

Transforming Universities in the Online World

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STRUCTURE, PROCESS AND CHANGE IN THE ONLINE WORLD

As the world moves online, various pressures drive changes in the way industries and organizations do business: market pressures, for example, global competition; technological pressures, for example, the use of e-commerce to lower the costs of production; and societal pressures, for example, government regulations (Turban, King, Lee, & Viehland, 2004). In considering the implications of the online world for industry, it is necessary to consider both structure and process, where process includes change processes (Gregor & Johnston, 2000, 2001; Johnston & Gregor, 2000). In Giddens' (1977, 1984, 1991) theory of structuration, process (activity) and structure are reciprocal. As Giddens (1977) states, "social structures are both constituted by human agency, and yet at the same time are the very *medium* of this constitution" (p. 121) or, as Rose (1999) puts it, "agents in their actions constantly produce and reproduce and develop the social structures which both constrain and enable them" (p.643).

This link between process and structure is important also at the organizational level. In order to develop technology and systems to survive in the online world, an organization must engage in certain processes, such as business process re-engineering. Many information systems fail and exhibit the productivity paradox (Brynjolfsson & Hitt, 1998), that is, investment in IT appears to be unrelated to increased outputs. Organizations that gain in productivity appear to be those in which there is a restructuring of the organization and flatter, less hierarchical structures with decentralized decision making. It is also important to note that successful change is not solely "technology led" nor solely "organizational/agency driven." Change arises from a complex interaction between technology and the people in an industry or

organization. The conceptual model developed here is based on the structurational theory of information technology of Orlikowski and Robey (1991). This model posits four relationships: (1) information technology is a product of human action; (2) information technology is an influence on human action; (3) organizational properties are an influence on human interactions with information technology; and (4) information technology is an influence on the organization. The model is extended to include the market, technological, and societal influences from the external environment that affect an organization.

So what are the implications of the online world for industry structure and process? An organization can decide to produce each of the goods and services needed along the value chain in-house or to outsource it. In the online world, barriers to participating in electronic transactions to facilitate outsourcing are decreasing. There is a view that greater use of inter-organizational networks will lead to vertical disintegration and greater outsourcing. Some expect disintermediation to occur, where intermediaries are removed because of the ease with which they can be bypassed on electronic platforms. However, different forms of intermediaries may also emerge, for example, a cybermediary such as Amazon.com, which to some extent replaces the traditional intermediaries, namely, bookshops.

TRANSFORMING UNIVERSITIES

"Universities are due for a radical restructuring."
(Tsichritzis, 1999, p.93)

The higher education industry and universities are subject to the same pressures as other industries and organizations, and they too must change the way they do business if they are to survive (Duderstadt,

1999). To understand how universities need to be transformed, it is necessary to look at the impact of the online environment on higher education organizational structures and work groups, including organizational roles, workgroup dynamics, and communication. Specific implications for universities can be drawn from the conceptual model based on the structurational theory of information technology of Orlikowski and Robey (1991):

- Organizational change arises from a complex interaction between technology and the people in the organization. For example, information technology makes possible new learning environments and changed work practices for university staff.
- Information technology can influence changes in organizational structure. The improved communication options offered by advances in information technology support the formation of alliances and the “unbundling” of the functions of the university (content, packaging, and presentation). This vertical disintegration, in which functions are differentiated and either outsourced or dealt with by partners in strategic alliances, creates new intermediaries in the learning/teaching network.

There is evidence of organizational change arising from the interaction of technology and people in some universities. In Australia, online and videoconferencing systems have been developed as alternatives to face-to-face communication where the people are physically dispersed (Coldwell & Newlands, 2004; Marshall & Gregor, 2001). These methodologies require both staff and students to cross new socio-cultural borders (Jegade, 2000), change existing work practices, and acquire new literacies and learning skills (Wallace & Yell, 1997). The alternative learning/teaching approaches using ICTs include: the Internet, for example, facilitating synchronous and asynchronous interactions between learners and tutors (Asensio, Foster, Hodgson, & McConnell, 2000; Frank & Toland, 2002; Williams et al., 2001); videoconferencing, for example, facilitating tutorials comprising distributed groups of students and remote access to live lectures; digital libraries; computer simulation, for example, as substitutes for laboratories (Dalgarno & Harper, 2004); and many others (Devi, 2001; Discenza, Howard, &

Schenk, 2002; Evans & Nation, 2000; McAlpine, 2000; Ruth, 2002). But these same technological possibilities also permit new working environments for those responsible for the facilitation of learning. Thus lecturers can use the Internet for synchronous and asynchronous communication with colleagues, videoconferencing for meetings, and digital libraries for research. The interaction of these new technologies with the people creates a teaching environment in which lecturers, tutors, and teaching resources can all be networked.

There is also evidence of changes in organizational structure that have been influenced by information technology. Traditionally, universities have carried out all the functions relating to the provision of higher education: content production; packaging content; credentialing programs; presentation to students; marketing; registration, payment and record keeping; and assessment. In the online world, these functions can more readily be “disaggregated” and the university can specialize in those functions that it regards as its “core business,” forming alliances for other functions or outsourcing to new intermediaries in the value chain.

The marketing of a university’s programs can be outsourced to a company that specializes in researching the market and promoting the university. Recruitment can be better done close to the student and, in the case of international students, perhaps in the student’s mother tongue by agents overseas. Library facilities could be provided by new intermediaries close to the students or provided online by cybermediaries. Fee payment, especially online payment, can similarly be outsourced to a cybermediary. Invigilation and related examination administration can be similarly outsourced to an organization specializing in such work, for example, Sylvan Learning Systems (<http://sylvanlearning.com>). The functions of course development and materials development are perhaps the ones seen as most likely to remain with universities. But there are those who even suggest the need for outsourcing and alliances for the performance of these functions. Gibbons (1998) predicts that universities “will learn to make use of intellectual resources that they don’t own fully” (p.61). For example, Unext (www.unext.com) is an Internet-based distance learning “university” that utilizes content developed by the London School of Economics and Chicago, Colombia, Stanford, and Carnegie Mellon

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