

"Smart Machine Derailed" - Engineers Accuse Passengers

by: Hugh Willmott

In 1988, Shoshana Zuboff published *In the Age of the Smart Machine*, a book which received considerable popular, managerial and critical acclaim. It combined analysis, case study and prescription in ways that enabled a wide audience to think more clearly and critically about the threats as well as the opportunities posed by "smart machines". In this brief commentary, I review and critique her current thinking in the light of her earlier work.

Zuboff's most recent thinking, I argue, acknowledges and laments the existence of resistance to the kinds of change - towards co-learning and empowered work - commended in *Smart Machine*. But it does not provide a coherent or compelling analysis of this resistance. Instead of extending and deepening her analysis of the dystopian features of "the information society", she substitutes moral exhortation orchestrated by the anticipation that market forces will drive out firms that operate dystopian practices.

The Emperor and the Smart Machine

In *Smart Machine*, Zuboff encouraged us to think about how IT might be used to organize work in ways that can "empower" employees. In *The Emperor's New Information Economy*, she reiterates much of the *Smart Machine* thesis to argue that

"The new work depends upon a radically different approach to the distribution of knowledge and authority, according to principles of equal access and equal opportunity" (Zuboff, 1996:14).

To appreciate the basis and thrust of Zuboff's recent thinking, it is therefore relevant to revisit to *Smart Machine*. There she sets out the thesis that information technology has the potential for developing more effective and humane, "informed" work organizations and contends that this potential is frustrated so long as established methods of organizing are retained. The contrast between established and informed organizational practices can be summarised as follows:

Established Organization	Informed Organization
Conflicts of interest; often adversarial relationships	Synthesis of interests; co-learning; "presupposes relations of equality"
Restricted access to knowledge/information	Open access to knowledge/information
Top-down imperative control	Learning community
Fixed structures and procedures	Emergent and flexible structures
Detailed, task-related jobs	Self-managing, innovative, empowered work

In *The Emperor*, Zuboff (1996) acknowledges that powerful and cheap information technology is now widely deployed. But, she argues, its use has not been accompanied by *a new social contract derived from a new moral vision*" (ibid : 13). Why not? Because, in addition to the technology, the realization of the information economy requires a radically different approach to the organization of work. Hence the allusion to the Emperor's new clothes, or the lack of them. More specifically, Zuboff contends that the information base of organizations must be opened up to "members at every level", thereby

endowing them with "the authority to express and act on what they can know" (ibid : 16) - a change which implies a "new social contract that redefines who people are at work, what they can know, and what they can do" (ibid). However, as I argue below, this change still leaves management ostensibly "in control" and, by default, unaccountable to employees.

Zuboff contends that workplaces have been founded upon "a division of love" (ibid : 16) in which value is ascribed to some members (e.g. managers) as it denies the value of others (e.g. employees). In the post-IT workplace, this division is seen to conflict with the effective use of the new information technologies. It must therefore be replaced, not by "taking an axe to the corporation" as leading advocates of Business Process Reengineering have urged (e.g. Hammer) but, rather, through a process in which "the moral fabric and emotional texture" of organizations is "reimagined" (ibid). "The successful reinvention of the firm", Zuboff writes,

"will continue to be tragically limited as long as the principal features of modern work are preserved. Unlocking the promise of an information economy now depends upon dismantling the very same functionalized managerial hierarchy - with its moral vision, social system, entrenched interests, and vertical focus - that once spelled greatness" (ibid : 14).

Zuboff's conception of the fully realized information economy, based upon "a new moral vision", may be appealing, not least for those who are concerned about the anomic effects, in the form of job insecurity and depersonalization, associated with the application of IT. However, her strategy for translating this vision into organizational practice relies entirely upon exhortation backed up by faith in the inevitability of emancipatory change as a necessary condition of commercial survival. Earlier worries about the Panopticon articulated in *Smart Machine* have mysteriously evaporated. Zuboff's concerns seem to have shifted from developing a critical analysis of the relationship between information technology and work organization to berating business leaders for their retention of established structures underpinned by a threat of corporate extinction unless they get informed by acquiring "the moral leadership that can articulate new values and embed them in a complex and long-term process of change" (ibid : 17).

Zuboff's framing of the problem of ineffective utilization of information technologies discharges her from contemplating the possibility that, for most decision-makers, rationality and effectiveness per se are not the overriding principles or priorities. In the context of capitalist work organizations, the more pressing concern is to safeguard the material as well as the psychological security of the decision-makers. As a consequence, IT is selectively adopted and applied in ways that are expected to pre-serve prevailing relations of power and privilege rather than to question their rationality or replace them, even though this may be counterproductive in the medium term. Zuboff's exhortations are characteristic of a preference amongst contemporary management thinkers for conceptual frameworks that assume away the contradictory forces inherent within the structures of liberal capitalist economies:

first, the concern of investors to do what they can to ensure that managers direct and control organizations in ways that are deemed to serve their interests;

second, the concern of employees that their jobs are secure and that their working conditions are satisfactory; and

third, the concern of managers (as material and symbolically privileged employees) that their employment and authority is not compromised or endangered by moves towards self-organizing teams, etc.

In common with other academics-cum-gurus, Zuboff assumes that the learning, informed organization is capable of reconciling these three sets of concerns. The failure to address these contradictory forces was somewhat obscured in *Smart Machine* by its explicit consideration of "power" and its attentiveness to the dystopian potentials of new technology. In the *Emperor*, this failing becomes more transparent as idealism and prescription is substituted for analysis of the politico-economic relationships that are productive and defensive of the "functionalized managerial hierarchy". While there is talk of "dismantling the functionalized managerial hierarchy" (ibid : 14), her analysis fudges, or at least fails to address head-on, the basic inconsistency (or contradiction) between:

1. Assuming that a "posthierarchical" approach to management will develop in which "there are no a priori designations of managers and managed" (ibid : 407); and
2. Assuming the development of a meritocracy of managers who remain "in control" and who are responsible for ensuring the development and integration of "the managerial domains".

Smart Machine seems to have been guided, at least in part, by a concern to highlight the nightmarish vision of the Information Panopticon, in which information technology is used to reinforce imperative control. This dystopia was contrasted with the prospect of developing informed organizations that might challenge, if not entirely eliminate, tendencies towards the Panopticon. In *The Emperor*, moral exhortation displaces attentiveness to the darker possibilities of the Information Panopticon. Underpinning this shift seems to be a belief that the insights and prescriptions of *Smart Machine* have, as yet, been insufficiently heeded by policy-makers, managers and others who have still to assimilate fully the insight that effective use of IT requires what, in *The Emperor*, is described as a new division of love. If only they would listen to her message, they would surely act to change the world. But Zuboff does not address the structural basis of their resistance to her exhortations.

In companies that have the financial and/or intellectual resources to dominate markets, and thereby ensure the profitable growth that provides a basis for employment security and above better-than-average working conditions, it may be possible to recruit and train managers who are better able to cultivate relationships with employees that depart from the features attributed to ideal-typical established organization (see above), a possibility that is illustrated in Zuboff's study of Cedar Bluff. But in most companies, especially those operating in highly competitive markets where a premium is placed upon short-term performance, the kind of informing strategy envisioned by Zuboff is inhibited by the structure of the employment relationship where trust and security are systemically abraded.

Conclusion

In this commentary, I have questioned whether the problem of resistance to enacting the vision of the posthierarchical, informed organization, commended in *Smart Machine* and amplified in *the Emperor*, is adequately formulated in terms of the ignorance, stupidity or deafness of individuals. I accept that there are important psychological dimensions to such issues (Knights and Willmott, 1989). But, it is important to formulate and analyse resistance (often taking the form of rhetorical borrowing without practical application) to Zuboff's thesis in terms of the "truth effects" of a structure of social and economic relationships that simultaneously stimulates such messages (as in *Smart Machine*) and impedes them (as in the case of those who fail to grasp and/or implement her prescriptions but may nonetheless claim that their organizations are well on the way to be informed and staffed by empowered employees). Without this analysis, it is too easy to conclude, in Panglossian (2) fashion, that all will be for the best in the best of all possible worlds since those who fail to heed Zuboff's counsel will sooner or later "fall prey to the slow grind of the market place":

"environmental conditions will select for success firms that proactively adapt their organizational methodologies to the moral, social and psychological requirements of an information economy" (Zuboff, 1996 : 17).

Given Zuboff's explicit concern about the direction and pace of organizational change, it is disappointing that she has not searched out perspectives which might shed light on the structural impediments to the changes which, in *Smart Machine*, she was concerned to promote. Of course, much of the IT literature is "techie" in orientation; and much of the residual literature is guided by broadly functionalist and elitist assumptions that underpin the diagnosis and prescriptions presented in *Smart Machine and The Emperor*. However, there is a developing critical literature (for references, see Lyytinen, 1992; Walsham, 1993; Knights and Murray, 1994) which could be mobilised to revisit issues examined in *Smart Machine*. In contrast, Zuboff's recent work harbours the fantasy that corporate leaders will provide "moral leadership" and, failing this, that impersonal forces will automatically deliver the "new values".

Endnotes

(1) This paper is based upon a response to her plenary address 'The Emperor's New Information Economy', at the IFIP WG 8.2 Conference, held in Cambridge in December 1995. See references for full details.

(2) The hero of Voltaire's *Candide*.

References

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We invite further commentary and reflection on this article. Authors should direct their contribution towards the impact of IT on management and organisation, with a particular focus on the possibility of worker resistance to organisational changes that emanate from computer technology.