Budsakorn Sukonthawongsaroth 2008: Classification Algorithm for Knowledge Mapping of Organizational Knowledge Workers. Master of Science (Computer Science), Major Field: Computer Science, Department of Computer Science. Thesis Advisor: Associate Professor Anongnart Srivihok, Ph.D. 106 pages.

Knowledge Management is a process that helps organizations to identify, select, organize, disseminate, and transfer important information and expertise that are the part of the organization's memory. The structuring of knowledge enables effective and efficient problem solving, strategic planning and decision making. A knowledge map is a navigation aid to explicit and tacit knowledge, supporting Knowledge Management and describing knowledge flows throughout an organization. However, the study of knowledge mapping in Thai organization is not widely conducted. Algorithms are used to classify attributes of knowledge workers to expert classes in order to generate a knowledge map. This paper proposes an approach for knowledge mapping of experts in organization by using data mining techniques. The expert classes in this paper include Power Generation Business, Account and Finance Deputy Governor and Fuel Deputy Governor, Electricity Generating Authority of Thailand. Data includes 28 sample groups and 805 instances. we classified domain knowledge by using Decision Trees (C4.5), OneR and Naïve Bayes. The prediction performances of three classifiers are measured by four indices used for evaluating the efficiency of classification. The indices include Precision, Recall, F-measure and Root mean-squared error (RMSE). There are two steps in this study. Step 1, three classification algorithms including Decision Tree (C4.5), OneR and Naïve Bayes were compared on their classification performances. Results show that Decision Tree (C4.5) algorithm is the best algorithm with 95.61% of accurate prediction, Precision (0.957), Recall (0.999), F-measure (0.978) and RMSE (0.093).

In Step 2, Association Rules Mining by Apriori algorithm was employed to explore positive association relationships with experts class such as Education level, Faculty graduated, Position, Division, Department, Section and Expert level. Results are as follows. First, if staff position is technician, the education level is lower than bachelor's degree. Second, the attributes include Division, Department, Section and Expert level can be used to identify classes of knowledge workers. Third, working on various related tasks will increase skills of knowledge workers. Finally, results from this study will be useful for developing a knowledge map. It involves locating important knowledge in the organization, understands relationships of knowledge components and increases the performance of knowledge management in organization.

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