Chapter 2
Auditing for Evaluating the Degree of Agile Practices Implementation

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ABSTRACT

The purpose of the study reported in the chapter is to conduct agile audit comprehensively to inculcate agile culture in the organizations. A survey was conducted among 25 automotive component manufacturing organizations located in Tamil Nadu, India. The audit system consists of 149 agile indices grouped among five clusters. The focus of agile audit was to examine whether an organization had adopted agile principles and to construe the phase of agile journey the organization had reached. The audit also specifically gauges whether an organization has really implemented agile principles and the relative position of an organizations compared with other organizations.

INTRODUCTION

Global firms and industries are focusing to vary their manufacturing practices from mass production to customized production with respect to niche needs of their customers' which can be achieved by practicing Agile Manufacturing (AM) system. AM enables the organizations to cater to the dynamic demand of the customers. AM principles enable modern firms to prosper in a highly competitive environment thereby quickly reacting to dynamic demands of the customers. The implementation of agile principles is a journey through which the organizations become a justifiable agile enterprise. In this context, the conduct of agile audit enables organizations to justify whether agile principles have been adopted by the

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organizations as well as to detect the exact phase of the implementation of agile principles. This article presents a survey being conducted among 25 Indian automotive component manufacturing organizations located in Tamil Nadu. The agile audit was conducted using the comprehensive approach encompassed with agile indices. The agile scores and the stage of implementing agile principles were found.

LITERATURE REVIEW ON AGILE PERSPECTIVES

The articles was analysed based on various views of agility measurement/evaluation/computational-methods/audit. Table 1 summarizes the objectives and approach of various agility assessment studies.

Sharifi and Zhang (1999) suggested the three stage model namely structured interview to build the model, validation of the model and an information system tool for assessing agility.Yang and Li (2002) concluded that study conducted by Amos and Dove (1998) etc., improved the research achievement of agility assessment of mass customization (MC) manufacturing system. This study emphasis the firms' AM capability which currently undergoes MC practices. Tsourveloudis and Valavanis (2002) explored

Table 1. Review on agility measurement/evaluation/assessment

Authors	Objective (Purpose)	Approach
Sharifi and Zhang (1999)	To device a methodology for achieving agility in manufacturing organisations.	The research was carried out through conceptual model based on literature review and the methodology to become agile was developed through field interviews.
Yang and Li (2002)	To develop agility evaluation of mass customization product manufacturing.	An evaluation index system of mass customization (MC) product agility manufacturing is formed by three aspects, including enterprise organization management, product design and processing and manufacturing. Then the multi-grade fuzzy assessment method is used.
Tsourveloudis and Valavanis (2002)	To develop an enterprise agility model.	This study used a knowledge-based framework and presented a candidate solution for the measurement and assessment of manufacturing agility using fuzzy logic terminology that allows for human-like knowledge representation and reasoning.
Cao and Dowlatshahi (2005)	To study the impact of alignment between Virtual Enterprise (VE) and Information Technology (IT) on business performance in an AM environment.	Extensive data collection strategy and several tests are used to establish the reliability and validity of the data collected. Extensive analyses of the data using structural equation modelling were performed for five hypotheses.
Lin *et al*. (2006)	To develop fuzzy agility index (FAI) based on agility providers using fuzzy logic.	FAI comprises attribute ratings and corresponding weights, and aggregated by a fuzzy weighted average. To illustrate the efficacy of the method, this study also evaluated the supply chain agility of a Taiwanese company
Sherehiy *et al*. (2007)	To explore existing knowledge about AM practices and agile workforce.	This study identified the global characteristics of agility which can be applied to all aspects of enterprise namely flexibility, responsiveness, speed, culture of change, integration and low complexity, high quality and customized products, and mobilization of core competencies.
Lucía Avella et al. (2007)	To analyse AM in Spain and to find whether it is a critical factor for success in different industries	A conceptual model was created to relate turbulence in the environment with AM practices and business performance. The structural equation model was used to analyse the data based on large sample in the context of Spanish manufacturers.
Vinodh et al. (2008)	To design a tool for quantifying agility in organisations and to test its practical compatibility.	An agile quantification tool was designed initially with 20 criteria agile model. A scoring pattern with a maximum 1,000 marks was incorporated which was then subjected to experimentation in an Indian electronics switches manufacturing company.

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