B2B middleware for managing process-aware eCommunities

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Abstract

Availability of open network and the rise of service-oriented architectures have created an environment where collaboration between enterprise ICT systems becomes technically plausible. The current challenges on collaboration management focus on ensuring the semantics and pragmatics of collaborations. Especially interesting is to capture the inter-enterprise business processes in such a way that autonomous computing systems can control and manage collaborations of that form.

We propose to model business networks (i.e., virtual enterprises, federations of autonomous enterprise systems) as eCommunities that are controlled at operational time by federation contracts. A federation contract essentially uses a set of business process models for controlling the membership and the behaviour of members within the eCommunity. The collaborating services from each enterprise are aware of the business process model used between them, but do not implement the control of it. Instead, the control is left for B2B middleware services. These middleware services use metalevel protocols for controlling the eCommunity structure and state, including reports of contract breaches.

This paper describes the B2B middleware architecture, and explains how new, global infrastructure services can be seen to change B2B collaboration into a more evolvable, controllable and manageable direction.

Computing Reviews (1998) Categories and Subject Descriptors:
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D.2.12 Interoperability
H.5.3 Group and Organizational Interfaces

General Terms:

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