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Chapter XIV

Knowledge Creation and Adaptive Collaboration Based on XML Web Services

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Abstract

This chapter introduces the adaptive collaboration (AC) and its potentials in the new paradigm of the 21st century networked society. It is an innovative information technology system for knowledge creation based on the XML Web services, which is essential to promptly meet the increasingly diverse needs and kaleidoscopic changes in economy. The AC is critical in the ubiquitous society, where constant improvement of business processes and cooperation and collaboration with both existing and new systems are required. Today's knowledge is considered ecological and organic in a way that it is flexible enough to swiftly sense numeral shifts in the environment. The new method that integrates a number of different systems and applications into one system to enable the AC has been generating much attention as it may meet the diverse and growing demands in the future of the ubiquitous society.

Introduction

In 21st century society, knowledge has attained independent value of its own. "Knowledge" in the networked society reflects the new value resulting from the dynamic interactions and sharing among knowledge of individuals and organizations.. Today, the rapid aging of the population amid extremely low birthrates is a pressing concern to the Japanese society as it may threaten Japan's most valuable assets for its established economy, its intellectual resources. This concern has spread among government, industries, and citizens alike. In this chapter, we introduce the adaptive collaboration and discuss its potentials in the new paradigm of the 21st century networked society. It is an innovative information technology system for knowledge creation based on the XML Web services.. It is strongly believed that the system will positively contribute to Japan's ability to cope with the aging/low-birth rates problem of the Japanese society. In other words, we aim to challenge a variety of problems posed to the networked society by promoting knowledge creation activities with the utilization of the adaptive collaboration. It is a new system that produces dynamic and valuable interactions among human resources through sharing, interlocking, and collaborating with different types of knowledge.

Building a New Social System by Knowledge Sharing

Depopulation, Aging, and Reconstruction of Human Resources

For six consecutive years, the Japanese labor force has been in decline. The post-war baby boom generation, born between 1947 and 1949, will become over 60 years old after 2007 and will start retiring. The overall workforce will dramatically decrease which will heavily influence the Japanese labor market. The population of the post-war baby boom generation is larger compared to that of other generations, accounting for 5.4% (6,900,000 people) of the national population. Furthermore, among the employed population, they account for 8.6% (5,400,000 people), which is 20% to 50% higher than any other generation. Therefore, as Japan faces serious depopulation and aging problems, maintaining and strengthening the development of and securing of human resources becomes the critical issue.

Today, the number of the people older than 65 years of age has reached its highest, 24,880,000, which accounts for 19.5% of the national population (127,690,000 people). At the same time, the birthrate, or the average number of births per woman (total fertility rate), has reached its lowest, 1.29. Depopulation and aging will also influence the Japanese economic growth and pension system. The Japanese welfare system entirely depends on the current workforce. Hence, the retired population is supported by the generations still working. As the aging and retiring population increases, the welfare system places a heavier tax burden on younger generations. The Japanese economy is anticipated to vanish if it is unable to