Chapter 4.9
On the Design of Knowledge Management System for R&D Organization:
Integration of Process Management and Contents Management

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ABSTRACT

This chapter proposes a framework for designing knowledge management system (KMS) for R&D organization. Broadly, KMS comprises two principal modules: a process management module to administer knowledge activities to generate and utilize knowledge, and a contents management module to deal with knowledge contents, input and output of knowledge activities. The two modules are then materialized through two operational systems: workflow management system (WFMS) for R&D process and R&D knowledge management system (RKMS) for R&D contents. As a building block to integrate the two systems, workflow-based knowledge map is suggested. The authors admit that the research is an exploratory proposal that suggests merely a conceptual scheme. Therefore, it is required to elaborate detailed procedure and materialize real system.

INTRODUCTION

Recently, knowledge management (KM) has attracted increasing recognition from academicians

and practitioners alike. In a corporate setting, the functional spectrum of KM is so ample, ranging from procurement of raw material to the marketing of end products. Amongst others, R&D organization serves as the primary actor of knowledge management (KM), since it is the major source of knowledge generation and dissemination. Furthermore, R&D organization may be a challenging test bed for KM in that it needs to coordinate collaborative work among knowledge workers and ill-defined workflows across knowledge nodes. Despite the importance, however, little attention has been paid to development and implementation of KM for R&D organization. In this regard, the main purpose of this chapter is to propose a framework for designing KM system (KMS) of R&D organization.

Broadly, KMS is composed of a process management module to administer knowledge activities to generate and utilize knowledge and a contents management module to deal with knowledge contents, input and output of knowledge

activities. Accordingly, the framework is composed of two major pillars, process management for R&D activity and contents management for R&D knowledge. Then, we propose two operational systems: a workflow management system (WFMS) for R&D process and an R&D knowledge management system (RKMS) for R&D contents. The overall architectures of WFMS and RKMS are briefly described and the procedure to integrate RKMS and WFMS is explained. The proposed system is web-based in that it is designed and developed on the web environment.

OVERALL FRAMEWORK

Matching WFMS and RKMS

As explained before, KMS for R&D organization comprises two major components, R&D activities and knowledge contents. R&D activities are associated with processes to generate and utilize

Figure 1. Overall framework of KMS to integrate WFMS and RKMS
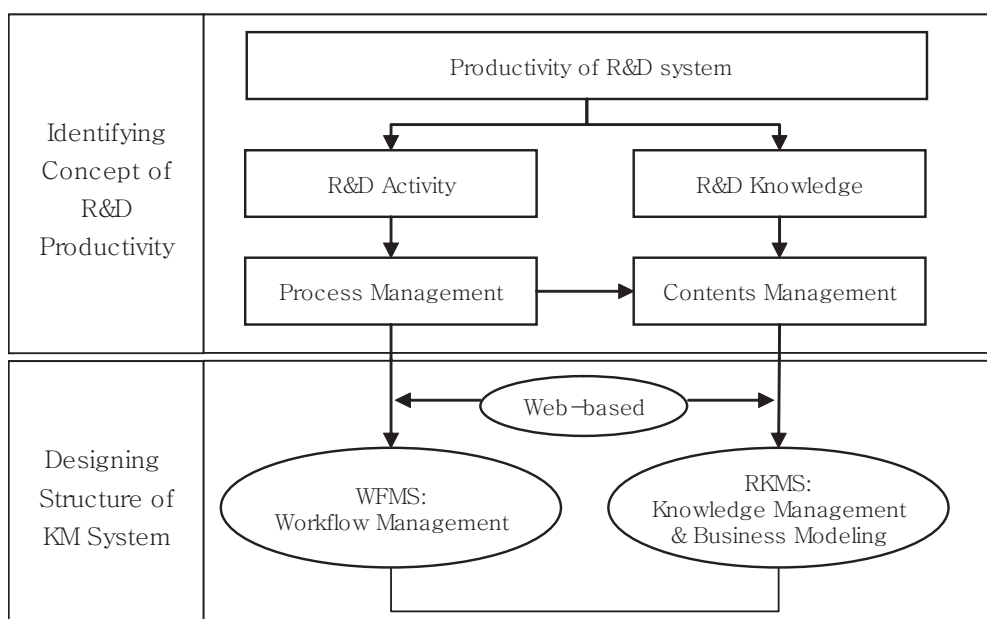
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