

Draw on the readings to characterize the relationship between people and information technology. Begin with some common simple but inadequate views and say what's wrong with them. Then continue to one or more richer, more complex views. (1000 words maximum)

Characterizing relationships between people and information technology spans a broad spectrum of theoretical frames. Simple or one-dimensional interpretations of these relationships typically lead to a myopic view of the underlying complex interactions. Beginning with these simplistic views in three such areas, it can be shown through examples that a more robust and interconnected interpretation of this relationship brings us closer to a holistic understanding of human interactions with information technology.

Political

The basis for political interpretation of objects and interactions is drawn from expressions of power; specifically, delineating groups determined by inclusion or exclusion [1]. March and Simon describe the allocation of power within organizations in terms of roles through which power structures are asserted [2]. Yates describes the evolution of organizational structure through systematic management into an entity where power is high among few roles at the top of the organizational hierarchy and diluted among the large number of workers at the lower levels [3]. The simple view of power being distributed as a matter of organizational role hierarchy, as pointed out by various authors, is incorrect. The lines of inclusion and exclusion become stark and more pronounced when coupled with information technologies. As organizations become more complex and hierarchical, maintaining structural cohesion becomes more difficult [4]. Information technology is commonly brought into organizations under the belief that it will enable such coordination, but without mindfulness of the political role of technology in drawing lines of power. Zuboff describes several scenarios in which the “infomating” nature of technology isolates workers from each other, widens the chasm between hierarchical levels, and creates more stark gradients of power between manager and managed [5]. The Panopticon is a construct designed to draw political power away from the worker and place it in the hands of management. The ability to examine the minutiae of a worker’s task execution, to hold the worker accountable for each action, is the essence of the Panopticon. Nissenbaum points out that this level of accountability, this exertion of power, is a requirement of a functioning organizational machine [6]; however, she laments the fact that the relationship between people and information technology, and the distributed nature of infomated work, allows us to shift accountability away from people and onto the technology itself – a political act that moves the lines of inclusion and exclusion to place people on one side and technology on the other. Nissenbaum invokes legal and policy remedies to rectify what she sees as political asymmetries in allowing blame and accountability to fall upon inanimate objects. It is, however, the mere recognition of the ability to blame information technology that defines it as a political object, and our interactions with it as politically motivated.

Economic

When determining the value of technology within an organization, a common simplification is to compare the capital investment in technology to the anticipated value of productivity increases.

Kling and Scacchi assert that considering technologies and people as independent units of evaluation, the discrete entity model, is inadequate when determining the socioeconomic value of interactions between people and information technologies [7]. A more synthetic view, the “web of computing,” calls for consideration of the interactions between people and information technology as having inherent value. They discuss the failure of organizations to consider the specific skills of workers needed to maintain, extend, and understand technological infrastructure. The simplistic mistake of considering new technologies fitting into infrastructure that is currently existing within the organization discounts the fact that workers who contribute to operations leave and take with them the tacit knowledge that keeps the technology running, seen in the description of the TRACKER system at Audiola. The value of “articulation work” through which workers come to understand and streamline business processes around a configuration of technologies carries what Suchman terms “the hidden costs of computing.”

On the consumer side of the economic relationship between people and technology, Kling and Lamb point out the transformation of retail spaces as a result of the convenience of online shopping [8]. Where technologies have made the consumer process easier, and shoppers are dis-incented from physically going to places of business, the technology of e-commerce has forced retailers like Wal-Mart to invest capital in providing social and community incentives in addition to economic when attracting patrons.

Social

A misconception of technology is that it simply “makes life better.” Analysis by Kling and Lamb suggests that this may not be so straightforward. Using community structure in Irvine, California as an example, the authors show that decentralizing consumption by creating independent, self-contained centers dominated by efficient technologies of chain retailers may be eroding the social structure of the community [8]. The transient nature of transactions and high-volume setup of consumer experience leaves little opportunity to develop ongoing relationships with others who patronize services or the staff who provide them.

On the other hand, technology can bring together people in productive social ways where opportunities did not previously exist. Although the DIALOG system ultimately failed when management restrictions and sanctions were introduced, Zuboff describes the early stages of community formation, notably the “Computer Coffee Break,” as representing significant social capital [5]. As Zuboff observes, collaborative/community technology served to create social structure in professional efforts as well as non-work related information exchange without detriment to productivity.

Further, the tendency of technology implementation to supplant social processes is shown to frequently have disruptive effects. The social interaction of those communicating through CSCW-based technologies frequently encounter difficulties that are not present in face-to-face interactions [9-11]. The assumption that workgroups can simply implement technology to resolve distance ignores critical social components to communication processes. The result can be seen in numerous examples such as refusal to engage the Worm Community System, Balkanization of professional and academic community members based on expertise or social ranking in UARC, and even simply inability to draw implied meaning based on gaze detection

when using video conferencing [12]. The lesson in documented failures of technology to replace in-person interaction highlights the fact that human-technology interaction is a highly complex issue.

(997 words)

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