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# **Chapter V III**

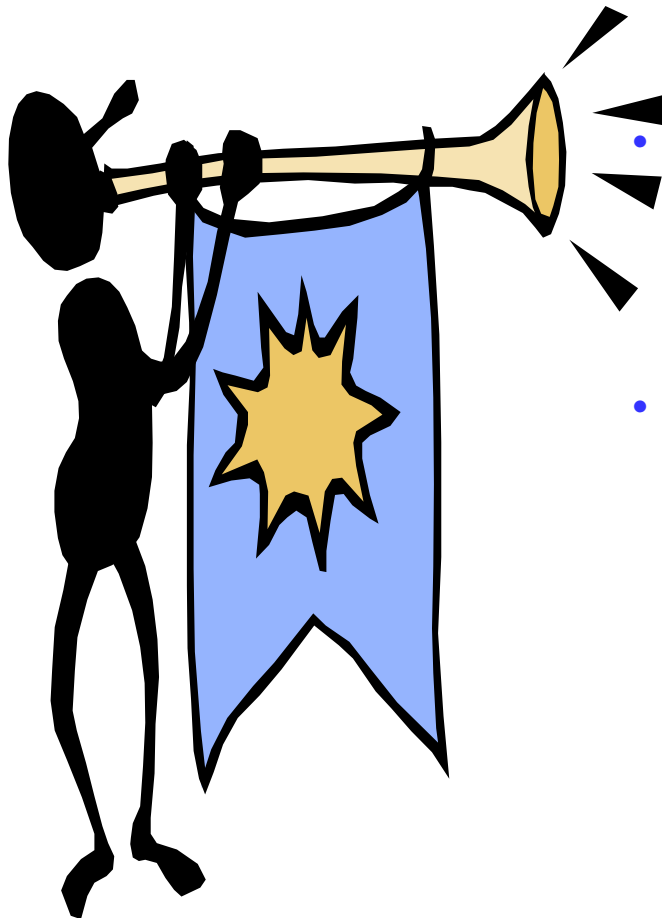
## **Web Services as a**

### **Value Added Service Technology**

#### **(Part II)**



## Outline



- Web services for value added service engineering in NGN
- Digital imagery



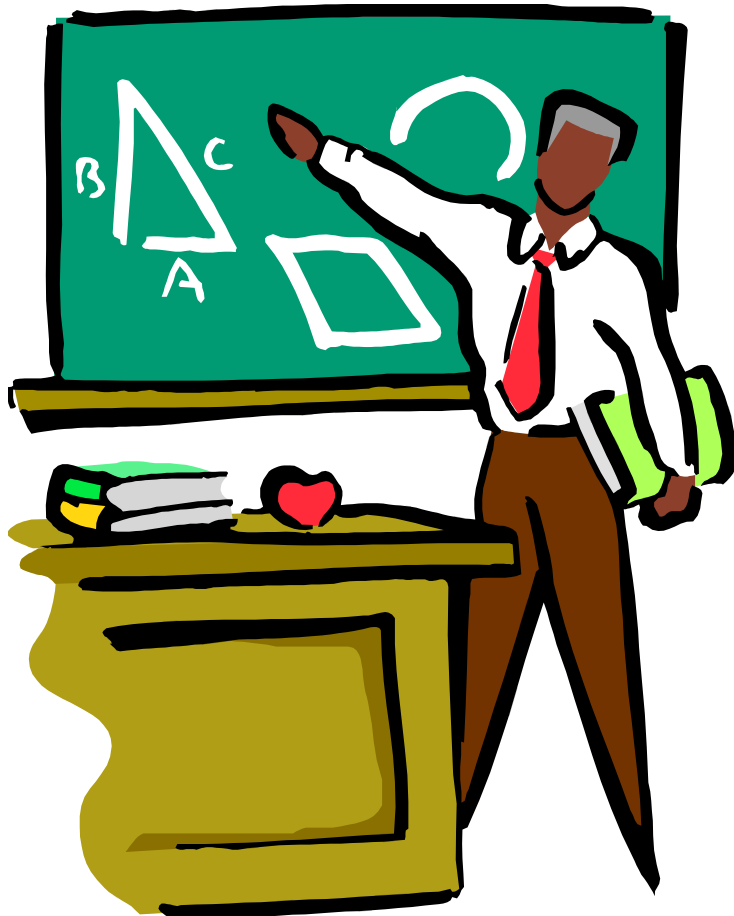
## Applying Web services to value added service engineering in NGN



1. Parlay-X
2. OMA Deployment patterns



## Parlay-X ...



1. Introduction
2. Architecture
3. The services



# Introduction

## 1. Specifications available in their third version

- White paper + actual specifications

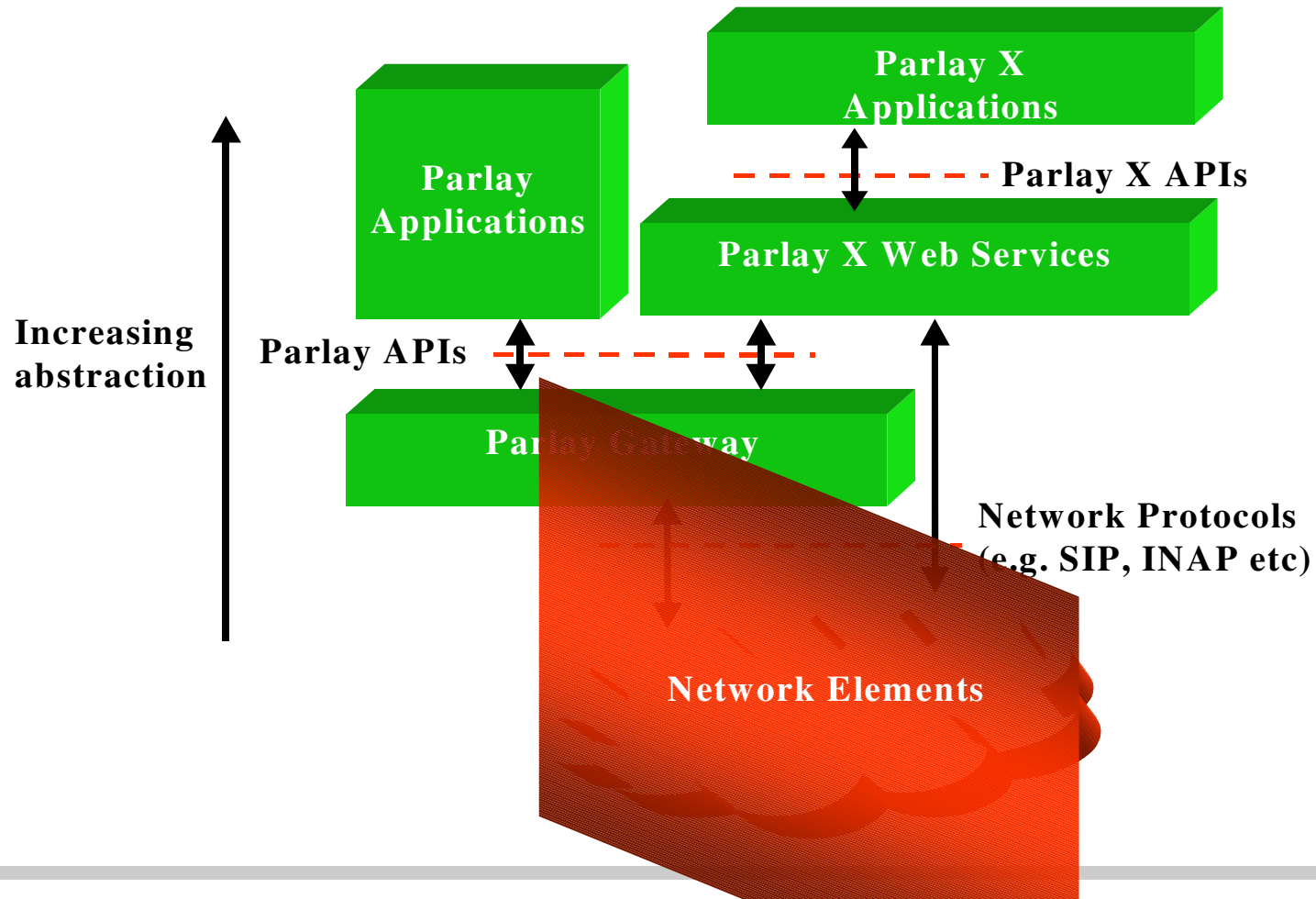
## 2. Application interfaces

- Aim at covering all telecommunication capabilities
  - Stand alone capabilities (e.g. presence, call control)
  - Combined capabilities (presence + call control)

## 3. Use the reference Web service principles (e.g. coarse grained) technologies (e.g. WSDL)



# Architecture





## The services

1. Call control
2. Messaging
  - SMS
  - MMS
3. Payment (e.g. volume charging)
4. Account management (e.g. account credit expiration date query)
5. User status (online / offline)
6. Terminal location



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## Parlay-X Call Control ...

Make a call

Get call information

End call

Cancel call request

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## Parlay-X Call Control ...

Handle busy

Handle Not reachable

Handle No answer

Handle off Hook

▪



## Parlay-X Conferencing Basics...

Allow the creation of a multimedia conference call and the dynamic management of:

- Conference
- Participants
- Media

▪



## Parlay-X Conferencing Basics...

### Service model entities

- Conference
  - “Context / virtual room” to which participants can be added
- Participants
  - Parties involved in the conference
- Media
  - audio/video/chat

▪



## Parlay-X Conferencing Basics...

- Conference
  - “Context / virtual room” to which participants can be added
- Participants
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## Parlay-X Conferencing Basics...

Create conference

- Create a multimedia conference with initially no participant

GetConference Info

- Information on status (e.g. active, terminated)

EndConference

Several possibilities

Maximum duration has expired

All participants have left

▪



## Parlay-X Conferencing Basics...

inviteParticipant

- Add a new participant to the conference

disconnectParticipant

- Disconnects the participant

addMediaForParticipant

Executed on a single participant

- Add a media stream to the media set used by participant

▪



## Parlay-X Conferencing Basics...

deleteMediaForParticipant  
disconnectParticipant  
getParticipantInfo



## Parlay-X MMS ...

Send Message

Get Message Delivery Status

Get Received messages

Get messages URIs

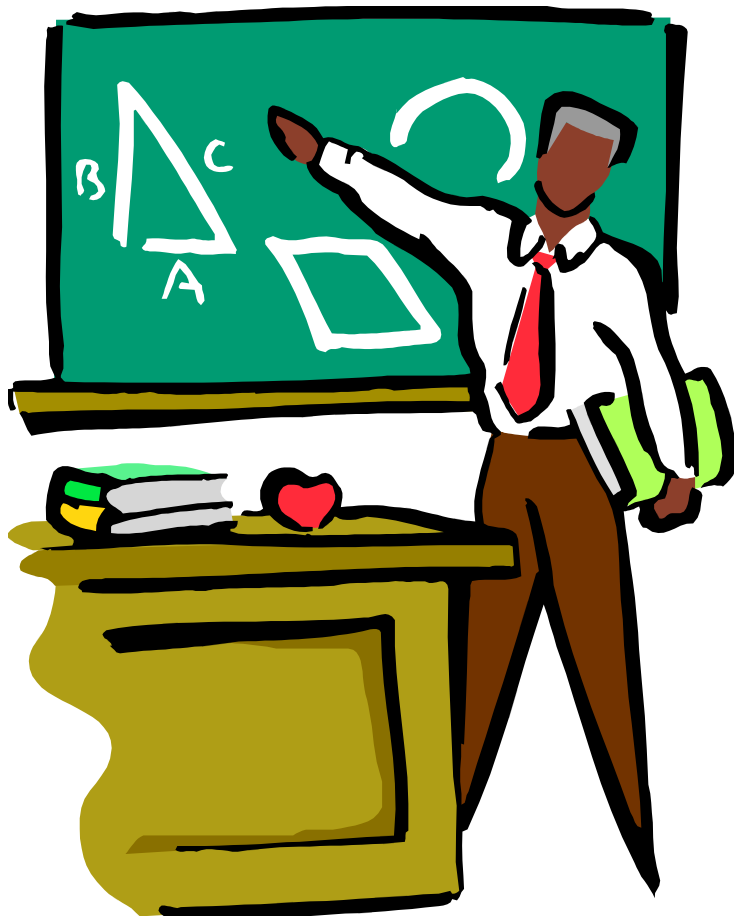
Notify message reception

▪





# OMA ...



1. Introduction
2. Architecture (ARCH)
3. OMA Web Service Enabler (OWSER)



# Introduction

## OMA

- Industry association created in 2002
- Focus on mobile services
- Aims at:
  - Consolidating standards for wireless services (e.g. 3GPP/PP2, IETF, W3C)
  - Producing new standards if needed-
  - Tackling the two issues



# Architecture

Aim at providing a general architecture for mobile services

- Requirements
- Principles
- Functional entities
- Common framework

- 
- Service adaptability



# Principles

- Signalling protocol neutrality and independence from programming languages, operating systems and so on
- Leverage existing standards
- Interoperability, scalability
- Service adaptability
- Consistency with Internet models



## OMA Web service enabler (OWSER)

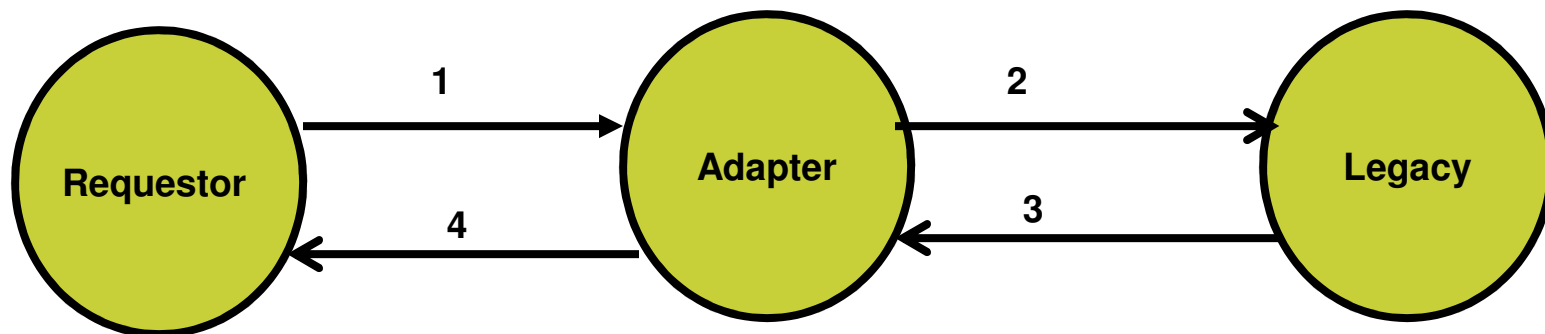
**Aim at providing solutions to common problems faced by designers when using Web services in an OMA environment**

- Practical deployment patterns
- Common functions (e.g. charging, security)
- Network Identity specifications (I.e. specific aspects of security – Based on Liberty alliance specifications)
- WSDL Style guidelines
- Test requirements



# Examples of deployment patterns

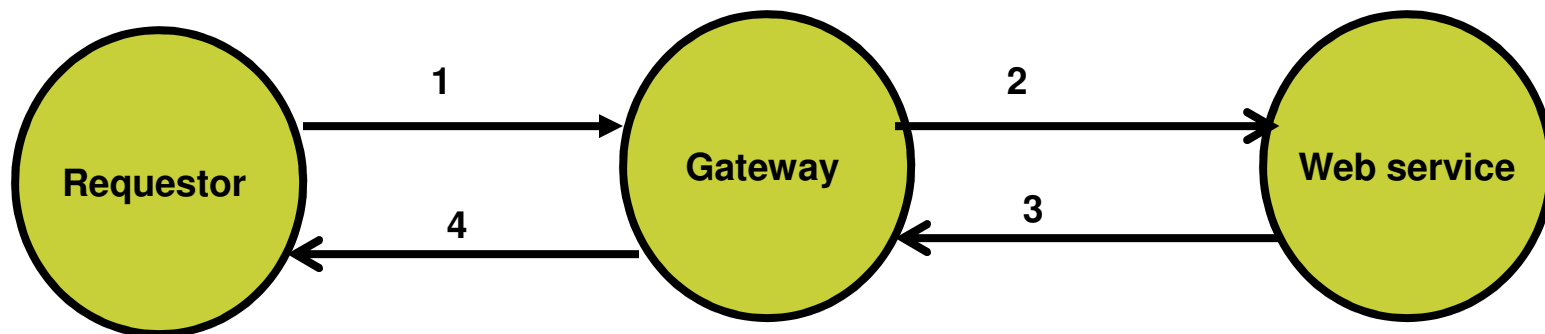
## The adapter pattern





# Examples of deployment patterns

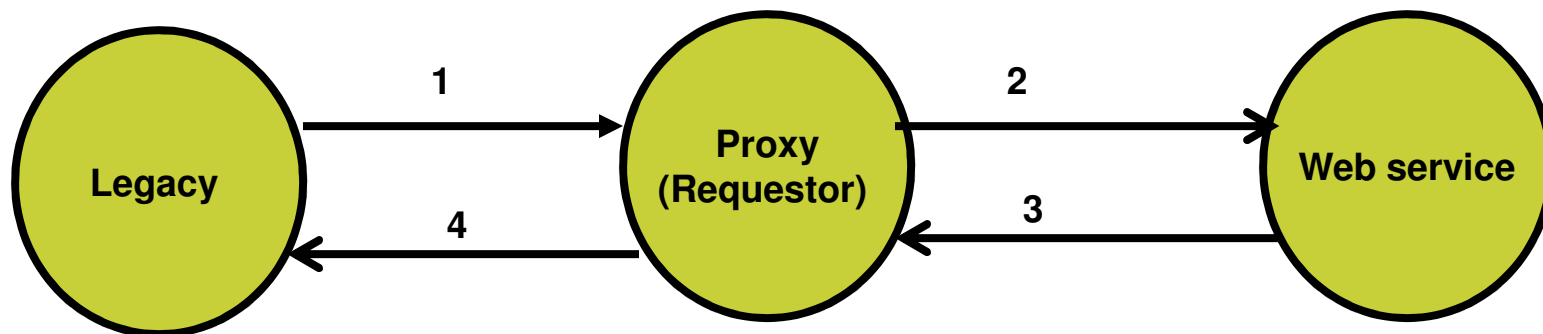
## The gateway pattern





## Examples of deployment patterns

### The proxy pattern

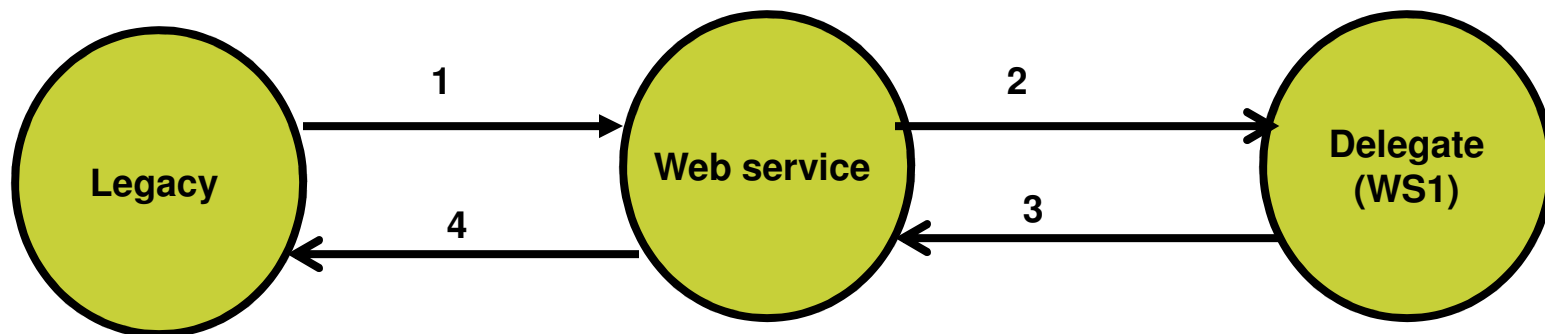






# Examples of deployment patterns

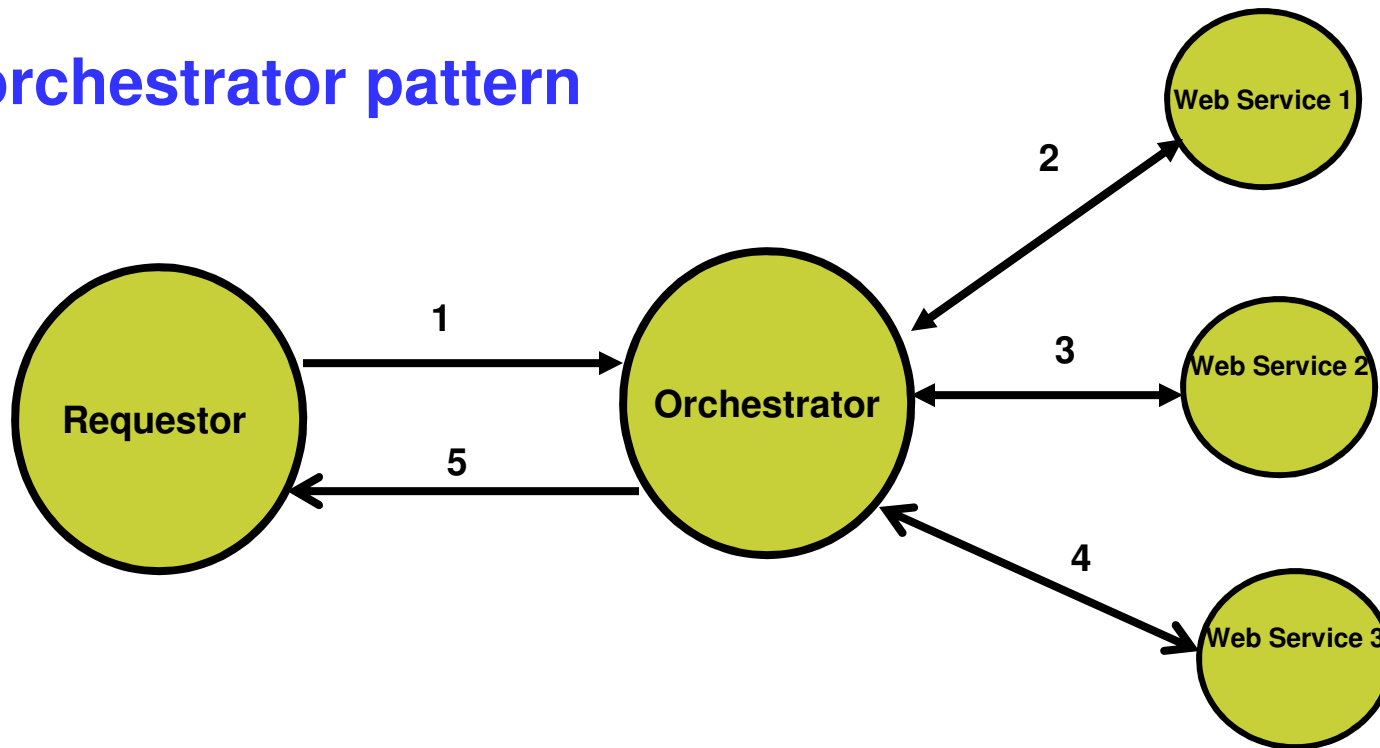
## The delegate pattern





# Examples of deployment patterns

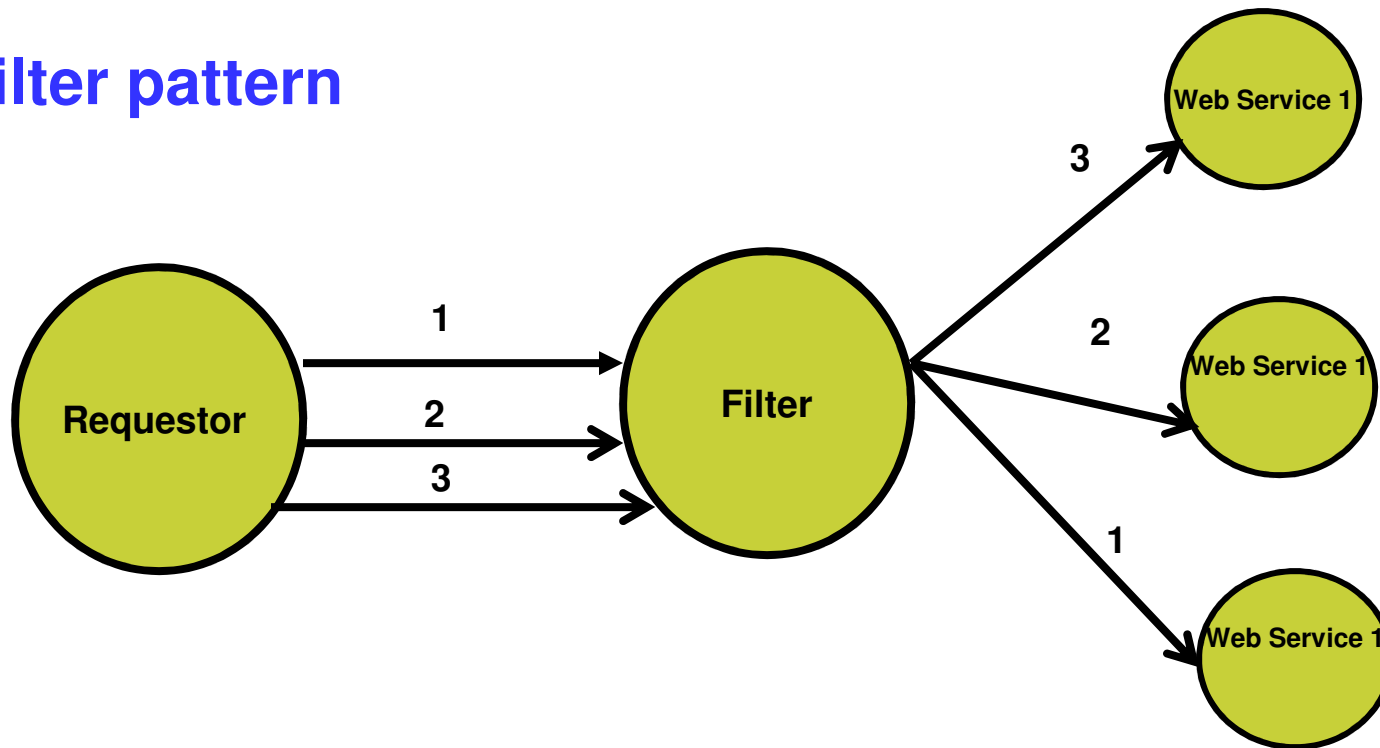
## The orchestrator pattern





# Examples of deployment patterns

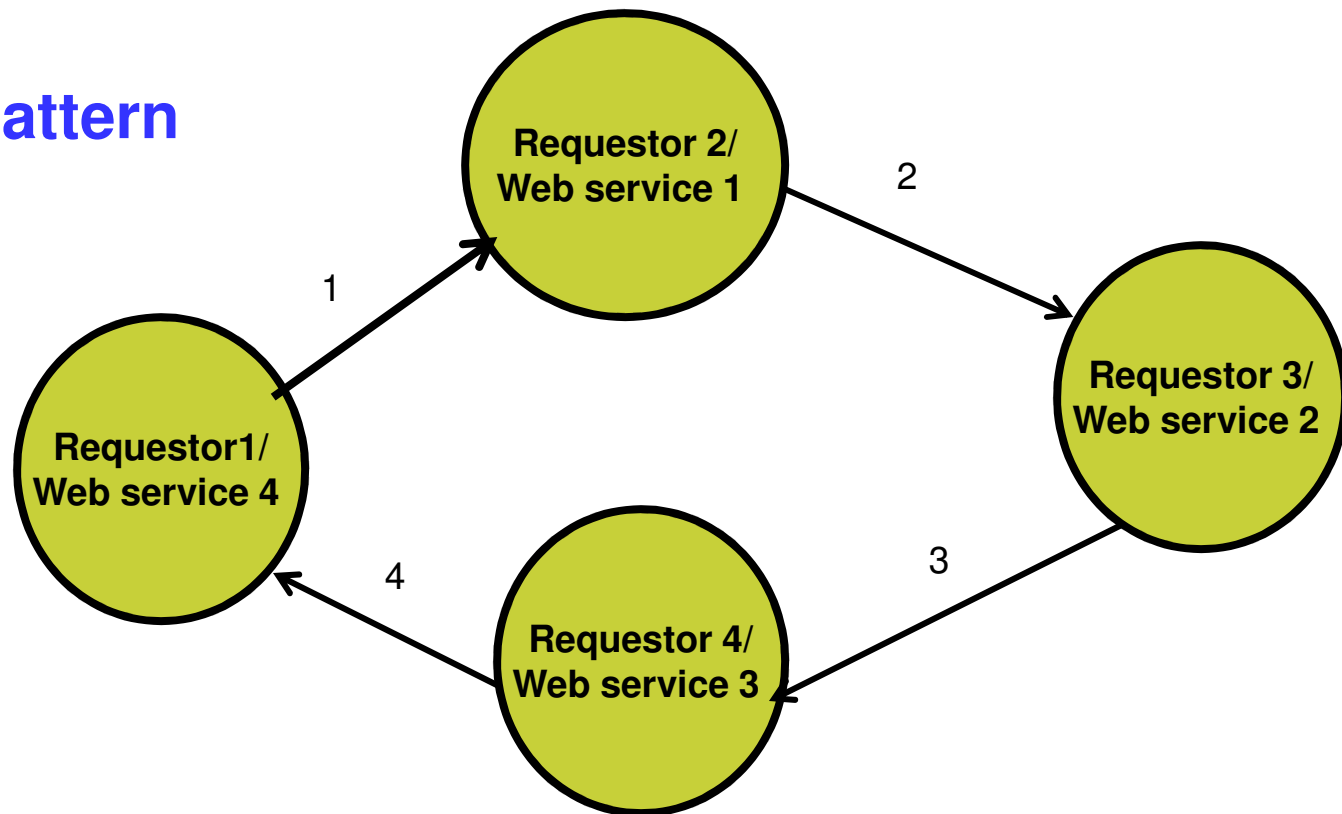
## The filter pattern





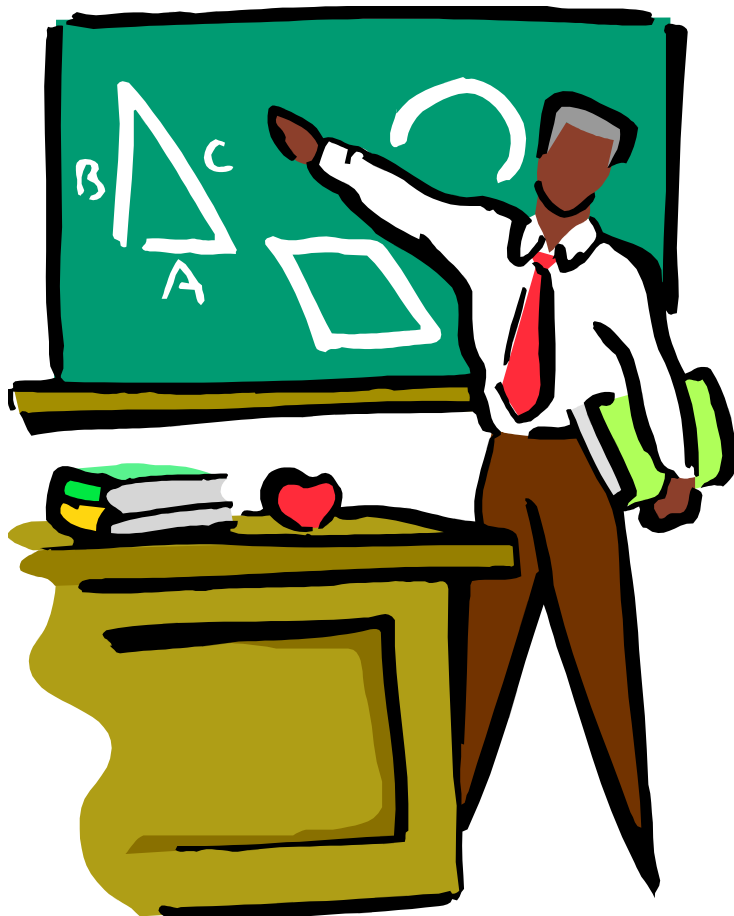
# Examples of deployment patterns

## The workflow pattern





## Digital Imagery



1. Introduction
2. Business model
3. Examples of interactions



## Introduction ...

### Common Picture Exchange (CPXe)

#### Purpose

- Automation of manipulation, printing and sharing digital images

#### Involved companies

- Most companies active in the digital imaging industry (e.g Kodak, HP, Konica, Olympus and others)



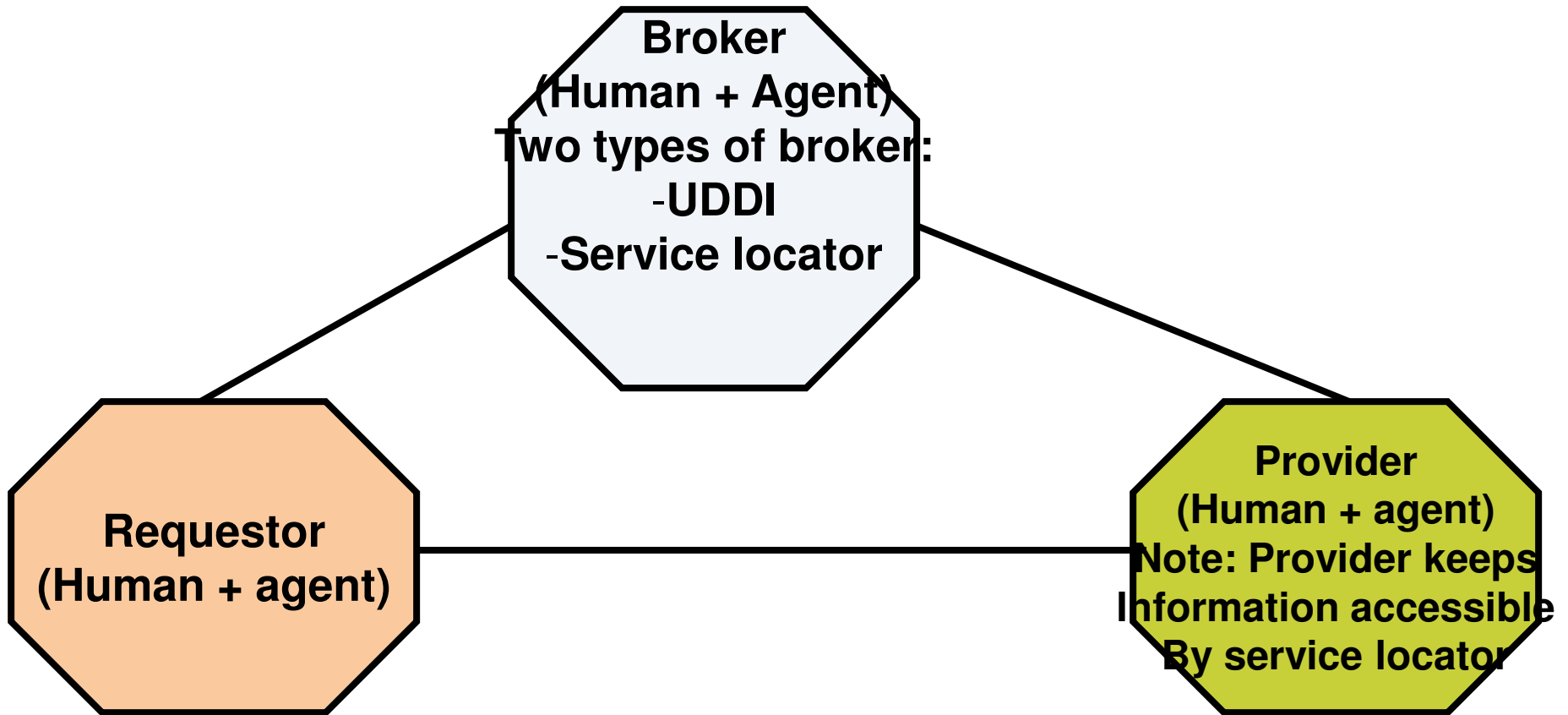
## Business model ...

### Changes to the original Web service model

- Motivation:
  - UDDI does not provide the level of fine granularity required by the industry
    - Where to get poster size glossy print in a given city
    - Located at a given distance from an hotel
    - With given opening hours
- Changes
  - Possibility to give much more low level granularity about services
  - Possibility for searching such type of information



# Business model







## Business model ...

### Service locators

- Interact (on behalf of service requestor with UDDI and/or catalogues to find service(s) meeting specific criteria
  - May be deployed by providers to direct to her/his services
  - May be deployed by an independent party
  - Accessible via a standardized API
- 
- Catalogues
    - Standardized way for service providers to provide more details about their services (e.g. closing hours of an outlet)
    - Kept in service provider domain
    - Accessible via a standardized API by:
      - Service requestors
      - Service locators



## Business model ...

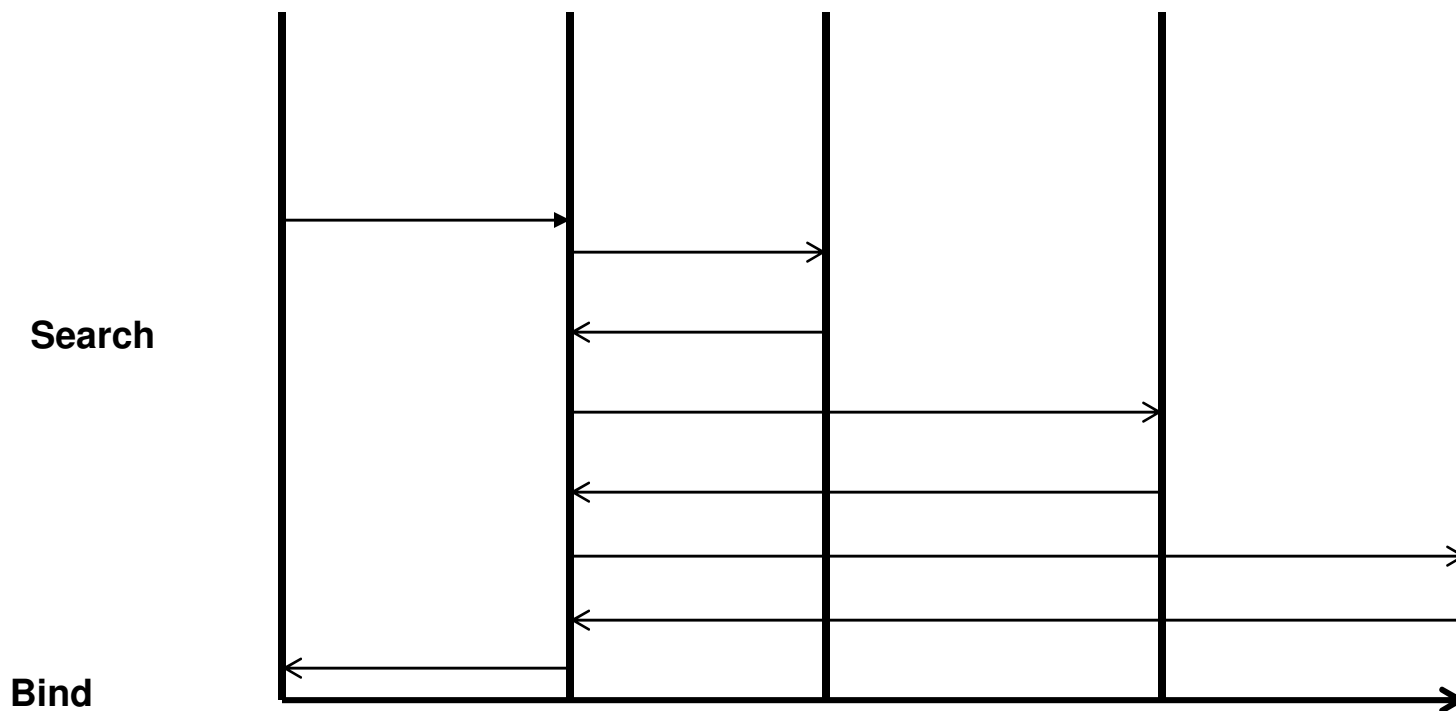
### Catalogues (Examples of info)

- Service property list
- Store list
  - Street address
  - Hours of operations
- Product list
- Price list
- Category list



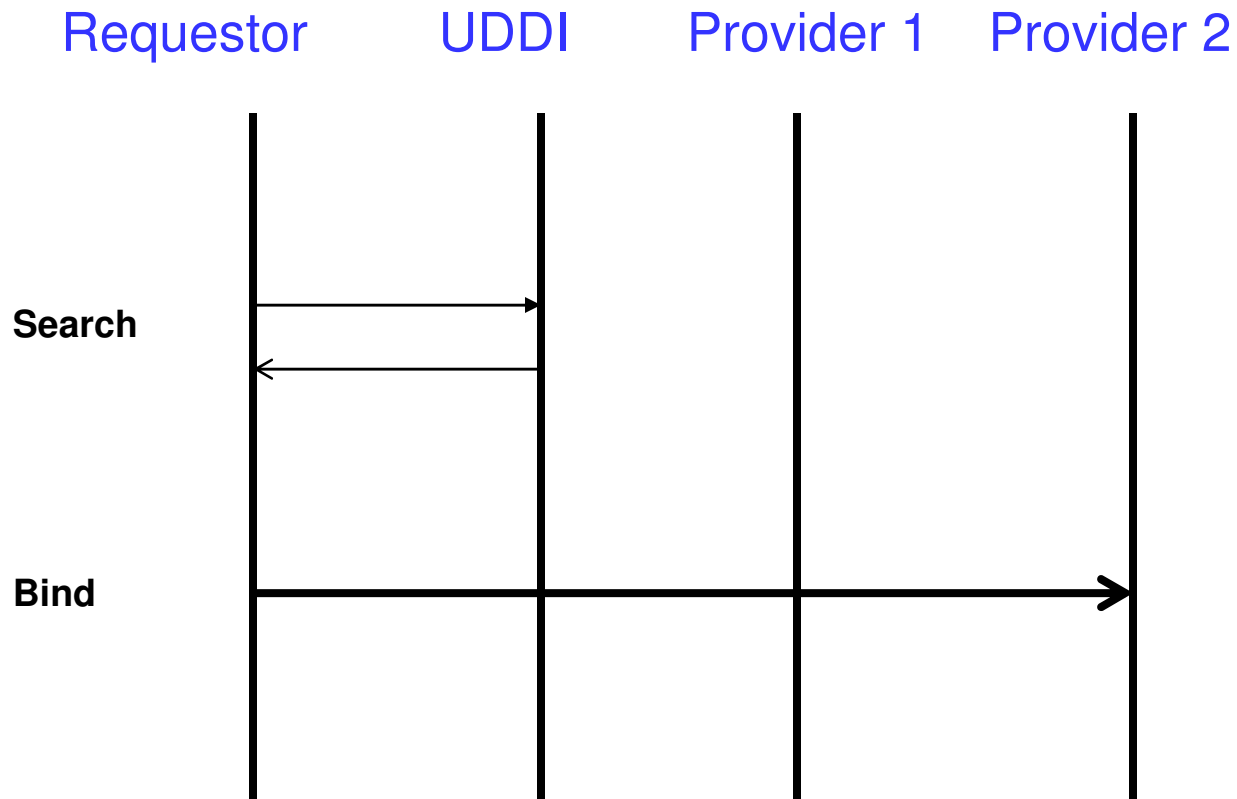
# Examples of interactions ...

Requestor      Locator      UDDI      Provider 1      Provider 2



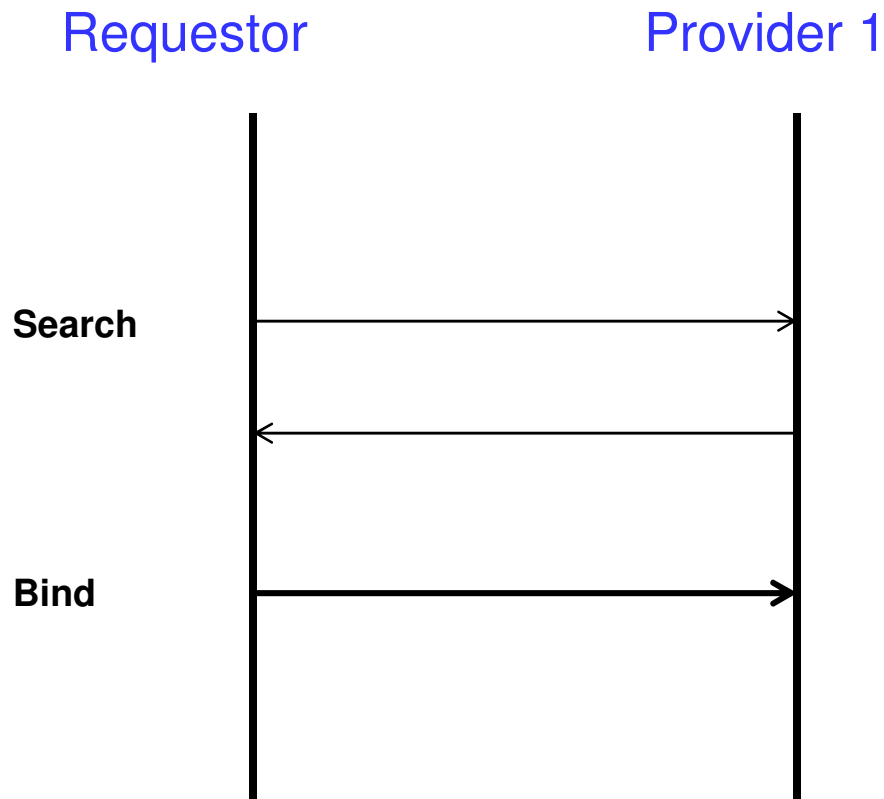


# Examples of interactions ...





## Examples of interactions ...





## To probe further ...

- Parlay-X
  - Parlay-X Web services white paper
  - Parlay-X Web services specifications including the one on conferencing  
<http://www.parlay.org/specs/index.asp>
- OMA
  - <http://www.openmobilealliance.org/>  
Digital imagery
  - T. Thomson et al., CPXe: Web services for Internet Imaging, IEEE Computer Magazine, October 2003