Socio-technical Principles – A Requirement for Success?

This paper examines the close relationship of socio-technical design principles and how essential they are to improve the management of information systems in the areas of effectiveness, management and business. It will also show how important it is to have the general management be involved in the design and information technology (IT) processes to achieve a successful design, promote innovation as well as meeting the set business goals. The concept of social-technical behavior should be used to refer to the close and integrated interaction between people and technologies and the technologies that are developed within the social world and the experienced information technology professionals and programmers.

More and more commercial companies are implementing this socio-technical behavior in their daily work processes. In order to understand the importance, close relationship and positive effects socio-technical principles might have on design and success as well as organizational efficiency, several main aspects that need to be examined. The three main aspects and principles as analyzed by Eli Berniker are philosophical premises and values, design process and continuity.

A very important principle of socio-technical interaction lies within philosophical premises and values as discussed by Morgan (Morgan, 1980). A major part of a successful and efficient design and teamwork process is participation. Participation in this context shall be seen as the coordinated team process between technical professionals and people – "a center without walls, in which users can perform their research without regard to geographical location - interacting with colleagues, accessing instrumentation, sharing data and computational resources, and accessing information in digital libraries".

This close interaction between both parties will lead to workplace innovation and a more effective organization design. During the participation process, each party is considered and respected to contribute to the innovation, workplace improvement and overall success of the project. This participation in the design process can be summarized as "means that people will be expected to "design" their own work lives, to experiment with their own work roles and learn in the process." It is a conscious process to decide on the design and functionality of a given project and its overall success and usability from the technical as well as user-standpoint.

The second very crucial aspect of socio-technical design is the design process itself, which is inseparable from its outcome (Churchmen, 1971). The design process can be divided into subgroups that include compatibility and constrain-free design. Each design process should be compatible with its project objectives. If the design process is a constructive participative process, the team uses the creativity of the individuals to allow for a successful project development. This method is flexible enough and allows for a fast response to changes, needs and tasks by reassigning tasks and reorganization of the team structure.

1

Constrain-free design process is closely tied to participation and compatibility as it promotes the innovative thinking, optimal vision of the efforts without producing impractical designs. It forms compromises between existing constrains, impractical designs, constrains whose costs make removal prohibitive and the initial design.

Continuity is the third principle, which contributes to the overall success of a project. In a principle of "incompletion", a design process is never completed and requires continuity within the work structure, innovation and participation. Learning and experimentation play a major role in the successful accomplishment of each design. The learning process on the individual as well as organizational level is a necessary and required process to achieve a socio-technical design success. The time and resources for the learning process shall be included in the original design. If not, the design team might find itself coping with unexpected challenges, delaying the design process and eventually failing to meet the project deadline.

Experimentation is part of the design process, as each groups design innovation includes experimentation and innovation during the development and design process. It is very important that during the development and design phase, the work group tests and discusses the design in order to recognize improvement opportunities. If this phase is left out, the result will be a non- or very limited innovation, with the end result being similar to prior designs. Although this experimentation and innovation phase is very important, it is pertinent to adhere to the design guidelines and set goals, to avoid this design to be treated as a complete experiment or fail to meet set deadlines and objectives.

This cooperation or socio-technical principles between the technical professionals and the users or managers not only play a very important role during the design process, but also in the general management and business environment. In today's rapidly changing business world and emerging new markets it is an increasing challenge for managers to coordinate all business operations in a efficient manner without the proper tools and technology.

Global Information systems are not only used for financial transactions, coordinate operations, logistics and customer support but also enable global expansions. For these expansions, managers need to be aware of host countries technological infrastructure, trans-border data flow issues as well as national laws and implementation regulations. All this cannot be accomplished with a technical approach without the interaction of the social environment.

If the socio-technical concept, which includes the interaction of general management, is not used, a long-term business failure can be the result. As discussed by Carr's in "Why IT Doesn't Matter", IT cannot be misperceived as a necessary mean and tool to accomplish a task. Information systems are very customizable and do not come on a "one-for-all" solution and need to be constantly adjusted to meet each business's business requirements and needs.

As various large companies and financial institutions, such as Banca di Roma after a merger, have experienced in the past, managements failure to address IT issues, can cost millions of dollars, lost customers or customer data, lawsuits as well as bankruptcy in some cases.

General managers should take advantage of the "socio-technical" concept and implement a strong interaction between the technical and non-technical, user or business departments. Past years and real life experience have shown that proper socio – technical interaction has had a very strong and positive impact on the design processes. This interaction not only improves the success of a project, the development process and conveys innovation, but also leads to improve the competitive advantage, organizational effectiveness and efficiency and business opportunities.

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About Stealth - ISS® Inc.

Stealth - ISS®, headquartered in Tampa, FL., is a privately owned Information Technology security consulting company with main focus on regulatory compliance, security integration, security consulting and managed security services for both government and commercial customers.

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About the Author

Dasha Deckwerth is the CEO at Stealth - ISS, with extensive experience in international business and computer security. Prior to her position as CEO, Dasha had gained extensive international business experience in various European, Asian and Central American countries and later became the VP of Marketing and Business Development at Stealth - ISS® in Berlin, Germany. She also worked on several projects as security and regulatory compliance consultant in the commercial sector as well as for various NATO countries and government agencies. Dasha's current focus includes managed data center services, knowledge management, regulatory compliance applications and services and security implementations and consulting. Mrs. Deckwerth holds a B.A. in International Relations and Foreign Affairs from Eckerd College, is currently pursuing an MBA in IT Management from Touro University and speaks six languages.