



# **On the Interaction between Business Models and Software Architecture in Electronic Commerce**



## **How can E-commerce business models profit from designing a software architecture?**



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## **Agenda**



**The development of an e-commerce  
application: a cyclic approach**



**An example application: the Yellow Pages:**

**the initial business model and  
architecture**



**evaluation on committing a fraud**

**solutions to avoid fraud**



**changes in business model and  
architecture**

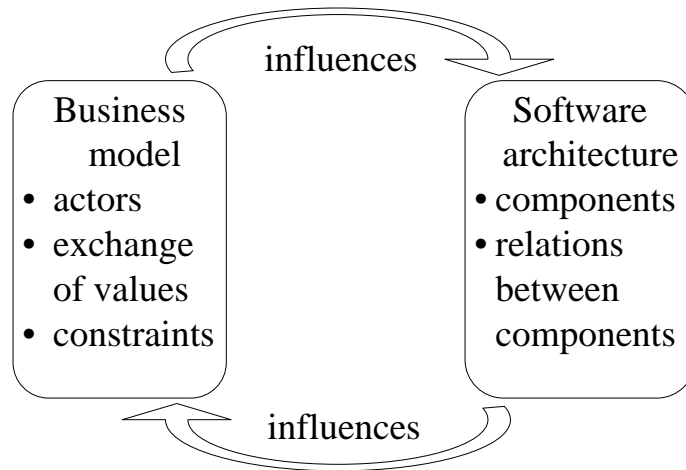
**re-evaluation of the architecture**

**Conclusions**



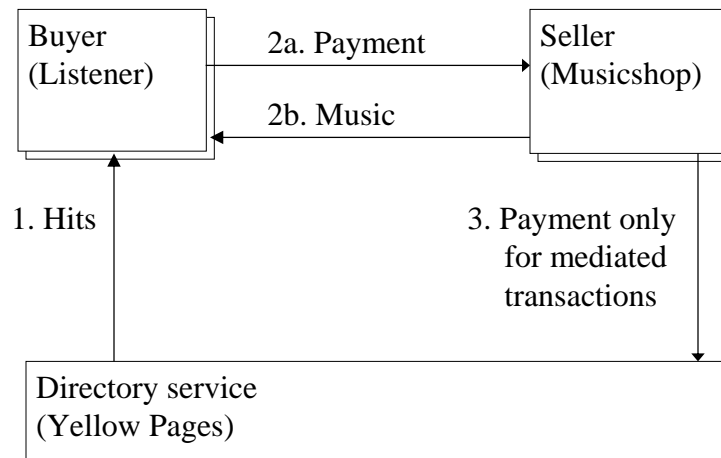
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## Developing an e-commerce application: a cyclic approach



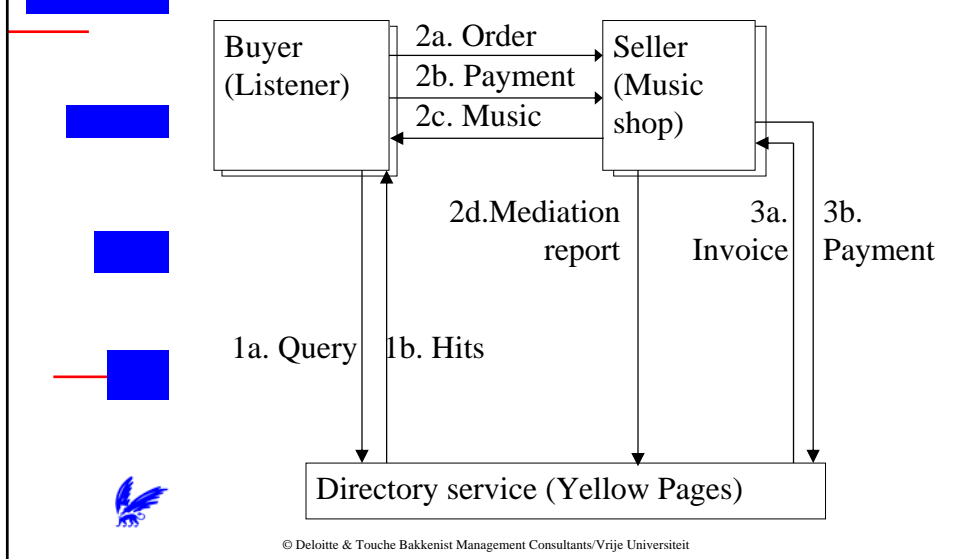
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## A business model for a directory service



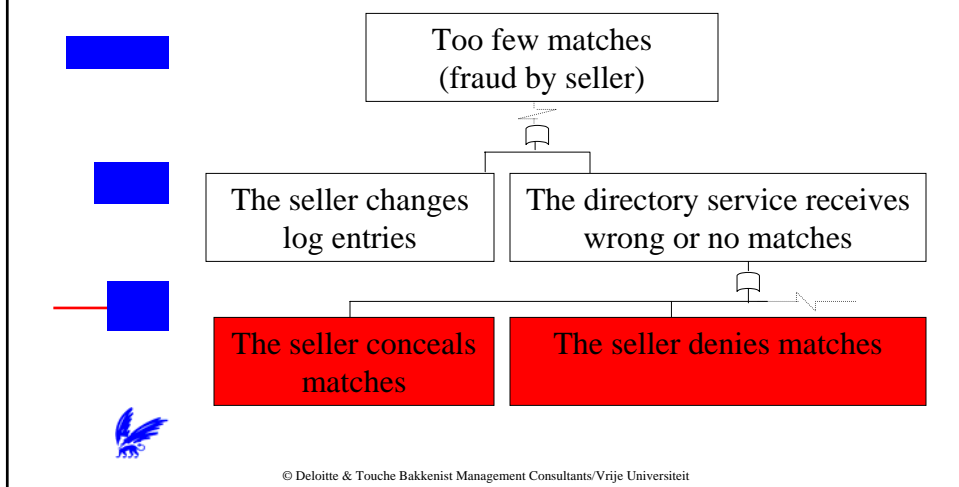
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## A basic architecture for a directory service



## Is committing a fraud possible -1?

Construct a *fraud tree* (based on the *fault tree*)



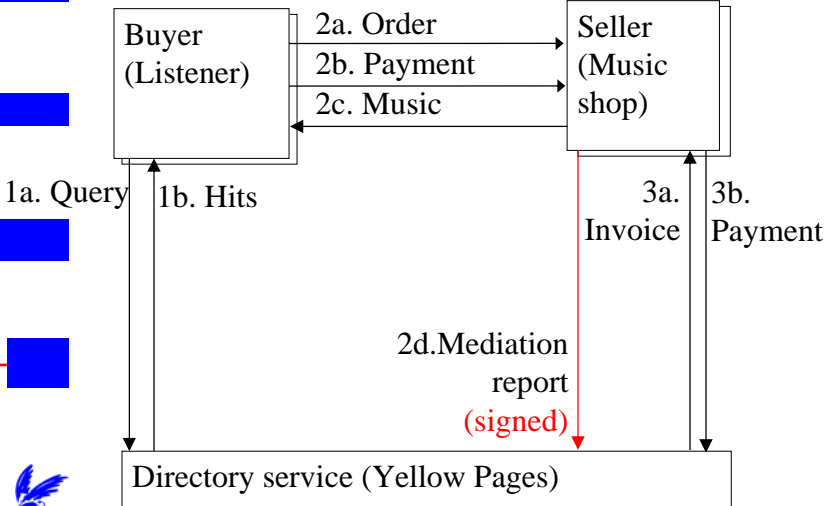
# Possible solutions

**Architectural change:**  
Avoid denial of mediation reports by sellers signing a report with an electronic signature

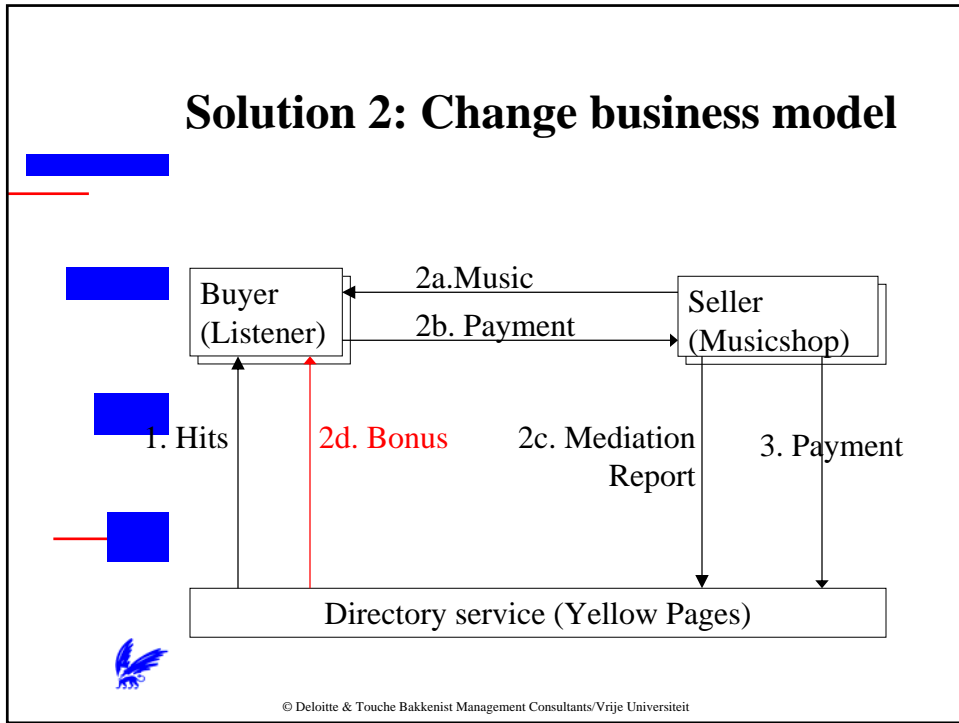
**Business model change:**  
Avoid concealment of mediation reports introducing a bonus system



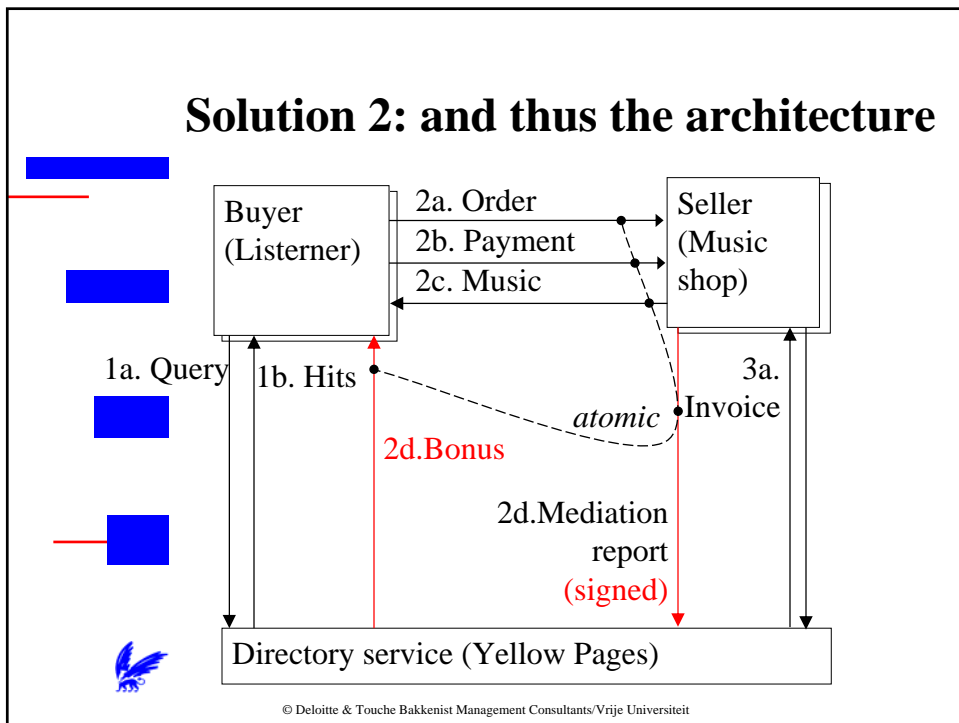
# Solution 1: Change architecture



## Solution 2: Change business model



## Solution 2: and thus the architecture



## Re-assess the new architecture

Now, a customer can be a party in committing a fraud also:

the seller gives the customer money rather than bonus points

Business wise, this will not happen because:

the customer wants to collect points from multiple sellers

There is no architectural measure necessary to prevent commitment of such a fraud



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## Conclusions

When you develop e-commerce applications be careful to:

Design a *software architecture* to assess the technical feasibility of a business model;

Design an electronic commerce application in *cyclic* processes of business model design and software architecture design



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