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Spreadsheets as Knowledge Documents: Knowledge Transfer for Small Business Web Site Decisions

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EXECUTIVE SUMMARY

How should a small business decide whether and in what ways to use Web technology for interactions with customers? This case describes the creation of a practical decision support tool (using a spreadsheet) for the initiation and development of small business Web sites.

Decisions arise from both explicit and tacit knowledge. Using selected literature from a structuration theory, information management and knowledge management, decision support tools are characterized as knowledge documents (communication agents for explicit knowledge). Understanding decision support tools as knowledge documents sheds light on their potentialities and limitations for knowledge transfer, and assists in maximizing their potentialities.

The case study deploys three levels of modeling: a high-level structuration model of the interplay between information management and knowledge management, a conceptual model of small-business decision-making, and an applied model – the practical decision support tool, itself.

An action-research methodology involving experts and stakeholders validated the development of conceptual categories and their instantiation in the practical tool.

SETTING THE STAGE

Target Group

This particular case involves the development of a model to assist small businesses to establish and maintain an Internet presence. It is based upon the premise that small businesses should perform a business analysis before commencing such a project and that this analysis should lead to “recommendations” for the business in relation to what should go on the Web site, how it should be implemented, how it should be promoted and how its success (or failure) should be measured. The knowledge required to convert the business analysis into recommendations is stored in a spreadsheet, which is used as the instrument to build the model.

The eventual target group for this project is small businesses. The case that this paper describes is the *process* that was followed in the development of the spreadsheet model (or “artifact”) that was used as the *vehicle* for the storage of “business knowledge.”

Structuration, Communication and Power in the Small Business-Customer Relationship

The structuration theory sees history as interplay between social action and social structure. Giddens terms this action-structure interplay the “duality of structure” (1996, p. 100). Any action, large or small, has the potential to change (strengthen, weaken or modify) the social structure in which it occurs. Ultimately, structuration is a theory of power, because the prevalent structural context at any point in time defines the scope of action that is available to individuals and groups. Structure both supports and limits actions by individuals and groups.

As an outcome, the distribution of power in society is a phenomenon of major concern in the structuration theory. However, the phenomenon that underlies the action-structure dynamic is communication. Before information technology (IT) intervenes, communication operates through co-present, synchronous interactions. IT enables the transmission and storing of information that makes possible remote and asynchronous interactions. In the world of physical objects, transportation and storage technologies play the same part as IT for electronic information. Techniques for the transportation and storage of grain or weapons empower an ancient kingdom to project its power to distant places. By developing symbolic systems for recording and transmitting knowledge (such as inscriptions on an obelisk or writing on papyrus), that ancient culture can project its ideas across both space and time, and influence social structure in the future. In this way, analogue and digital information technologies enable human groups to “bind” or bridge time and space. In Giddens’ (1980) terminology, the “binding of space and time” reduces “space-time distanciation”.

This case describes the development of a tool to assist small businesses to reduce space-time distanciation between themselves and their customers, while not placing either at a disadvantage relative to the existing power relationships between them; indeed, the preferred outcome is a sense of enhanced empowerment for both.

Structuration and the Research Design

Until quite recently, the research paradigm of the physical sciences was virtually the only one acceptable in information systems and information management research. However,

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