

University of Macau

Abstract

Vocabulary and Document Editing Systems for Integrated
Textile E-Marketplace

by Zhuo Hu

Thesis Supervisor: Assistant Professor, Jingzhi Guo
Master of E-Commerce Technology

A textile electronic marketplace is highly fragmented and participates in both vertically and horizontally integrated activities [6]. It brings together raw material, fiber, yarn, fabric, dyeing, and garment e-marketplace to facilitate ordering, communication flow and negotiation. They have a more specific property of interdependence between every levels of textile e-marketplace. The property implies a semantic interoperability problem in textile information exchange between the leveled e-marketplaces. To solve this problem, this thesis has proposed a novel common textile vocabulary and document framework (TexVDF) composed of common vocabulary and document template editor in a collaborative network to enable cross-domain level business information sharing and business document exchange in a semantically consistent way. The approach to this framework is motivated through presenting some real-world examples of business inquiries with product specifications. By these examples, two particular problems are detected on how to achieve semantic commonality between cross-domain level business vocabularies for textile e-marketplace mediators and how to allow specificity of cross-domain level common business document templates for local textile e-marketplace mediators yet still maintaining semantic consistency. This thesis resolves the first problem by introducing a P2P collaborative textile concept mapping model. Particularly, it applies to a common vocabulary editor to create common vocabulary for maintaining semantic consistency between cross-domain of textile e-marketplace. The second problem is resolved by textile business document template model to specifying

business document templates in a domain-specific level but still being able to utilize the common document templates prepared in advance. Particularly, it applies to a document templates editor to design document template conveniently. Concept transformer is designed to provide exchange service for users between heterogeneous and distributed textile industry to exchange document automatic and accurate. They further implemented and has been demonstrated in a prototype, of which the efficiency and robustness of the approach has been proved by experiments.