Chapter 5
Impact of the Knowledge Management in Maintenance Engineering:
Effects on Industrial Production

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ABSTRACT

Knowledge management has been analyzed in numerous areas of the industrial enterprise, especially in the areas of strategic management, innovation, trade, or administration. However in operational areas with technicians working mainly on the basis of its experience gained over the years, such as the departments of industrial maintenance, there are no deep analysis of the incidence of the knowledge management in these areas. The peculiarities in this type of activity on the inside of the company, knowledge of these people is strongly based on your experience (strong tacit component), difficult to measure and articulate, and however, on numerous occasions, this knowledge not transmitted, can be a high cost for the company (many times assumed as inevitable) due to the increase of production and services downtime, loss of efficiency, or time of coupling of new personnel to these areas.

INTRODUCTION

There is an abundant literature on knowledge management in various industrial activities and services, and the effects of their application (Bahoque, Gómez & Pietrosemoli, 2007; Colino, Martinez & Martinez, 2010; Colino & Riquelme, 2000; Chua & Gu, 2008; Ferrada & Serpal, 2009; Rivas & Flores, 2007; Ven-

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tura & Ordoñez, 2007; Yang, 2006;), but normally these studies focus on global management (especially in the more explicit part), with an emphasis on trade, accounting or internal administrative management, or development activities, but dealing sparingly with the tactical actions of industrial trades, normally considered as an "expense for the company", but having the effect, however, of substantially reducing costs involved (often taken by management itself). Therefore, to manage knowledge in these areas of work means, in itself, not only an improvement in the efficiency of the processes within industrial trades, but also a reduction in the spending caused to the company (by stoppage of production, loss of energy, loss of efficiency or reliability of systems and facilities and longer adaptation time of new technicians).

It is necessary to analyze the personal knowledge to develop organizational knowledge (Martin, 2008; Pauleen, 2009; Volkel & Haller, 2009), that allows to make an analysis of cost-benefit on its application (Volkel & Abeckar, 2008). The internal activities of the industrial enterprise, maintenance needs deep technical knowledge, highly experienced staff and has traditionally been the structure within the company where there is major component of tacit knowledge. Since their duties directly affect the reliability of systems and installations (Sols, 2000), eliminating unwanted stops and performance to critical processes, the need for the appropriate management of such information/knowledge is given that you can have a great strategic value for the company.

Personnel policies, so prevalent today, that they include subcontracting of industrial services, the objectives of the staff, serving only for reasons of age, without submitting to the recently incorporated into a loyalty preprocessing to reduce the external rotation, it is possible to achieve, in some cases, successes in the short term but certainly the lack of sufficient time to create and transfer knowledge in a controlled way, and the lack of sedimentation cultural to assimilate it and implement it, will be the implementation of any model of knowledge management in the medium term (Muñoz, 1999), and to a large extent, the loss of control of the reliability and efficiency of production processes or industrial internal services.

It should be borne in mind that the operational impact of maintenance actions has an impact on the company (Table 1.), affecting most of the fundamental tactical actions, and given that this action can be strategic, it is necessary to check conditions for the capture of that knowledge (Cárcel, 2014a).

Table 1. Tactical aspects of the companies and their relationship with maintenance

Tactical In Business Aspects	Operational Impact of the Maintenance
Production	High incidence, directly affecting the levels of reliability and stops.
Fixed assets depreciation	Increases the operational life of fixed assets.
Repairs and maintenance	Direct responsibility
Fixed assets investment	Transfer to maintenance, once. Your point of view and experience should be in the election.
Staff	In regards to maintenance, is required high qualification and experience.
Training and education	In reference to the maintenance, the training must be integrated with its fundamental tactical functions.
External services and outsourcing.	All subcontractors for repairs or maintenance must be checked by maintenance.
Energy consumption	You must be one of the main functions of the Organization of the maintenance, control and monitoring of energy consumption.
R & D	In the actions of r & d for equipment, facilities and processes, should be the vision of the Department of maintenance

Source: Own elaboration