LOMS
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Creating smart services wherever you want

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Model-based approach cuts cost of complex user interfaces

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LOMS
(ITEA ~ 04012)
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Creating smart services wherever you want

The LOMS project has determined a roles model, methodology and service-oriented architecture (SOA) based service-creation architecture, based on a service templates paradigm, which makes it easy to create and launch tailored, local and smarter services. Sample services – and service templates – have been demonstrated to prove the concept for various device types and business models, and short-term exploitation opportunities have been identified.

Many network operators are keen to be more than plain bit-pipe providers. They would like to be able to offer a portfolio of so-called 'long tail' services, addressing the smaller service markets among their large customer bases and that they would like to manage and charge according to flexible models, while keeping their operational expenditure targets within justifiable limits.

At the same time, more and more businesses want to use Internet and Internet technologies to market their products and services, particularly to mobile users and via new channels like digital TV. However, designing and establishing more advanced web business that leverages underlying technology to a valuable extent requires specialised knowledge that is just not available in most organisations – especially small businesses, independent professionals and others keen to participate in the e-trend by offering their services to their local niche of customers. Such people generally lack the technical know-how to address these specific niches.

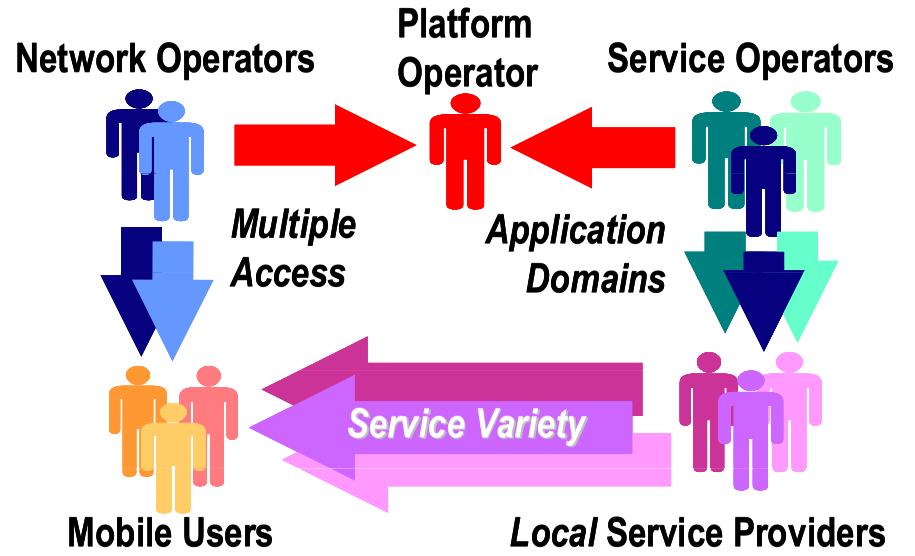
While various attempts have been made over the past few years to offer simplified programming environments, technical knowledge is still required. LOMS therefore set out to combine service creativity easily with rich, powerful features of a well-controlled service environment.
It has achieved this by removing the many barriers through the introduction of new intermediaries in the value chain. These consist of enabling services on service platforms and service operators offering layers of service templates for specific application domains that can be used with no technical knowledge. The service templates encapsulate the service components in a transparent manner to the service providers. As a result, local businesses can now easily launch smarter services through more channels.

AGILE SERVICE CREATION
The objective of LOMS was the establishment of agile service creation through partnerships and alliances while resolving the complex technical implications of such models as well as the service creation process itself.

This involves two key elements:
1. The notion of 'local' services tailored to the needs of a specific niche market, a specific local culture or communities, or a specific geographical area such as cities, streets, shopping centres or factory sites – such services would typically be location-based to a degree, and often use mobile devices; and
2. The idea of an ecosystem of such services, building on the popularity of the Internet, combining the benefits of mass creativity and mass involvement, with the enabling functions of existing telecommunications and media network deployments.

To populate such an ecosystem of local services, LOMS has introduced a number of intermediate value chain actors in the service-creation process:
- *Platform operators*, who provide the run-time platform and expose network-related enabling services through it, either related to network operators or not;
- *Service operators*, who add domain-specific knowledge into LOMS service templates for a specific market sector, possibly in multiple, abstracting layers; and
- *Service providers*, who drive the market by launching new services based on LOMS service templates, fast and easy, addressing the demand of their specific – local – market niche.

At the architectural level, LOMS has identified so called service templates as the way to provide the actors in the service-operator role with a means to encapsulate their domain or technological expertise for easy use directly by service providers, or by higher layer service operators.



LOMS Value Chain Roles Model

PREDEFINED SERVICE ORCHESTRATION
The LOMS service templates approach is built on general SOA principles but, unlike other approaches to easy service creation, the templates enable service operators to predefine the orchestration flow between underlying building blocks according to a software variability principle.

LOMS demonstrated this using the web-services business-process execution language WS-BPEL – as well as other languages – inside the templates. This gets transformed as part of each individual template application, using simple questionnaire answers by service providers as inputs before launching the provider's specific service.

As a result, service providers do not have to become involved in the basic design but can concentrate on the service business itself, while the service and platform operators define how exactly the service is operated, performing the operations business in a 'macro' view.

Moreover, this makes it possible to extend SOA principles across the entire service lifecycle, as each actor creating and operating a service template can make it self-contained concerning the data provisioning and code deployment it allows, supporting separation of concerns between the actors involved. Such service templates can also encapsulate logic for user subscription, as well as management by the service provider, for the actual service logic.

The LOMS approach was demonstrated in two different domains:
1. *Local news publishing* – a business to consumer application that involved map-related news items, as well as personalised TV community news. Readers could log on to their mobile phone or TV and access news feeds of direct local interest; and
2. *Machinery field service* – a business-to-business application that allowed automation of the field force network, combining electronic customer relationship management (eCRM) with specialised workflow control.

SERVICE CREATIVITY IN A CONTROLLED ENVIRONMENT
The LOMS project has shown that it is possible to combine service creativity with the rich features of a well-controlled service environment, hiding complexities to service operators and offering easy service creation and management to service providers. Guided by methodological guideline documents, clear value is offered to real-world commercial actors wanting to take up any of the LOMS value-chain model roles.

The concepts have opened a broad set of opportunities in concrete solutions of LOMS partners and their customers, in concrete commercial exploitations of parts of the framework, the enabling services or elaborated service template examples.

Some of the elements developed are already being exploited commercially. In Belgium, the LOMS approach makes it possible to offer niche digital TV services over an IPTV network, while in Germany, a newspaper in Stuttgart is already offering a map-based local news service in co-operation with an Internet mapping provider.

Example LOMS services on end user devices