BOOK REVIEW

Knowledge and Technological Development Effects on Organizational and Social Structures

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INTRODUCTION

The effects of technology on society are diverse and not easy to determine. We can depart from universal broadband access and its services and application to describe a solid Broadband Society. The effect on organizational and social structures is an interesting object of study, as detailed in this review.

From the approaches outlined by McLuhan, in which the medium is the message, through to Williams and Hall, who discuss the process rather than stasis and audience response, the debate surrounding technology versus contents has been not resolved. They both need each other: in the 21st century, technology needs contents, and contents, technology. We have arrived at a harmonic intersection, with the actors playing equal roles. Human beings need computers, and computers are nothing without humans. Humans are smart, but with the help of computers, they are smarter still. The discussion is not a fight, rather, collaboration.

Organization of the Book

Some points in the book could be improved upon (for example, out-of-date references in certain chapters, biased methodological approaches and a superficial view in others), but overall it gives the reader a general and applied perspective of technological effects.

The reader can approach the subject from different perspectives: referring to open source software (OSS) migration—which helps organizations to ensure marginalized perspectives—a case study in South Africa relates how shareholders were informed about the decision to migrate to OSS, but were not involved in the decision making process. However, in this case study, there are clear limitations, such as sample size and data extrapolation.

In a Latin American case study on projects for clustering SMEs, the author gives an account of the difficulty in transferring successful practices from industrialized countries to developing regions with a slight adaptation. In order to succeed, an adequate electronic network readiness, a capability to join all shareholders, a prestigious research centre or university and effective regional innovation systems must be in place.

Another case study, this time based in Finland, looks into a sample of its enterprises. The goal is to identify needs, actions (work environment management, change management in general and the sociotechnical approach) and results in order to bring about an improvement in work and productivity in three regional industrial development cases. Quality of working life, productivity and ergonomics and occupational risk prevention (ORP) should be viewed as an investment in an enterprise. In this kind of analysis, it would be interesting to compare the results obtained in a moment of economic growth versus depression. It would give an indication of how an enterprise regards such quality, which is usually the first thing to be sacrificed in moments of economic crises.

The range of studies set out in the book also includes an ethnographic study of a telemedicine system implemented in northeastern Peru.

We find more methodological approaches in some chapters. For example, in chapter 7, a technological deterministic analysis of the evolution of virtual reality highlights a major criticism of the technological deterministic viewpoint, which is that it does not consider the context of use and human factor. In another chapter, the author looks at the analysis of data

through the use of the Grounded Theory methodology and its associated methods. It provides a way of identifying the causal conditions in any case where the underlying dynamics of any type of organizational change are unknown. With specific regard to Design Research (software engineering), it can be an effective tool for developing models of organizational behaviour. Furthermore, the analysis of leadership is transferable to other situations.

Meanwhile, the role of Chief Information Officer (CIO) needs management issues linked to technological skills. The emergence and the evolution of this figure justify qualitative methodologies. The Grounded Theory of Glaser and Strauss is used again, but requires prudence.

Another approach is the meta-design of socio-technical systems, which integrates two structures and processes: technical systems—engineered to provide anticipatable and reliable interactions between users and systems—, and social systems, contingent on their interactions. These socio-technical systems are still the subject of evolution.

The Stafford Beer's Viable System Model (VSM) of theory and practice legitimizes enquiry in the face of audit complexity and ensures proficiency, relevance, and reliability. The variant VSM/NVA (Network Visualization Analysis) allows the option of identifying decision-making leaders and their socio-technical relevance.

A key factor for enterprises and institutions in facing technological skills is to take into consideration the human (and social) actors and technical actors. In line with the Actor Network Theory of Callon and Latour, the task of controller in an entity is an opportunity not a threat, although in certain situations, the latter is the most common perception. The introduction of methodology in the valuation of technical adoptions is to be recommended.

If the human factor determines the final outcome in many management processes, the monitoring of data, in detailed perspective, at least allows information to introduce improvements. Data management programs evolve in some sense to generate more options for

comparison. From TPS (Transaction Processing Systems), MIS (Management Information Systems), DSS (Decision Support System) or EIS (Executive Information Systems) to Expert Systems, a manager in an entity can learn and interpret trends and results.

From a total quality perspective, technological developments are almost obligatory in order to advance. In relatively recent developments, such as the Internet and e-business, the proliferation of metrics permit an increase in the quality of the internal functioning of enterprises, and in front-office relations (enterprise workers and customers). It is enhanced in public administration, because in the path of public worker productivity optimization, it is used to include management systems rooted in technology. In the case of the Internet, search engine optimization, search engine marketing and social media marketing are tools that help to control traffic and the following of products and services, to help those in charge of the e-business market to control the impact of their digital marketing strategies, and to offer transparency in the value chain, including the customer. It is an example of the power of technologies in the research of quality.

SUMMARY

In summary, it is an interesting book, although perhaps too eclectic, which is a problem with collective initiatives. The myriad of technological impacts, which affects all kinds of structures, is a very complex subject matter to order. *The book is recommended*. It means an eclectic amount of analyzed cases. We understand it is produced by the typology of this kind of projects. In this case, there is a mix between theoretical and practice approaches, but the feeling in the reader is of a lack of axis.

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