Process oriented contributions would attempt to identify key inputs and outputs involved in stimulating and implementing technology. They would also study the steps by which inputs are transformed into outputs, and the ways in which the steps are linked together. Ideally, they would trace the operation of technological processes over time, and the way in which these processes change over time. Research of this nature has at least four pertinent aspects. First, it is necessary to develop theories which explain the processes involved in adoption and implementation. Second, we need recommendations for improving the functioning of these processes. Contributions with a design orientation should be based on sound knowledge of existing processes. An attempt should also be made to explicate

the values behind particular recommendations, especially where humanistic concerns are involved. Third, there is a need to develop new methodologies or to apply existing methodologies to study the management of technology. For example, cognitive mapping might aid in studying the ways in which individuals in organizations scan their environments for knowledge of new technological opportunities. Fourth, we need contributions by practitioners concerned with the difficulties encountered in trying to apply theories and prescriptions. Practitioners can also help in identifying new problems to study.

The following list of processes involved in adoption and implementation is meant for illustrative purposes only:

- (a) cognitive processes by which organizations become aware of new technological opportunities,
- (b) influence processes by which support for or against adoption is developed,
- (c) developmental processes by which adopted technologies are initially implemented,
- (d) processes by which implemented technologies affect the functioning of other organizational activities,
- (e) evaluation processes by which the degree of success of an implemented technology is judged,
- (f) processes by which in the long run organizational technology may affect employees' needs and values.

Process oriented research will be considered particularly relevant if it is concerned with one of the following topics for which new knowledge on the management of technology is especially needed:

- (a) disembodied technology in the private and public sectors,
- (b) technology in public sector and service organizations,
- (c) computer aided design and computer aided manufacture especially for small batch production,
- (d) utilization of existing and new technologies for the humanization of work,
- (e) the impact upon organizational development strategies of an organization's technologies,
- (f) adoption or implementation of revolutionary new technologies in organizations,
- (g) new organizational arrangements for stimulating technological development and implementation,
- (h) the role of entrepreneurship in technological development.

Hopefully, these guidelines will establish some

rough boundaries on the Management of Technology area. However, they represent the views of just one member of our professional society. I'd appreciate

receiving suggestions on how to improve them, and would be happy to revise them along lines which reflect the thinking of HSM's membership.