The Implementation of Continuous Improvement (CI) Methodology: A Case Study of Al-Sindian Paper Mills

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ABSTRACT

This study aims to identify the expected benefits of continuous improvement (CI) implementation, to determine the critical success factors that contribute to CI implementation and to detect the expected problems that impede the implementation of CI programmes at Al-Sindian Paper Mills. The data analysed in this article was collected from a mail questionnaire sent to all staff who worked on a CI (Six Sigma) project at Al-Sindian Paper Mills. The findings of this study indicate that specialised training is necessary for master black and green belts, implementation of the CI requires a quality assurance and also CI approach is not only concerned with selecting a method and forming teams, but extends to covering the enhancement of improvement skills for operators. Finally avenues for future research were provided.

Keywords: Continuous Improvement (CI), Critical Success Factors, Just-in-Time, Kaizen, Six Sigma, TQM

INTRODUCTION

In order to stay competitive in today’s global economy, it has become essential to review and change existing business processes to improve quality and profitability, reduce costs and enable better efficiency (Jain, Chandrasekaran & Gunasekaran, 2010). Continuous improvement (CI) is an important managerial strategy for developing competitive capacities to cope with the turbulence and uncertainties of external environments and to outdo competitors (Eriksson & Hansson, 2003; Bessant & Francis, 1999). CI has helped in the development of several enterprises in recent years by adding mechanisms to the work process, in which a high proportion of the organisation can become involved in its innovation and learning processes (Bessant & Francis, 1999).

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CI has also become more important than ever in driving and sustaining excellence in order to keep pace with market and customer demands (Fuller, 2000); it is no longer enough simply to have a perfect product or service. CI has become an elementary need in the market for building sustained and competitive advantages through perfect and effective production processes (Longenecker & Scazzero, 1996). Innovation, change and continuous adaption are constants in modern manufacturing competition (Delbridge & Barton, 2002). CI has thus become a main concern of management in developed countries; the process involves people, equipment, supplies, materials and producers (Kumar & Kumar, 2009). In the CI approach, every step of any process in a service or an operation has room for improvement (Temponi, 2005); according to many world-class manufacturing systems, CI is considered one of the foundations of high-quality production systems (Wainwright & Bance, 2000).

For all of the supposed benefits of CI programmes, however, these programmes often fail in many firms; their initially shining results often fade quickly (Mitki, Shani & Meiri, 1997). Working with CI can prove to be successful in establishing a culture of development and “constant learning”, but establishing continuity is difficult (Bessant & Caffyn, 1999). The failure to realise the promised results suggests that these implementations prove to be challenging for some organisations; a number of factors should be addressed in order for CI to become a sustainable improvement technique, and not just another “management fad” (Pepper & Spedding, 2010). Accordingly, this paper seeks to identify the expected benefits of continuous improvement (CI) implementation, to investigate the critical success factors that contribute to CI implementation and to determine the expected problems that impede the implementation of CI programmes at Al-Sindian Paper Mills

LITERATURE REVIEW

This section will examine previous literature on the CI concept. CI methodology began during the nineteenth century as part of the Industrial Revolution in Europe, where management set incentive systems in place to encourage employees to drive improvements. Management later started to use scientific methods to analyse and solve production problems, and to set operational standards (Bhuiyan & Baghel, 2005).

During the Second World War, the US government set up a “Training within Industry” programme in which supervisors could acquire skills in CI, but after Japan’s defeat put that country nearly in last place among global manufacturers, the United States sent leading experts (including Dr W. Edwards Deming) to help in the rebuilding of Japanese industry (Mitki et al., 1997). The Japanese developed the CI concept into what they called *kaizen* (“continuous change for the better”) through the involvement of all employees (Marin-Garcia et al., 2008). By the 1970s, Japan had moved from the bottom to the top of low-cost quality manufacturing countries in the world. Among the many Japanese organisations that had embraced Deming’s advice, the most notable was Toyota, which spawned several improvement practices, including just-in-time (JIT) and total quality management (TQM) (Hyland, Soosay & Sloan, 2003). The success of a variety of Japanese companies caused other firms to reexamine their own approaches, at which point kaizen also began to emerge in the United States (Aoki, 2008). This was particularly the case with US firms that faced difficulties in producing quality products; Japanese firms, meanwhile, had managed to gain a high market share and to become major producers of products such as automobiles, televisions and other electronic items (Gulbro et al., 2000). By the early 1980s, Western industries had started to develop and implement CI programmes (Witell et al., 2005). CI was used in several management philosophies, including “lean manufacturing”, “Six Sigma”
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