

Abstract: The management and coordination of business process collaboration experiences changes because of globalization, specialization, and innovation. Service-oriented computing (SOC) is a means towards business-process automation and recently, many industry standards emerged to become part of the service-oriented architecture (SOA) stack. In a globalized world, organizations face new challenges for setting up and carrying out collaborations in semi-automating ecosystems for business services. A need emerges for service Hubs that not only store service offers and requests together with their issuing organizations and assigned owners, but that also allow an evaluation of trust and reputation in an anonymized electronic service marketplace. In this paper, we explore the features of a semi-automating ecosystem in which business processes are expressed as services and where Hubs are essential for bringing together service offers and requests. The presented Hub architecture is designed so that business managers benefit from an interface that borrows concepts of social-networking sites while the complex computing machinery for matching service offers and requests remains hidden from the user. The partial implementation of service-Hub components demonstrate the feasibility of our approach.

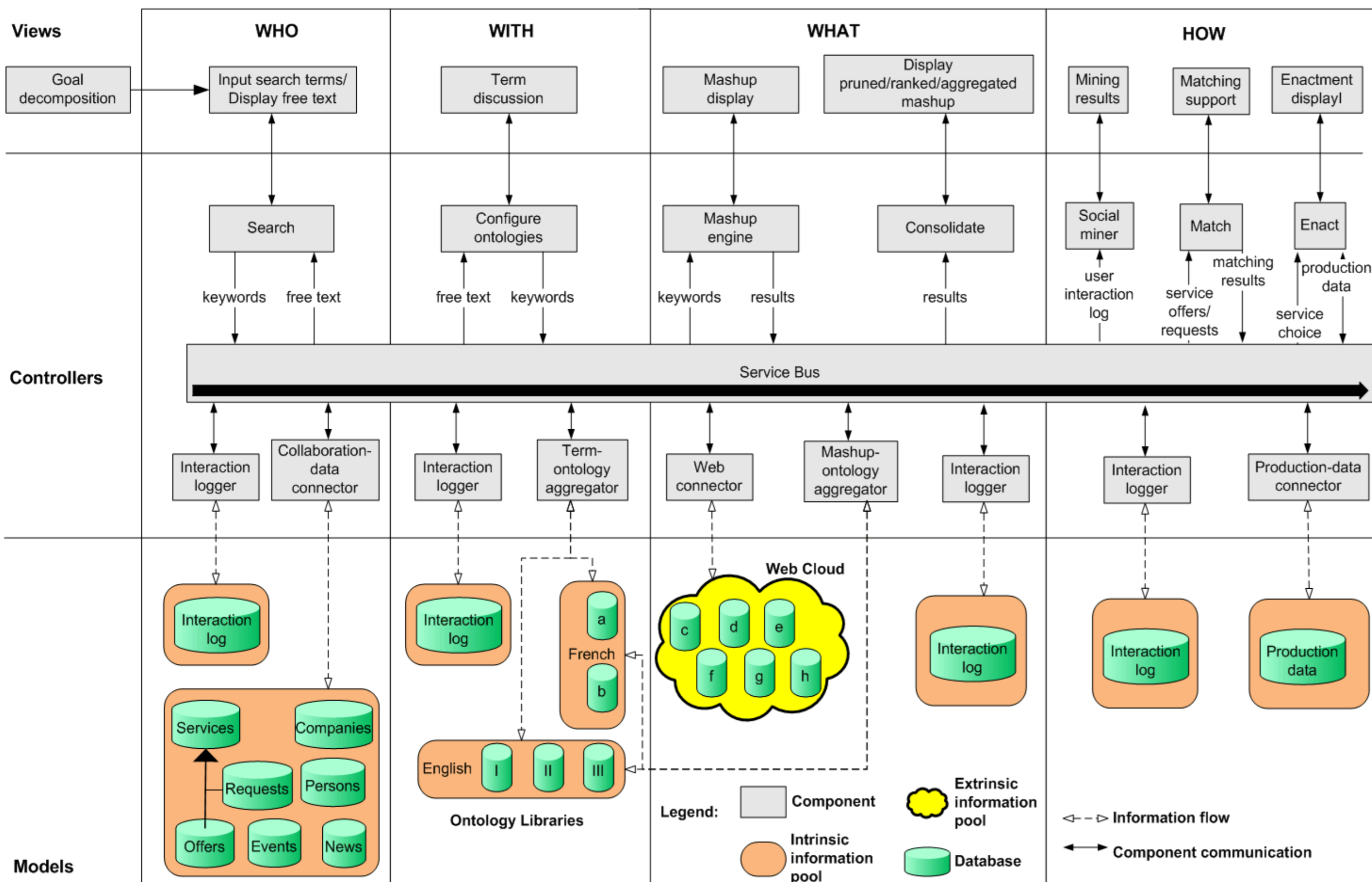
A Hub Architecture for Service Ecosystems:

Towards Business-to-Business Automation with an Ontology-Enabled Collaboration Platform

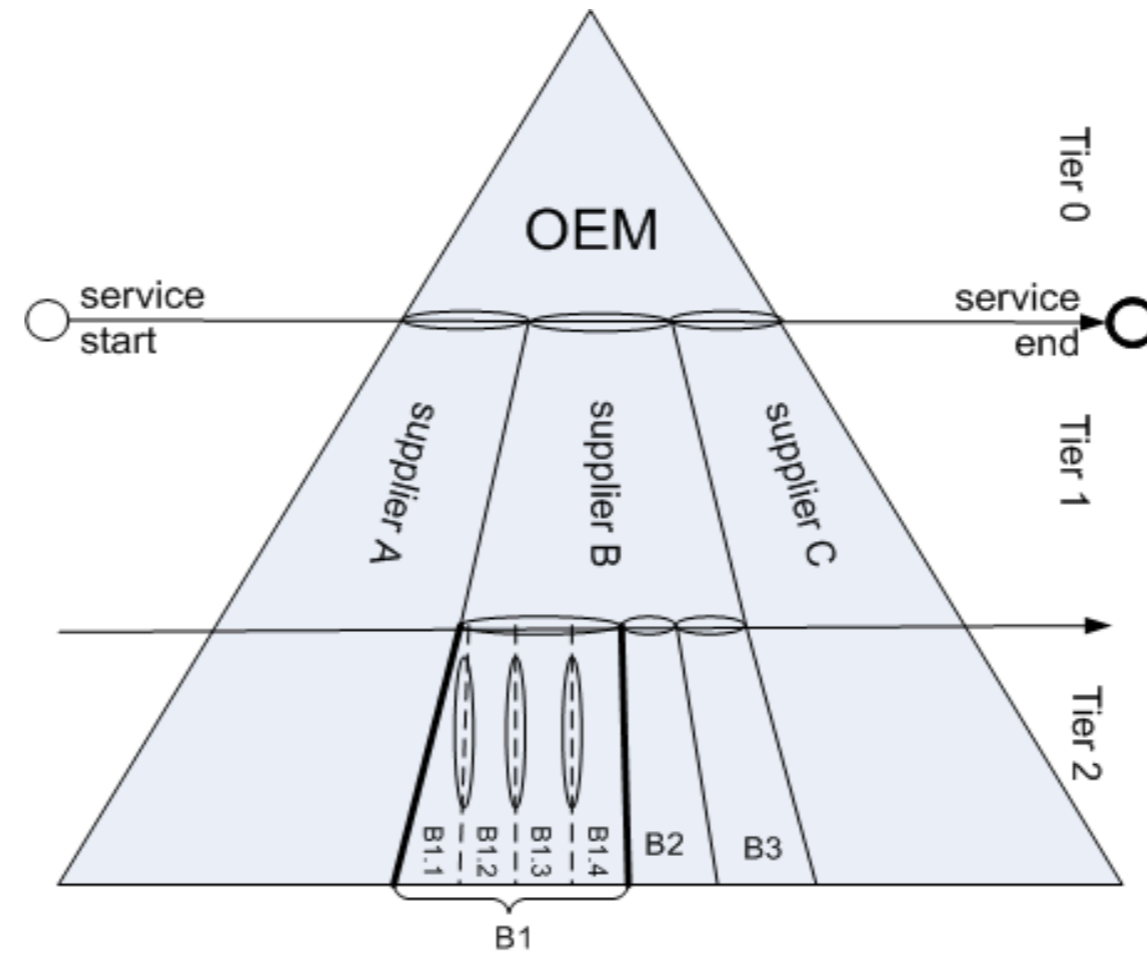
A. Norta

3) BpaaS-HUB architecture

We follow design principles, styles and patterns. The conceptual BpaaS-HUB architecture utilizes the principles of separation of concern, it follows a layer style, employs a pipes-and-filters pattern and pattern-based components for abstracting data repositories.



1) Inter-organizational B2B collaboration



- Client/Server integration:** top-down relationship where one or many service providers are integrated in the inhouse business process of a service consumer
- P2P integration:** several smaller service providers in a cluster form a bigger service for client/server integration

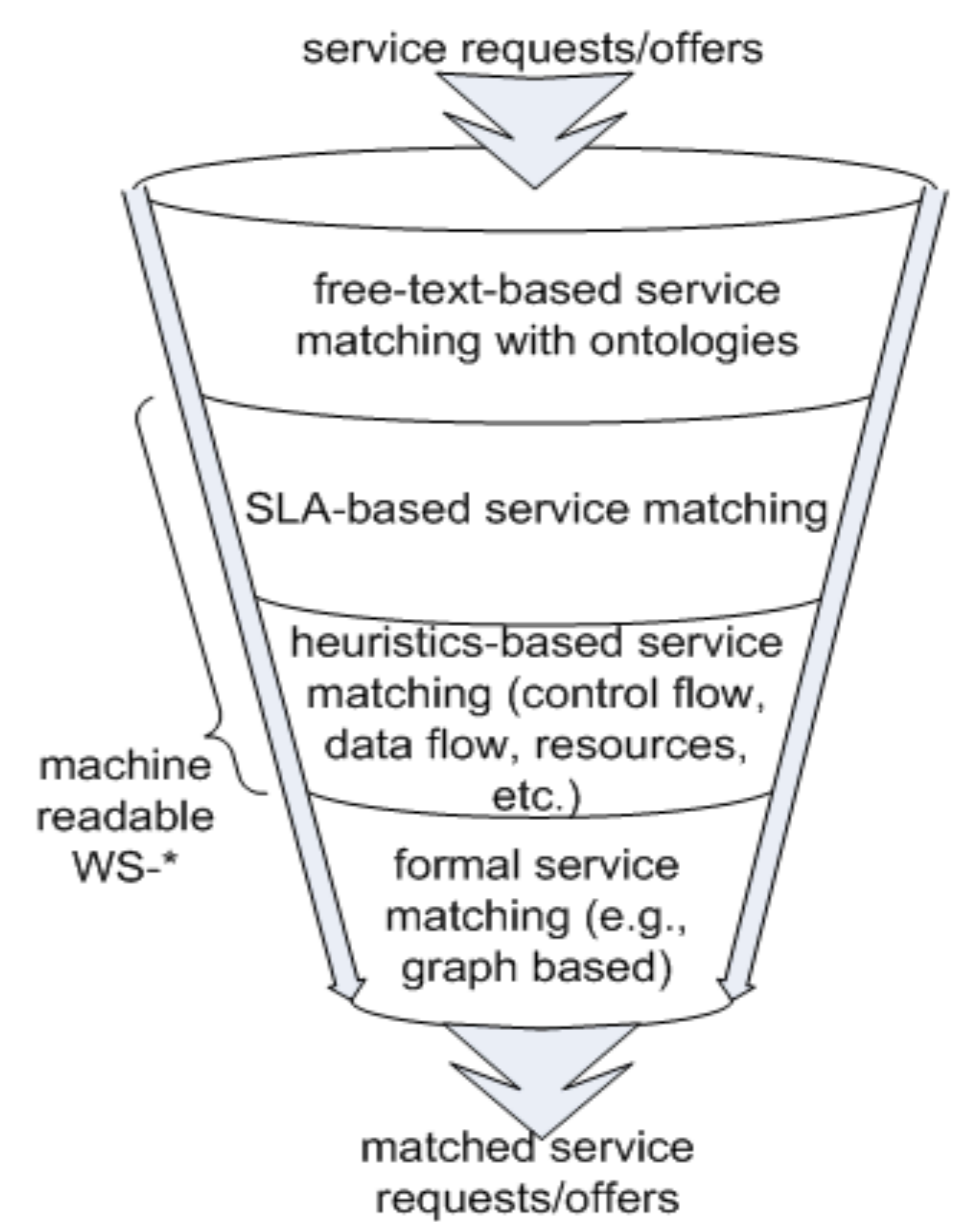
→ Need for an HUB for business processes as a service (BPaaS) as part of a service ecosystem

2) BPaaS-HUB requirements

1. A BPaaS-Hub must allow laymen who have no or little SOC knowledge to engage in service discovery and matching.
2. Since the Hub is part of an anonymized service ecosystem, users must be able to check the trustworthiness and reputation of service offers and requests.
3. The Hub must support resolving ambiguities in the human-and machine readable service representations.
4. The Hub must support feasible service matching, i.e., we assume pragmatic fuzzy matching as explained above.
5. The user interaction with the Hub must be logged for extracting business intelligence.

Separation of concern: WHO, WITH, WHAT, HOW
Layer style: views, controllers, models
Pipes-and-filters pattern: service bus enforced
Abstracting-data-repository style: for connecting knowledge bases to service bus

4) BpaaS matching



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