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SOCIO-TECHNICAL PERSPECTIVE IN WORK ORGANIZATIONS

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ABSTRACT

This paper examined the concept of socio-technical perspectives in work organizations. Socio-technical system is concerned with the interventions between the psychological and social factors and the needs and demands of the human parts of the organization, and of the structural and technological requirements. The theory is founded on two main principles. First is that the interaction of social and technical factors creates the conditions of successful or unsuccessful organizational performance. Second is that optimization of only one aspect of the system will create unpredictable and undersigned relationships which can be injurious to the system's performance. The principle states that an organization will function optimally only if the social and technological subsystems of the organization are designed to fit the demands of each other and the environment. This implies that organization should interact with its environment and also adapt to environmental changes so as to accommodate both the present and future demands of the environment. The socio-technical system intervention not only promotes the life of the organization but those of its members. In this regard, organization been an open system will continue to learn and adapt to continue structural rearrangement of people and technology as it upgrade to modern structures and design. This tends to add value in the life of both the organization and its individual member. In summery, socio-technical perspective is geared towards designing work in organization in a manner that promotes performance and quality of work life.

Keywords: Socio-technical, Learning, Adaptability, Quality of Work Life, Organization, Performance, Effectiveness

INTRODUCTION

The concepts and ideas presented in this paper provide a basis for understanding the design and structure of work organizations. Organizational structures and designs make it possible for effective performance of key activities and to support the efforts of staff. Hence Child (1984) observes that the structuring of jobs needs to be matched by an appropriate design of organizational systems and an appropriate managerial style. This means that in order to make organizations efficient and effective, the manager needs to put in place a proper

organizational system which will promote work relations.

The work of Eric Trist and co-researchers at the Taristock Institute of Human Relations, according to Mullins (2005), gave rise to the idea of socio-technical systems. That study revealed that new methods of work and change in technology disrupted the social groupings of the miners and brought about undesirable changes to the psychological and sociological properties of the old method of work. As a result, the new method of work was less efficient than it could have been despite the introduction of new technology. The researchers observed the need for a socio-technical approach in which an appropriate social system could be developed in keeping with the new technical system.

A socio-technical system in organizational development is the term adopted toward the approach to complex organizational work design that recognizes the interaction between people, and technology in workplaces. The term refers to the interaction between society's complex infrastructures and human behaviour. According to Mullins (2005), socio-technical system is concerned with the interactions between the psychological and social factors and the needs and demands of the human parts of the organization, and its structural and technological requirements. In this light, society itself, and most of its sub-structure, are complex socio-technical systems.

In this study, we will analyze socio-technical approaches which earlier scholars have described as the mode of analyzing organizational relations. This will help us to uncover the social and technological elements that need to be taken into account as managers' fashion a proper work design which will promote work relations in our modern organization.

Conceptual Definition of Socio-technical systems

The concept of socio-technical systems describes a method of viewing organizations which emphasizes the interrelatedness of the functioning of the social and technological subsystems of the organization and the relation of the organization as a whole to the environment in which it operates (Shani, 1982). The socio-technical systems perspective contends that organizations are made up of people which produce goods or services, using some technology, and that each affects the operation and appropriateness of the technology as well as the actions of the people who operates it (Trist, 1981). In line with the position of Trist, Pasmore (1988) describes socio-technical systems as integrating people and technology to create high-performance organizational systems.

Socio-technical systems are particular expression of socio-technical theory. Socio-technical theory is founded on two main principles:

1. That the interaction of social and technical factors creates the conditions of successful or unsuccessful organizational performance.
2. That optimization of each aspect alone (social or technical) tends to increase unpredictable that are injurious to the system's performance.

On this basis, socio-technical systems advocate for joint optimization of both social and technical aspects of organization (Emery, 1978). The

principle states that an organization will function optimally only if the social and technological subsystems of the organization are designed to fit the demands of each other and the environment (Shani, 1982). This concept however differs from social system. Though social system focuses on bringing useful change, it is narrow as it does not consider technology as an important aspect of the change. The socio-technical system perspective assumes that to increase organizational effectiveness the answer lies primarily in increasing employee motivation. Thus, it seeks to achieve this objective through the integration of the social sub-system and the technical sub-system in the organizational environment.

The social sub-system

Socio-technical systems as we earlier observed deals with two subsystems, the social and technological sub-system. The social sub-system of an organization comprises of the people who work in the organization and the relationships among them (Pasmore, 1982). This is to say that it deals with the social grouping within the work organization. This social aspect contributes largely to the reason why individuals chose to work in that organization, their attitudes towards it, their expectations of it, patterns of supervisory-subordinate relationships, skill levels of employees, and the nature of the subgroups within the population (Shani, 1982). Social sub-system deals with all the human characteristics which members of the organization bring to the work place. It is based on these needs that individuals bring to the workplace that socio-technical theorists advocate for the adoption of the best technology which will help them achieve those needs.

The technical sub-system

Technology as we know it deals with human made tools and devices which make work easier. The technical sub-system of an organization consists of the tools, techniques, procedures, skills, knowledge, and devices used by members of the social sub-system to accomplish the tasks of the organization (Taylor, 1978). That is to say that the technical subsystem deals with technologies which the organization acquires for the use of its members. It is quite natural overtime for these technologies to change as new innovations emerge. It is in keeping with these changes in technology which make socio-technical theorists to advocates the same changes in the social aspect. A change in the technology undoubtedly affects work, and work socialization (Shani, 1982). It is in keeping with this development that socio-technical theorists advocate for joint optimization of both social and technical subsystem. In line with this development, organizational designers have to design the organization in such a manner that the acquired technology promotes the needs of the members at work and promotes their efficiency.

Open system perspective

Organizations must interact with their environments to survive. Through this interaction with the environment, organizations give as well as receive from the environment in which it operates. This means that the environment is another important aspect of the organizational system (Mullins, 2005). The open system perspective, hence, implies the need to examine transaction with the environment, maintain contact with environmental changes, and build adaptability into the organization to respond to both

anticipated and unanticipated changes (Davis, 1977). This supports the idea that organizational designers should ensure flexibility in organizational design. In this light, Trist and Bamforth (1951) observed that organizations should be designed with reference to present and future environmental demands.

Socio-technical systems intervention in organization

Socio-technical systems intervention has created organizational choice within the organizational system. It disapproves the notion that the only way to design work organizations must conform to the Tayloristic and bureaucratic principles. According to Emery (1978), socio-technical system reveals the emergence of a new paradigm of work in which the best match would be sought between requirements of the social and technical subsystems. Some of the principles discovered through socio-technical systems interventions include:

- The work systems, which comprised a set of activities that make up a functioning whole, and not its separate units.
- Correspondingly, the work groups become central rather than the individual jobholder.
- Internal regulation of the system by the group is thus rendered possible rather than the external regulation of individuals by supervisors.
- A design principle based on the redundancy of functions rather than on of parts (Emery, 1967) characterized the underlying organizational philosophy which tended to develop multiple skills in the individual and immensely increased the response repertoire of the group. The principle valued the discretionary rather than the prescribed part of work role (Jaques, 1956).
- It treated the individual as complementary to the machine rather than as extension of it (Jordan, 1963).
- It was variety-increasing for the individual and the organization rather than variety-decreasing in the bucreautic mode.

Conceptually, the new paradigm entailed a shift in the way work organizations were envisaged. Davis, Canter and Hoffman (1955) observed that under the old paradigm, engineers, following the technological imperatives, would design whatever organization the technology required. The development of socio-technical systems has dismissed the idea of separate approaches to the social and technical sub-systems of an organization. It promotes joint optimization of the two subsystems. Work organizations exist to do work which involves people using technological artifacts to carry out sets of tasks related to specified overall purposes. The social and the technical sub-systems are the substantive factors. The people and the equipment, economic performance and job satisfaction were outcomes, the level of which depended on the closeness of fit between the substantive factors.

Learning and adaptability

The rate at which uncertainty overwhelms an organization is related more to its internal structure than to environmental uncertainty. The organization being an open system continues to learn and adapt to continuous structural rearrangements of people and technology as it upgrades to modern structures and design. Thus the organization as a living organism lives to learn and adapt to the changes of the

environment in which it lives (Morgan, 1986). The socio-technical perspectives which promote joint optimization is to guarantee the survival of work organizations. In line with this idea, Cherns (1976) maintained that organizational designers should constantly review and modify socio-technical arrangements to better fit the ever shifting demands of the environment.

In this regard, Shani (1982) proposed that a multilevel, multidisciplinary team should be formed to continually evaluate the current system and propose alternatives to it. This implies that no single joint optimization will constantly sustain the ever dynamic organizational environment. In view of this, the team is important thus designers must create a system that maintains and upgrades itself and meet the survival needs.

Quality of work life value

The main focus of socio-technical system intervention includes the need to enhance the quality of work life of the members of the organization. According to Trist (1981), the drive for a higher quality of work life is reflected in socio-technical system design through the creation of work which is challenging, encourages learning, provides variety, offers social support and reorganization, allows the accomplishment of whole tasks, permits self direction, and provides feedback concerning performance. In considering work in America, Davis maintained that the mental health of the workplace and work/family life interface (Davis & Cherns, 1975).

In a nutshell, socio-technical system perspective creates systems that add value in the life of both organization and its individual members. To achieve this, the quality of life in the work place is seen as a crucial part of the system (Trist, 1981).

Performance and effectiveness

There is a multiplicity of interrelated factors which influence the behaviour and performance of people as members of work organization. Socio-technical systems intervention is all about creating an organizational system that will bring to bear powerful forces that shape behaviour in a way that improves organizational performance and effectiveness (Shani, 1982).

Every work organization is concerned with performance and being effective. To achieve this purpose, the socio-technical system approach, posits that the answer to increased organizational performance and effectiveness lies primarily in designing the kind of organizational system that guarantees and promote a better man-machine relationship (Shani, 1982). This implies that a system which helps members of that organization make better use of machine at work, invariably promotes performance and organizational effectiveness.

Conclusion

The concept of socio-technical systems has brought about the new paradigm of work. This new paradigm which recommends the joint optimization of the social and technical sub-system, promotes flexibility in organizational design and structure. It however views organization as an open system. Organization being an open system means that it has to live and interact with the environment within which it exists in order to survive.

Socio-technical system theorist however, maintained that since technology shapes role, and socio-psychological factors constrain technology, the structure of the organization must be designed in such a manner as to ensure that the two sub-systems play a complementary role to each other. Thus the main idea behind socio-technical system intervention is to design work organization in a manner that promotes quality of work life and guarantees the performance of organizational members.

References

Cherns, A. (1976). Principles of socio-technical design. *Human Relations,* 29, 783-792.

Child, J. (1984). *Organization: A guide to problems and practice.* Harper & Row.

Davis, L. (1977). Evolving alternative organizational design: Their socio-technical bases. *Human Relations,* 30, 26-273.

Davis, L.E., Canter, R.R and Hoffman, J. (1955). Current job design criteria. *Journal Industrial Engineering,* 6, 5-11.

Davis, L.E and Cherns, A.B. (1975). *The quality of work life.* Vols. I and II. New York: Free Press.

Emery, F.E., (1967). The next thirty years: Concepts, methods and anticipations. *Human Relations,* 20, 199-237.

Emery, F.E (1978). *The emergency of a new paradigm of work* Canaberra: Centre for Continuing Education, Australian National University.

Jaques, E. (1956). *Management of responsibility: A study of work, payment and individual capacity:* New York: Dryden.

Jordan, N. (1963). Allocation of function between men and machines in automated systems. *Journal of applied Psychology,* 47, 161-165.

Morgan, G. (1986). *Images of organization.* London: Sage Publications.

Mullins, L.J. (2005). *Management and organizational behaviour.* (7th ed). London: Prentice Hall.

Pasmore, W. (1982). Overcoming road blocks in work restructuring. *Organizational Dynamics,* 10, 54-67.

Pasmore, W.A. (1988). *Designing effective organization: A socio-technical systems perspective.* New York: Wiley.

Shani, A. (1982) Socio-technical systems: A north African reflection on empirical studies of the seventies. *Human Relations,* 35, 1179-1204.

Taylor, J. (1978). *Fragmented office jobs and the computer.* Center for Quality of Working Life, UCLA.

Trist, E .L (1981) *The evolution of socio-technical systems in perspectives on organization design and behaviour.* Ed. By A.H Van de ven and W.F. Joyce. New York: Wiley.

Trist, E.L and Bamforth, K.W (1951). Some social psychological consequences of the longwall

method of coal getting. *Human Relations,* 4, 3-38.