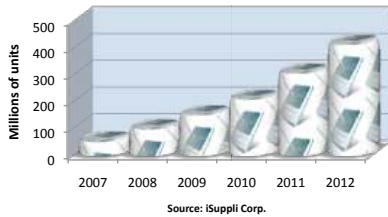


A Goal-Based Framework for Semantic Service Provisioning

Introduction

- Increasing number of (mobile) computing devices and sensors.
- Increasing number of available services.
- Increasing complexity of services interfaces and processes.

Mobile Internet Devices



Goal

Domain: Semantic Service-Oriented Computing and Pervasive Computing.

Goal: Develop methods and tools to foster service provisioning for non-technical users in pervasive computing environments.

Projects: IST Amigo (2006-2008), Freeband A-Muse (2006-2008).

PhD Associate: Luiz Olavo Bonino da Silva Santos.

Supervisors: Prof. Dr. Mehmet Akşit, Dr. Luís Ferreira Pires, Dr. ir. Marten van Sinderen.

Problems

Functionality request: Non-technical users are not always capable of formulating their functionality requests in technical terms. Intuitively appealing (more abstract) formulations should be possible.

Reduced user interaction: Users should be able to have as few interactions as possible with the service provisioning platform in order to get their requested functionality.

Semantic interoperability: Functionality provided by different parties and using different conceptual models should be recognized, and the underlying system should be able to fulfill users' requests.

Our Approach

A framework for dynamic service discovery and composition based on goals:

- Allows users to request for **services** by expressing their **goals**.
- Based on users' **goals**, a supporting platform **discovers** and/or **composes services** to fulfill these goals.
- The inputs required by the services are supplied by the **context-aware** components of the supporting platform.
- The framework is based on a set of upper-level, domain and task **ontologies**.

Our Solution

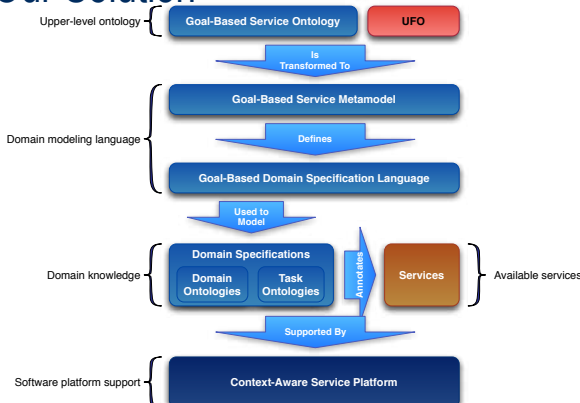


Fig. 1 – The Goal-Based Service Framework

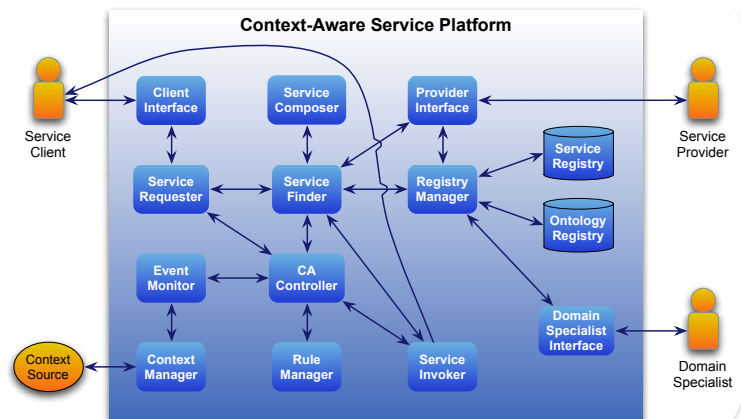


Fig. 2 – The Context-Aware Service Platform