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Sticking to standards; technical and other isomorphic pressures in deploying ERP-systems

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Abstract

This paper focuses on how and to what extent homogenization coincides with the deployment of ERP-systems. Using the work of DiMaggio and Powell on isomorphic pressures, we argue that the use of ERP-systems may in several ways lead to standardization within and between organizations. Competitive and institutional pressures play a role in ERP-adoption. We introduce a novel form of isomorphism, technical isomorphism. This plays a role in ERP-implementation and manifests itself in the enactment of blueprints for centralization and standard working procedures that are embedded in the ERP-software. A case study of a Dutch publishing company illustrates how coercive and technical isomorphism jointly lead to adaptation of the organization to the system, although the firm aimed to differentiate itself from its competitors.
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1. Introduction

In their quests for competitive advantage, organizations adopt or develop innovations. Enterprise Resource Planning (ERP) systems are such an innovation; their general aim is to enable central and integrative control over all processes throughout the organization by ensuring one data entry point and use of a common database [5,13]. However, adopting ERP-systems may be at odds with gaining competitive advantage, which calls for a unique position that is hard to imitate, whilst ERP-systems are widely used [3]. This apparent contradiction can be fruitfully explored by drawing on DiMaggio and Powell's classic treatment of the concept of isomorphism [15]. They describe several reasons why organizations are similar or isomorphic. Our paper was developed to present an inventory of pressures that may affect the adoption and use of ERP-systems. The key question is therefore: *How and to what extent does homogenization coincide with the deployment of ERP-systems*? By

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addressing this question, we attempted to clarify some important mechanisms that are ignored when considering and managing ERP-implementations.

2. Isomorphism

In their influential article *The Iron Cage Revisited*, DiMaggio and Powell elaborated the concept isomorphism: the phenomenon that practices and process are quite similar across organizations. They argued that various pressures induce organizations to become similar to their competitors. Until publication of their article, competitive pressures were widely considered as drivers of isomorphism; competition in product markets allows only effective and efficient producers to survive, as sub-marginal ones go bankrupt. Thus the punishment for ignoring superior techniques is organizational death and therefore non-adopters are eliminated and the remaining population has only adopters.

DiMaggio and Powell added another concept: institutional isomorphism, which may occur through three mechanisms:

- *Coercive forces* result from other organizations on which the institution is dependent (such as governmental agencies, headquarters, important clients) and cultural expectations in the society where it functions (such as legislation and societal norms on corporate governance, stakeholder management and affirmative action).
- *Imitative or mimetic forces* are standard responses to uncertainty. Decision-makers often face uncertainty about appropriate responses; mimicking the choices of other organizations is one way of dealing with this. Managers thus assume that appropriate decisions were made elsewhere, often by a leading competitor. Such pressures may be especially strong when particular concepts and tools are fashionable [4] and managers feel pressured to adopt concepts in vogue appear up to date.
- *Normative pressures* result from professional organizations or strong. Some occupations have established organizations that control or affect their profession by defining entry to the field and setting enforceable norms to which professionals must comply [18]. Examples are lawyers, certified accountants, medical professions, and those organized in medieval guilds [1,28].

DiMaggio and Powell stress that these forces are distinguishable analytically but not necessarily empirically: they often act in conjunction. Also, the strength of isomorphic forces varies: whilst governments may be able to enforce their norms through legislation and legal enforcement, decision-makers in organizations are free to comply with or ignore mimetic forces. In general, human actors are totally free to decide whether or not to conform to isomorphic pressures. However, coercive forces are often much more 'guiding' than mimetic ones.

Mizruchi and Fein [29] point out that North American researchers generally focused on institutional isomorphism, and neglect competitive reasons. In particular, they showed that mimetic isomorphism has been the most popular mechanism in research. Studies have been mainly conducted in non-profit environments, such as schools, universities, and municipalities. Walgenbach and Beck [44] showed that machine-tool companies were also subject to institutional pressures. In our work, we applied DiMaggio and Powell's notion of isomorphism to a specific domain: the adoption, implementation, and use of ERP-systems.

3. Adopting ERP-systems

Authors present some or all of the following arguments in favor of adopting ERP-systems [22,34,35]:

- integration of business processes through integration across modules (applications) by using one ERP architecture;
- integration of key business and management processes to provide a central overview of organizational affairs;
- access to enterprise-wide data on a controlled basis and thus providing information sharing across business processes;
- coordinating and monitoring performance is possible in real time;
- shifting from a tradition functional mode to a business process mode;