

Chapter 8.4

Transformation from the Information Age to the Conceptual Age: Impact on Outsourcing

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ABSTRACT

The previous decades have seen the emergence of the Information Age, where the key focus was on knowledge acquisition and application. With the emergence of cross-domain disciplines like outsourcing, we are witnessing a trend towards creative knowledge, rational application, and innovation. We are now progressing from an era that was information-dependent towards the era that revolves around concept development. This age, referred to as the Conceptual Age, will be domi-

nated by six new senses--design, story, symphony, empathy, play and meaning--creating a need to diverge from the current reliance on linear and sequential algorithmic practices in outsourcing and to adopt cognition based engineering and management approaches. This article lays the foundation for offshore engineering and management (OEM) and discusses estimation issues in OEM that have their roots in software engineering. Also, this article identifies the limitations of the current methodologies from an outsourcing point of view, and delineates how they can be deployed effectively for an outsourced environment.

INTRODUCTION

Professional outsourcing relies greatly on the attitude, innovation, and creative instincts of the taskforce involved. Pink (2005) highlights the transformation of the society from the Information Age to the Conceptual Age from the psychological point of view, and emphasizes that six new senses will play an important role in the Conceptual Age. While design, play, and meaning will be the prime senses for corporate outsourcing, story, symphony, and empathy will be the potential senses for *personal offshoring* (Gamerman, 2007). The development of the working components of the six parameters of Conceptual Age will occur by cultivating the skill set and education (Johnson, 2006). Corporate outsourcing will be driven by these conceptual components. The need for reorienting education has been justified for future success (Greespan, 2004). The criteria for economic success and increased productivity have been broadly classified as creativity, artistry, cultural diversity, and technical experience. Oversupply, outsourcing, and automation are perceived to be the defining characteristics of the evolving state of economy (Wikipedia, 2007).

From the outsourcing perspective, software-intensive systems will play a significant role in a variety of projects, creating the need for a new strategy to improve the dependability and trustworthiness of the software. This motivates the creation of offshore engineering and management (OEM) as an emerging discipline. The primary forces driving the emerging OEM trends are as follows:

- i. The competition between the left brain and the right brain will pose new problems of demands, supply, and satisfaction in the conceptual age (Pink, 2005). This will lead to greater emphasis on cognitive aspects of information processing and less dependence on routine conventional data processing

areas as manifested in the outsourcing activities of the current decade, like call centers, medical transcriptions, and claims processing.

- ii. Personal offshoring will boost the e-service sector to meet the demand for new variants of existing products and services. Corporate outsourcing will be directed toward mass-scale and bulk capacity products through reorientation of knowledge workers (Lumb, 2007). This trend is imposed by the era of abundance and is mandated for the coexistence and survival of companies.
- ii. The phenomenon of software aging is important in the context of cognitive support for outsourcing in the conceptual age. The detection of the onset of software aging can help to prevent dynamic failure events. Multivariate state estimation techniques (MSET) have been investigated for real-time proactive detection of software engineering mechanisms in operating environments involving multiple CPU servers (Gross, Bhardwaj, & Bickford, 2002)

OFFSHORE ENGINEERING AND MANAGEMENT (OEM)

OEM proposes the systematic and structured application of scientific, engineering, and management principles, through the use of proactive software engineering and information technology approaches, in the business process outsourcing arena. Proactive software engineering can be defined as a framework that extends the scope of conventional software engineering by incorporating additional concepts of fault tolerance, graceful degradation, software aging, adaptability, usefulness of software (pre/post-development) documentation, user manuals, and measure of module level machine intelligence quotient (MIQ) (Patki, 2006; Patki & Patki, 2007). MIQ is a measure

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