Chapter 17
Information Management in Industrial Areas: A Knowledge Management View

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ABSTRACT

The constant demands for modernization of technological business parks and the high availability of technological resources provoke companies to invest in an unplanned and unstable manner in technologies. In this chapter, the authors observe the orientation of the strategic alignment and the perspective of the knowledge management with the objective to structure the implementation of technologies that are focused in industrial production. It uses a multiple cases studies method to verify the proposal of Knowledge Management in the production environment. In development, these multiple case studies evaluate how the insertion of RFID is given in an untimely manner, not allowing its users to obtain the best results from strategic management of knowledge for the alignment to enterprise strategies. These two constructs, reviewed in the theoretical framework, are used to analyze whether managers make decision based on these theories.

INTRODUCTION

The temporary availability of financial resources, acquisition processes via reaction to market demands, relentless pursuit of best levels of productivity in sectors, such as construction, mining and navigation, among many other factors, cause the Brazilian companies to assemble complex technology parks with precarious planning conditions, potentially unrelated in terms of management. On the other hand, it is verified the advancements in information and communication technologies, generating prospects for organizations to manage their assets more effectively, accomplishing with this enhanced cost management and taking the best operating results. According
to Azevedo (2001) “the control of assets (Asset Management) is structured in the oldest concept of industrial capitalist economy, which is ROI (return on investment).” For the author, there is a need for the companies to invest in an asset-tracking method, since surveys show that most of them are stuck in the “maintenance by maintenance and maintenance,” not using asset management as a decision-making tool. This fact results in difficulty of having a common language between production and management, which potentially generates a control failure that, in the future, it may be vital for the organization’s business.

For this purpose, it is observed the acceptance of the RFID technology (Radio Frequency identification) in the market. According to Sayeed et al. (2011) RFID “is one of the most attractive modern technologies that enables the identification of an object, a person, wirelessly, using electromagnetic waves.” According to the authors, the RFID technology can identify objects automatically, with minimum human intervention, since they still consider that the RFID systems became common in logistics enterprises, industries and material flow control. To Hessel et al. (2009) the high level and dynamics in the process of acquisition of information, “without imposing large barriers to data entry,” gives the RFID market a great opportunity, especially in applications developed to meet the specific needs of industrial manufacturing processes.

On the current stage of diffusion of RFID technology, the presented research aims to analyze the implementation of systems based on asset control (industrial park equipment), as a process of knowledge management. An automated system would, in this interpretation, permit the evaluation of asset controls related to monitoring indicators and variables such as performance, cost, time of use and other parameters and factors relevant to the planning of industrial production, enabling knowledge applied management. Within the illustrations of the knowledge to be managed with the application of RFID technology, it is the description of cost management, performance and production, security, among others. Given this scenario, the question proposed for the research is: How is it possible to adopt RFID technology in an industrial environment to enable strategic knowledge management applied to active/asset control?

The methodology used includes literature reviews, which has the purpose of proposition the theoretical basis on strategic alignment and management of knowledge, constructs chosen to discuss the application of technology being studied. Posteriorly, it will be discussed a study of multiple cases, in which the possibility of a strategic knowledge management based on the proposal for an automated system with this technology was evaluated. Among the studied constructs are: theoretical foundations of RFID technology, knowledge management and strategic alignment (the latter has the purpose of allowing the assessment of the application of managed knowledge business strategy). The study of multiple cases occurred in enterprises in the State of Minas Gerais that propose to make control of their assets based on RFID technology of high-intensity informational flows.

THEORETICAL BASIS

In this topic, it will be discussed the theoretical foundations of the basic constructs of the study: RFID technology, in terms of its application and establishment of asset management systems, knowledge management and strategic alignment.

RFID (Radio-Frequency Identification)

A Brief History

According to Hessel et al. (2009) the electronic identification technology emerged around 1930 when the American Army and Navy faced the