Chapter 18
Autopoietic Knowledge Management Systems

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ABSTRACT

Knowledge management in an organisation is a key activity that aims to improve the organisation's competitiveness through gathering, processing, storing, and sharing of organisational knowledge. Socio-technical solutions designed to support knowledge management are systems for managing knowledge in an organisation. IT systems can support employees in their knowledge processes as well as independently generate, process, and codify knowledge, thus supporting the processes of organisational learning and development of knowledge bases. The cyclical and recurrent character of activities, both in terms of the interactions between process participants in organisations and actions of IT systems themselves, can be perceived in terms of autopoiesis, which explains the significance of knowledge management systems in organisational knowledge processing. The aim of this chapter is to analyse a knowledge management system through the lens of autopoietic perception of the activities taking place in an organisation, which are performed in poietic space.

INTRODUCTION

Knowledge management (Probst, Raub, & Romhardt, 2004) has recently become a key area of consideration in the development of organisational theory. Management refers here to a range of activities aimed at the achievement of specified goals of an organisation and concerns the sphere of appropriate use of organisational knowledge. In the case of knowledge management, the resource that becomes critical to successful achievement of goals is knowledge. Such knowledge needs to be appropriately managed in terms of its acquisition, storage, processing and sharing. In particular, such activities should be performed using IT systems, which enable automation of certain activities and increase the effectiveness of participants' actions. Key to further discussion will be the statement after Sveiby (Sveiby, 1997), Cross and Baird (Cross & Baird, 2000), Nonaka, Toyama, Hirata (Nonaka, Toyama, & Hirata, 2008) that in contrast to data, knowledge is contained in a human and is created during social interactions. It

is interactions that contribute to knowledge creation. They allow it to be revealed, expressed and are the basis for its acquisition by other participants of such interactions. Thanks to interactions, what is treated as individual, tacit, implicit knowledge can become explicit knowledge. As was pointed out by Grant (Grant, 1996), knowledge becomes explicit through its communication or through action. Knowledge through acting, according to Sabherwal and Becerra-Fernandez (Sabherwal & Becerra-Fernandez, 2003), manifests itself in effective action. The authors extent the classic view of explicit and tacit knowledge by the aspect of its objectivity and subjectivity. Knowledge can have a contextual character, connected e.g. with the task assigned to an employee. Pomerol and Brezillon (Pomerol & Brézillon, 2001), distinguish between contextual knowledge and process context. Contextual knowledge refers to a specific task and actions to be performed by an employee, e.g. a doctor has knowledge about disease entities, how they are treated and what medicine should be administered. The second type is knowledge about the task, the procedure for its execution. A doctor has knowledge about how the medical consultation procedure should look like, e.g. what stages of a medical interview should be conducted.

The discussion presented here indicates individual, interactive and processual character of knowledge, the management of which should focus not so much on knowledge as a resource but on a human, who reveals, shares the knowledge he/she possesses. Viewed from this perspective, knowledge management should be focused on human factor, and interaction processes should have a cyclical, repetitive character in order to improve the process of knowledge transfer and shift from subjective knowledge to objective knowledge, which will be able to be propagated if participants have similar knowledge and points of view. Koskinen (Koskinen, 2013) indicates the epistemological character of perceiving knowledge transfer pointing out (based on the theory of Luhmann) that an autopoietic system processes data, information sent in the form of messages, which can only be processed into useful knowledge by a human. As argued by Parboteeah and Jackson (Parboteeah & Jackson, 2007) the basis is here organisational learning, which takes place within systems facilitating knowledge management in an organisation.

There are two approaches dominating in the literature (Roos & Von Krogh, 1996) on knowledge perception: viewing knowledge as a resource that can be managed beyond a human, especially in IT (Information Technology) systems, and perceiving knowledge as a process in which the key role is played by human relations (Wiig, 1997), (Metaxiotis, Ergazakis, & Psarras, 2005). Jashapara (Jashapara, 2006) indicates here the necessity of acquiring knowledge from employees and sharing it in the organisation. According to Nonaka, Takeuchi and Toyama, knowledge is created during interactions between individuals (Nonaka & Takeuchi, 1995), (Nonaka & Toyama, 2005). Knowledge in terms of explicit and tacit knowledge should not be perceived as separate constructs. As pointed out by Nokana and von Krogh, explicit knowledge and tacit knowledge are rather two ends of the same continuum (Nonaka & von Krogh, 2009). Nonaka and Takeuchi also pointed out that conversion of tacit knowledge into explicit knowledge is a social process that occurs between individuals (Nonaka et al., 1995).

Such approach to knowledge management indicates that knowledge management systems should not be treated merely as mechanisms of revealing and storing organisational knowledge, but as a medium facilitating the interactions between participants in terms of a perceivable phenomenon of autopoietic organisation of their interactions. In the discussion that follows, Knowledge Management System (KMS) is considered in terms of a systems view; it is a conglomeration of people, technologies, processes and an operation model that make up an inextricable socio-technical system. From such a perspective, KMS is not merely technology, but relations created between people and IT solutions. It is particularly important in the theory of autopoietic view of a system defined in this way, therefore the discussion presented in the chapter encompasses a knowledge management model dedicated to socio-technical systems such as KMS.

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