

Strategic Business Relevance:

Web 2.0 allows web users greater control over their information online and of the services they use. To enable this level of control in the mobile sector, we are investigating user-based composition of services. Composition of services allows users to tailor services to meet their needs, and provide them with added value.

Consumers Composing Services

Consumers become producers

Consumer-based Service Composition sees consumers working with service providers and other consumers to create the service that they really want, rather than the one that the service provider wants to provide.

What's in it for consumers?

Consumers can tailor services to meet their needs
They get the service that they actually want

They can share their compositions with other consumers
Services could be sold to other consumers – revenue opportunities

Why should you care?

Control
Users want it and now they can get it

Consumers will move to platforms where they have control
The Android Market is catching up with Apple App Store fast!

More innovation, faster
Services don't have to be built from the ground up

Greater consumer reach
Geographic boundaries broken down

What are the challenges?

Representing services to users
Need to be able to differentiate between services – more than functionally

Representing (the process of) service composition to users
Composition needs to be intuitive, easy, fun to use

Creating a platform where services are created, composed, shared
Users need a medium through which they can find, use and compose services

Core Research: User Interactions for Breakthrough Services

This research addresses the ways in which users interact with portable and mobile devices (and other devices in their physical and logical environment) in order to enable new types of personalised and highly contextualised services.

Service composition allows consumers to combine discovered services in order to create new, composite services.

Other platform users can then take this service and compose it further. Composition is iterative.

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Composition of Services

Definitions

A **service** is non-physical equivalent of an economic good

Three types of services:

Physical service – A service which requires no end-user interaction with software

Software service – A service which does not run on an end-user perceivable hardware element

Hybrid services – A service which contains both hardware and software elements

These services can be discovered within the user's environment and then composed to provide a service with greater value than its component parts.

Composable services are services which can be composed with others in order to create another, more complex service.

Composite services are services which can be decomposed into simpler services which can be re-used.

Atomic services are services which cannot be decomposed further.

Advanced service composition – taking a series of services, and creating a new composite service available to other users. This composite service could be sold in a service market/store. This is aimed at users with a level of technical knowledge.

Simple service composition - users "tweak" services to better fit their needs. e.g., swapping in one component service for another. It also allows run-time selection of input/output services. e.g., selecting a TV in the environment as an output to stream a football match.

Stakeholders

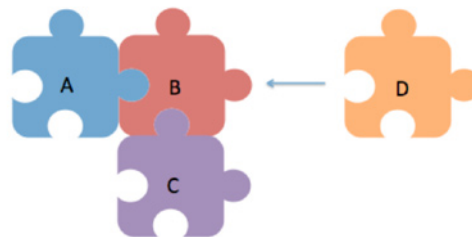
Very little has been done to understand the role of non-business consumers in service composition.

The stakeholders of service composition can be defined as two roles, based upon the tasks that they fulfil:

Service Producers are involved in the creation of atomic services, and performing advanced service composition.

Service Consumers are involved in simple service composition and service consumption/use.

Stakeholders can perform either of these roles, allowing consumers to become producers and producers to become consumers.



Composing services both atomic (D) and composite (ABC)

Key Points

- Non-technical users aren't familiar with services, so we need to find a way to represent services that makes them easy to understand and compelling to both use and compose.
- Service representations need to show consumers what the service does, and allow them to determine if the service will be valuable to them
- The process of service composition needs to be represented in a manner that users of various technical skill levels can understand.
- Composed services need to be described in the same way as atomic ones – how can we combine descriptions of services, and qualities of service of the component services into a final description and quality of the composed service.