

FRESCO

Foundational Research on
Service Composition



Services in Electronic
Business Scenarios

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OVERVIEW

- Introduction
- Expectations of the business user
- Scenarios
- Business Service Triangle
- Conclusion & next steps

Definition

- (e-)Service: *an e-service is any asset that is made available via the Internet to drive new revenue streams or create new efficiencies.*

The E-Service Vision

“In an e-services world, all things become revenue opportunities. Capital assets. Material assets. A key competency. Know-how. Experience. A world-class process.”

Carly Fiorina, HP President and CEO, October 2000.

The E-Service Vision (long)

"During the last five years conversations with customers about Internet technology have typically centered on making business process more efficient.

E-commerce was essentially about making the process of interacting and transacting with customers more efficient.

E-business was about making back-end systems and processes more efficient.

Most of today's e-business implementations are little more than automated extensions of traditional processes—hard-wired relationships and corporate partnerships forged to meet a common but predefined goal.

What if these same business process could be formed dynamically? Or what if they could be given a modular dexterity that would enable the creation of electronic marketplaces in which anyone and everyone could access and integrate services, on-the-fly, to accomplish a task or fill an order?

With e-services, you think of your business as a set of independent services—e-mail, accounting, inventory management, or HR—that you enlist and pay for when you need them, not as business functions with expensive application infrastructures that you must support and maintain.

With e-services, you can reach your customers wherever they are—even when they're on the move—because anything with a chip in it becomes a platform for the delivery of services.

In an e-services world, all things become revenue opportunities. Capital assets. Material assets. A key competency. Know-how. Experience. A world-class process. They all can be delivered as a service over the Net to generate new revenue.

And of course, in all of this, the real magic is that it all must happen reliably, securely, simply, across an infrastructure that's always on. That always works."

—Carly Fiorina, HP President and CEO, October 2000.

Introduction „Services in Electronic Business Scenarios”

- Three major subjects belong to e-services
 - automated negotiation
 - contract framework
 - dynamic composition
- Dynamic composition includes
 - service incompleteness
 - multi-party orchestration

Looking closer to dynamic composition from the business user's point of view

- Scenarios as collection of use cases (based on the experience with FreightMixer)
- Widely used and generalised formalisms
- Tools to meet the business user's expectations

Business User as the Target Audience

- Business users vs. technical users
- How hard is it to learn the model?
- Graphical tool
- High level abstraction
- Integration with existing business systems
- Business Process Management (BPM) as a well known paradigm
- Just Enterprise Application Integration (EAI) alone isn't generating any business values

Business users want...

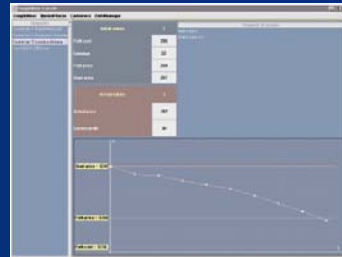
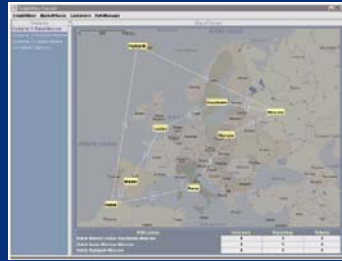
- First interviews with business users are showing us a general picture about the business user's requirements
 - Easy to learn/understand model, in line with existing business paradigms
 - Easy to learn/understand tool
 - Seamless integration into existing business systems
 - Wide variety of extending modules/libraries to choose from
 - Reuse models and rules (abstraction of existing work into one item)
 - Simulation of model
 - Export into PowerPoint
 - Exchange model with colleagues and consultants
 - Administration/Measurement/Optimisation

Scenarios

- "The electronic wedding planner"
- Transport
- Telecommunication
- Financial
- Healthcare

Transport - FreightMixer.com

- FreightMixer is our scenario in context of the transport industry first used by HP.
- Distinctive features of FreightMixer are rich service offer and efficient cost structure.



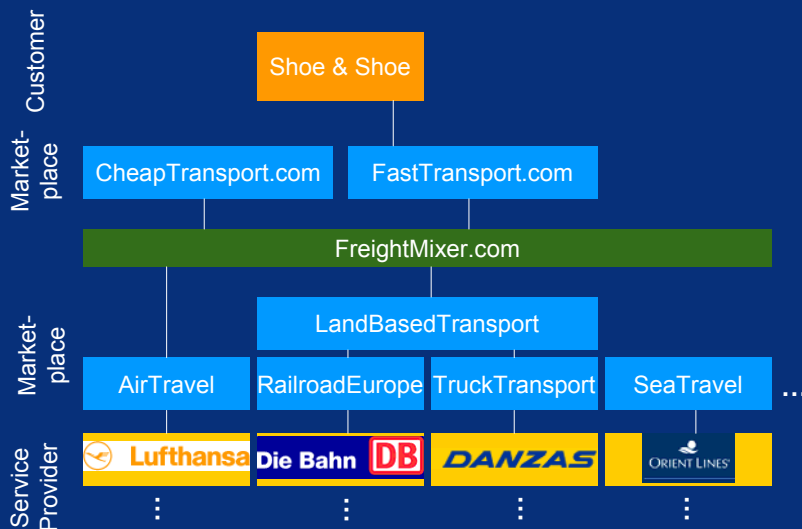
Transport - FreightMixer.com (2)

- From a service-offer perspective, FreightMixer maintains a wide portfolio of **predefined services**. For special customers, both **ad-hoc customisation** of existing services and **on-demand definition** of new services are also supported. The main constraint for new services is that the content must stay within the scope of the domain knowledge of FreightMixer.
- For example, the transport of particular goods may be arranged in a way that half of the goods follows one route and the other half follows a different route. Having the goods subjected to processing (e.g. testing, labelling) might instead be outside the scope of FreightMixer.

Transport - FreightMixer.com (3)

- In terms of execution capabilities, the infrastructure of FreightMixer is kept to a minimum. The business model of FreightMixer is based on dynamic composition of services and aggregation of service providers.
- The FRESCO framework provides to FreightMixer the methodology and conceptual tools required for modelling composite service-oriented solutions. FreightMixer adds the business knowledge of the transport industry. The framework also includes service modelling tools and core components of the execution infrastructure. FreightMixer adds a selection of components that complete the execution capabilities of the system.

FreightMixer.com interaction matrix



Telecommunication

- Main problem is the reduction of the latency of the provisioning solution, an fully integrated internal system plus maybe external integration to the local services providers is needed.
- New wireless oriented business models include cutting edge technology like “location based service” or “i-mode”, where the service provider isn’t the content provider while the user’s profiles, preferences and context must be taken into account.
- Next generation handsets will provide the same functionality as your credit card – a natural integration into financial services is a prerequisite.

Banking/Financial

- Recent models need to tie all services and make them seamlessly available to the clients through the financial management systems.
- We expect different service levels, from pure money focussed services like short term loan, to more complex ones like foreign stock trading.

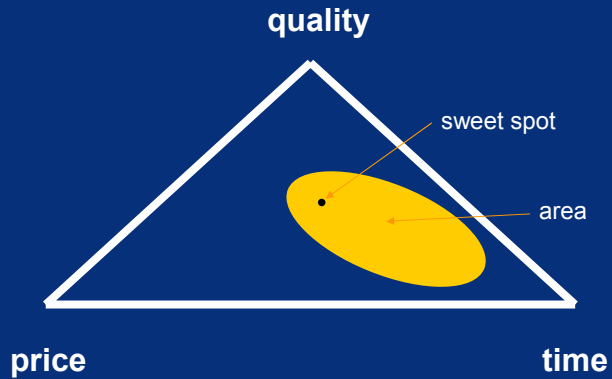
Healthcare

- Healthcare will bring a new dimension to e-services due the natural involvement of three parties by default: patient, provider and insurance.
- Including the wide variety of legal implications, technology and formats a health record isn't easy to maintain.
- With the discussion of "prescriptions over the Internet" the discussion was also started in Germany.

Common ground & tools

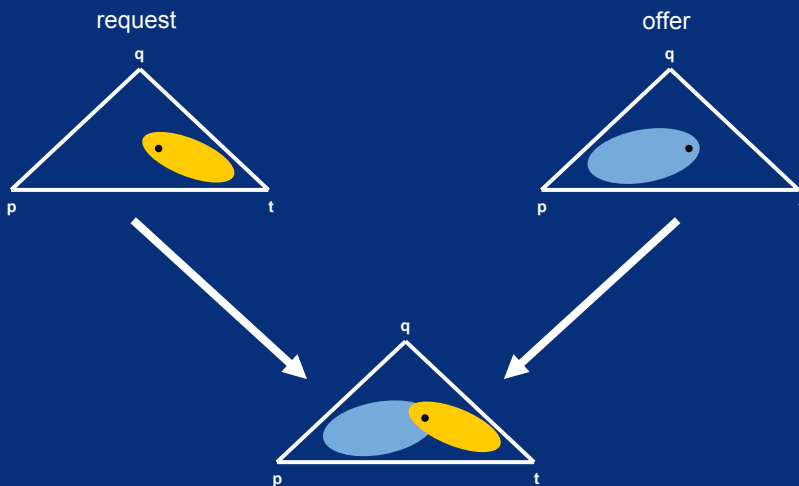
- As in the initial version of FreightMixer, there are two common elements for all the scenarios. On the conceptual level, the focus is on services and service composition. On the practical level, a business-level interface that shows the various aspects of customer interaction and service delivery is used as main communication instrument.
- A domain unspecific syntax must be used in order to provide efficiency and support for large scale business models which are touching more than one business environment.
- A modelling tool must be easy to use, include support for real time data, both test and real-world, and optimisation functionality to span the full lifecycle.

Business Service Triangle Definition



You can only optimize for two, not for all.

Business Service Triangle Example



Service lifecycle

- Build
 - Partner Registration
 - Business Documents
 - Processing Rules
- Manage
 - Graphical Analysis
 - Operational Excellence
 - Transactional Health
- Analyse
 - Graphical View
 - Business Visibility
 - B2B ROI Analysis

Preliminary Conclusions

- Business users are used to business level information to support their business tasks
- Scenarios and use cases help us to fill the gap between business and technical people to gain a common understanding
- Detailed use cases can act as the basis for technical requirements and as test scenarios
- A domain unspecific syntax must be used in order to provide efficiency and support for large scale business models which are touching more than one business environment
- A modelling tool must be easy to use, include support for real time data, both test and real-world, and optimisation functionality to span the full lifecycle
- ...

suggested reading

- <http://www-uk.hpl.hp.com/esm/>

Q&A