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ABSTRACT

Globalization is generating product synergies, high purchasing power, and access to world markets, which is ultimately increasing the competition. To sustain in the today's global business environment, knowledge plays an important role in increasing the performance and responsiveness of an organization. Due to the role of knowledge, Knowledge Management (KM) has come into light. KM is basically concerned with the creation, capture, storage, application and reuse of knowledge. Keeping knowledge in mind, in this thesis, three architectures have been proposed. These architectures are based on knowledge extensive, knowledge intensive and the existing system, from these one of the architectures are to be selected for the implementation of KM in industries.

However, selecting a proper architecture for the implementation of KM is a kind of multiple criteria decision making (MCDM) problem required to consider a large number of complex factors. The analytic network process (ANP) is a new MCDM method which can deal with all kinds of dependencies systematically. Since the ANP has these advantages, in this thesis work, we develop an effective framework based on the ANP to help industries to evaluate and select the architecture. ANP framework presented in this thesis work consists of Cost, Competitiveness and Responsiveness as determinants for evaluation of the architectures. The framework explores relationships among Organizational Structure, Process Integration and Innovation, and also among Knowledge Extensive, Knowledge Intensive and Existing system architectures for implementation of KM. Additionally, evaluation matrices are presented to illustrate the application of the proposed framework. Also, sensitivity analysis is conducted for incorporating the variation's in expert's opinion for relative importance of one determinant over the other in relation to implementation of KM.