



- **Week #1**
- **(January 4 - 8)**
- **[Current Generation Networks: From 2G to 2.5G](#)**
- **Week #2**
- **(January 11-15)**
- **[Value added Services in Current Generation Networks](#)**
- **Week #3**
- **(January 18-22)**
- **[Next Generation Network Vision](#)**
- **[Session Signaling and Signaling Protocol Specific Architecture](#)**
- **Week #4**
- **(January 25 – 39)**
- **Web Services**
- **Project specification available**
- **Week #5**
- **(February 2 - 6)**
- **Tool kits**
- **Week #6**
- **(February 9 - 13)**
- **Web services**



Chapter V II

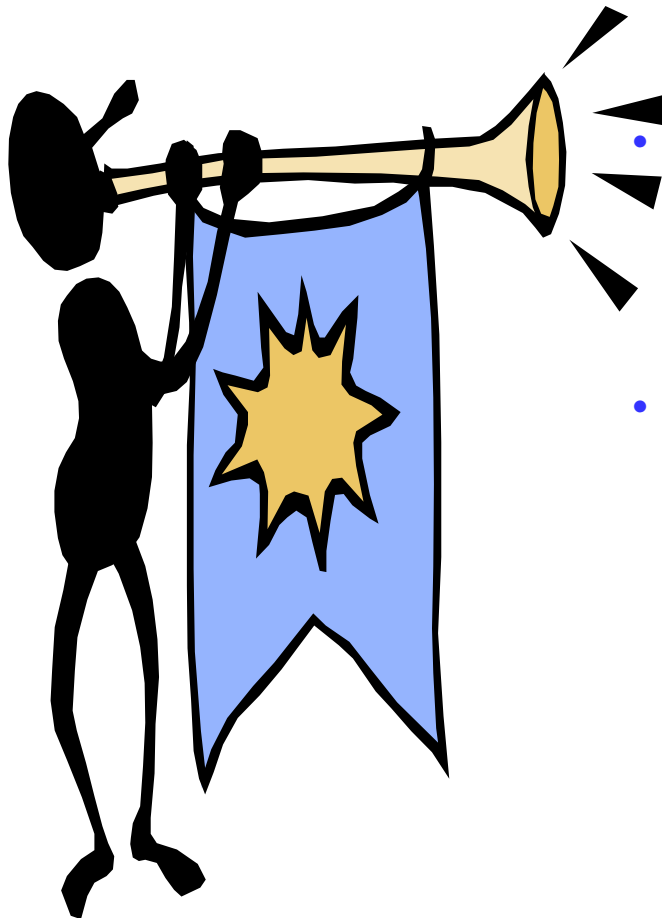
Web Services as a

Value Added Service Technology

(Part II)



Outline



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



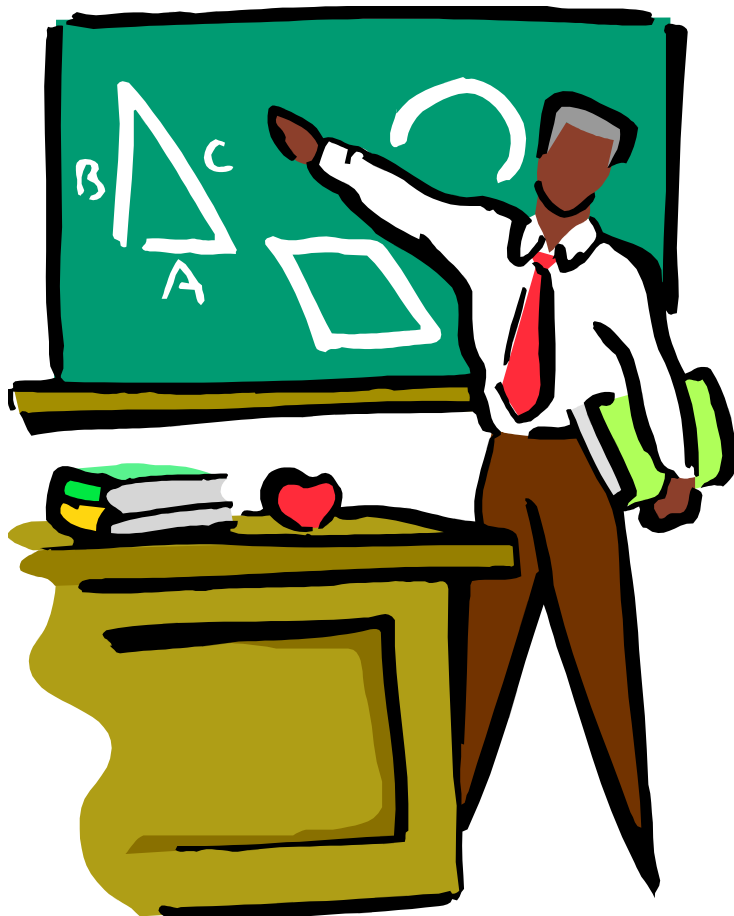
Applying Web services to value added service engineering in NGN



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

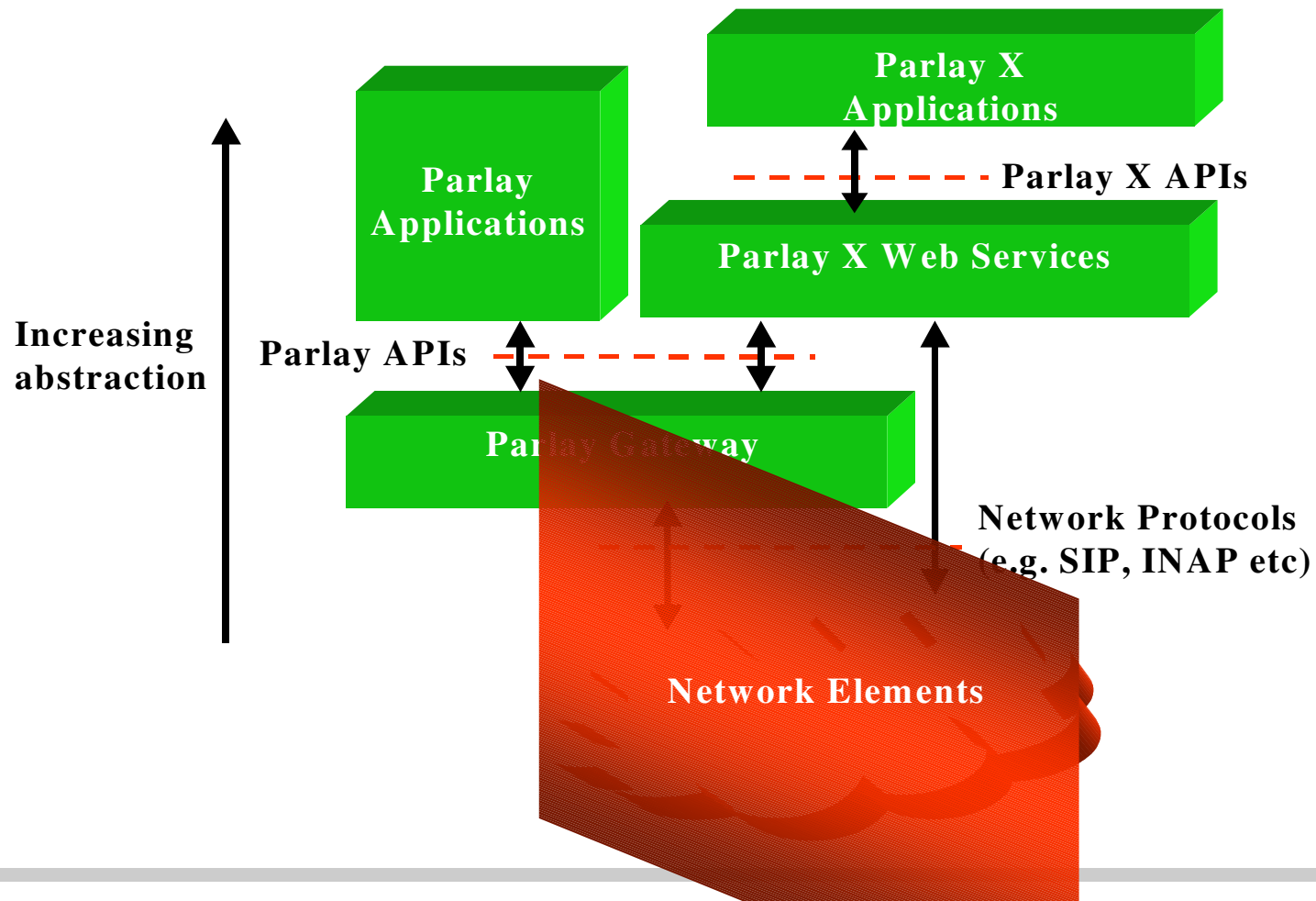
2. Application interfaces

- 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



Parlay-X Call Control ...

Make a call

Get call information

End call

Cancel call request

▪



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
 - Parties involved in the conference
- Media
 - audio/video/chat



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

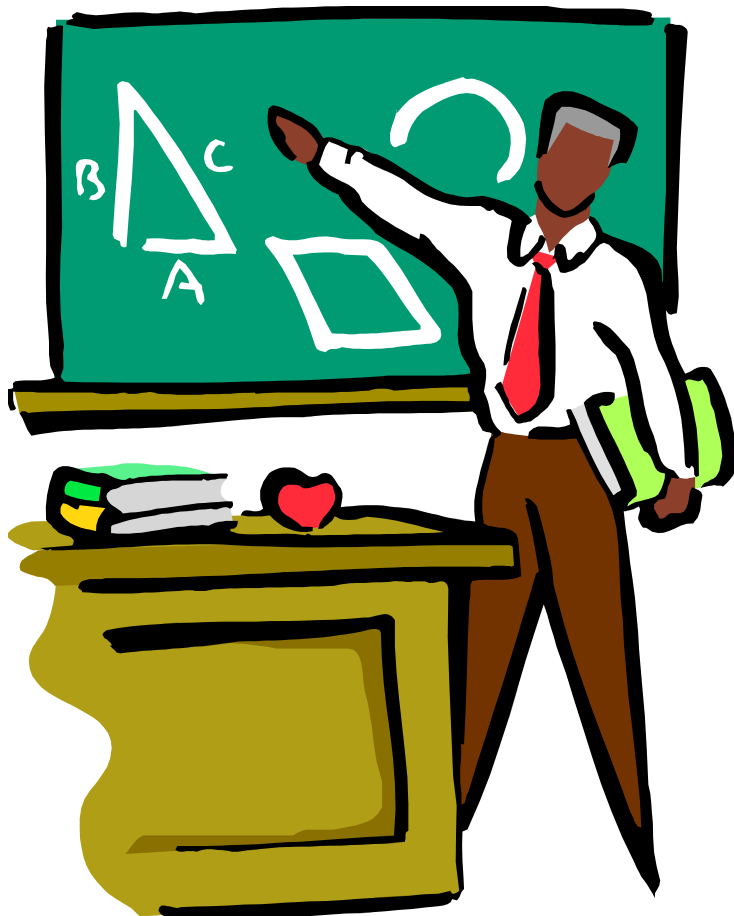
Get messages URIs

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)

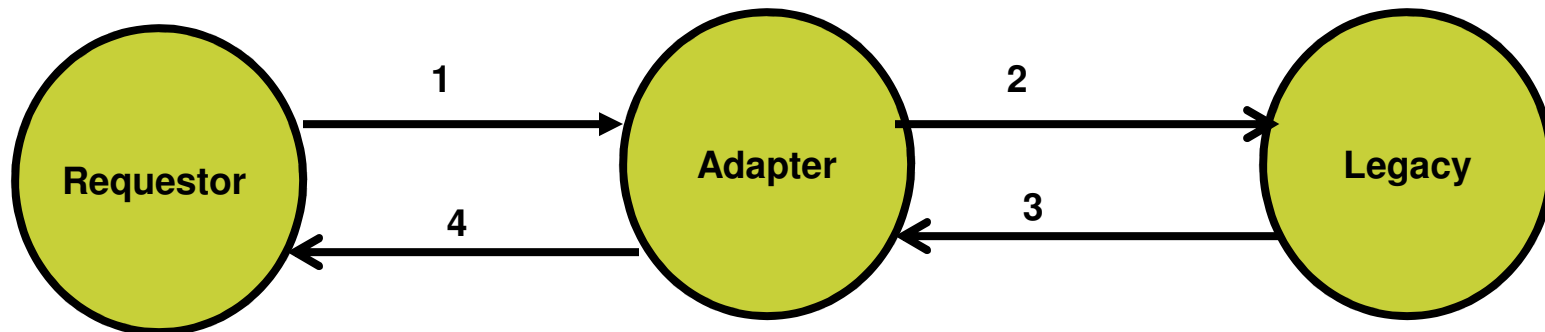
Aim at providing solutions to common problems faced by designers when using Web services in an OMA environment

- 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

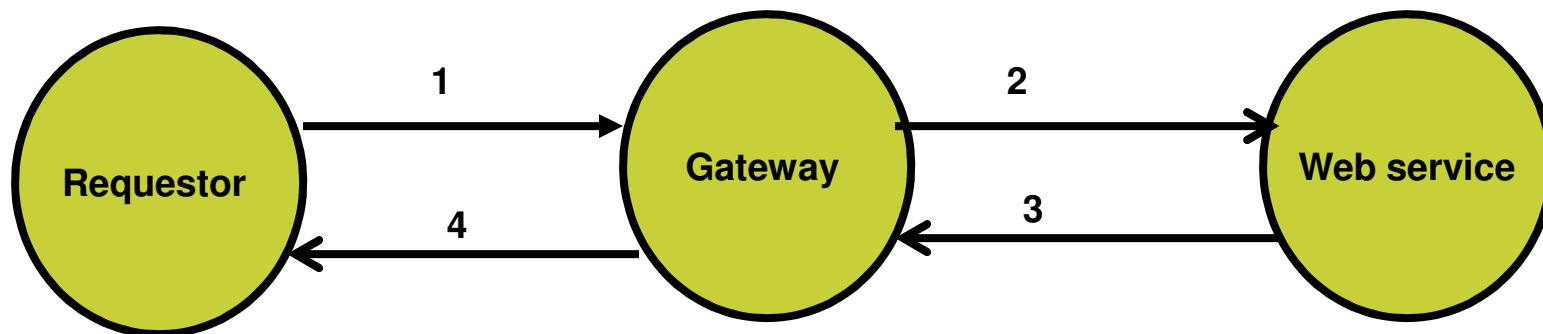
The adapter pattern





Examples of deployment patterns

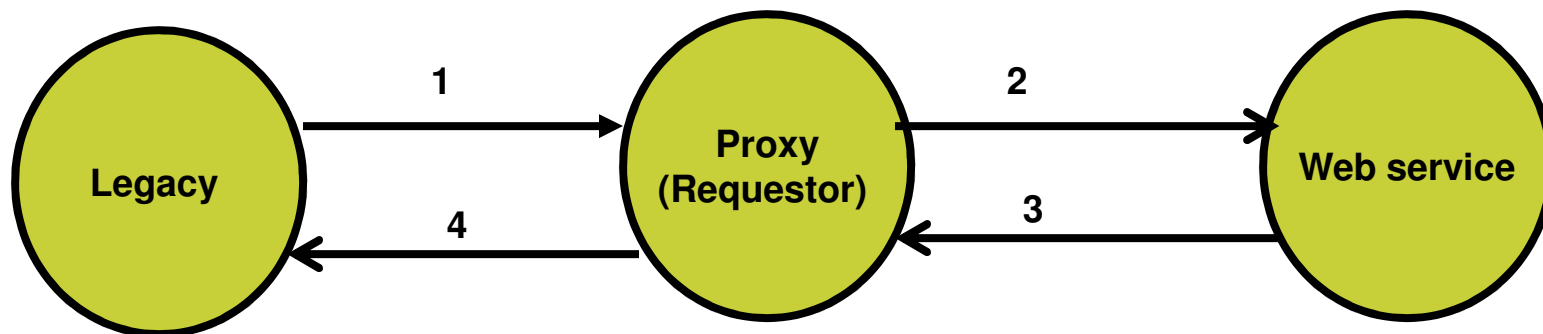
The gateway pattern





Examples of deployment patterns

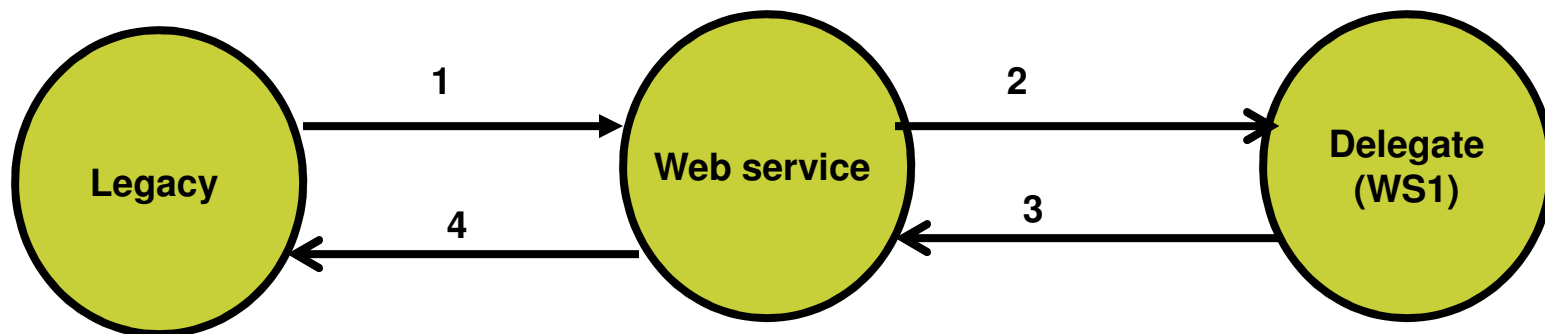
The proxy pattern





Examples of deployment patterns

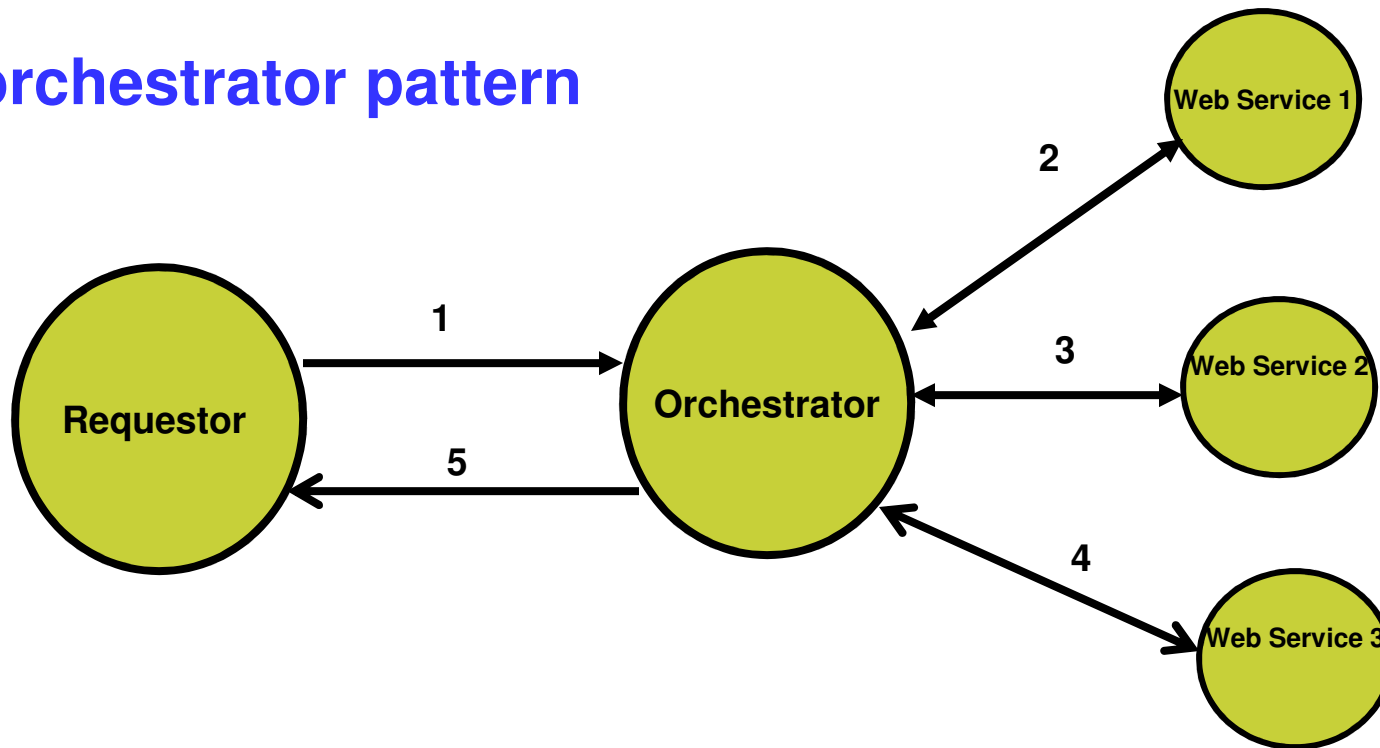
The delegate pattern





Examples of deployment patterns

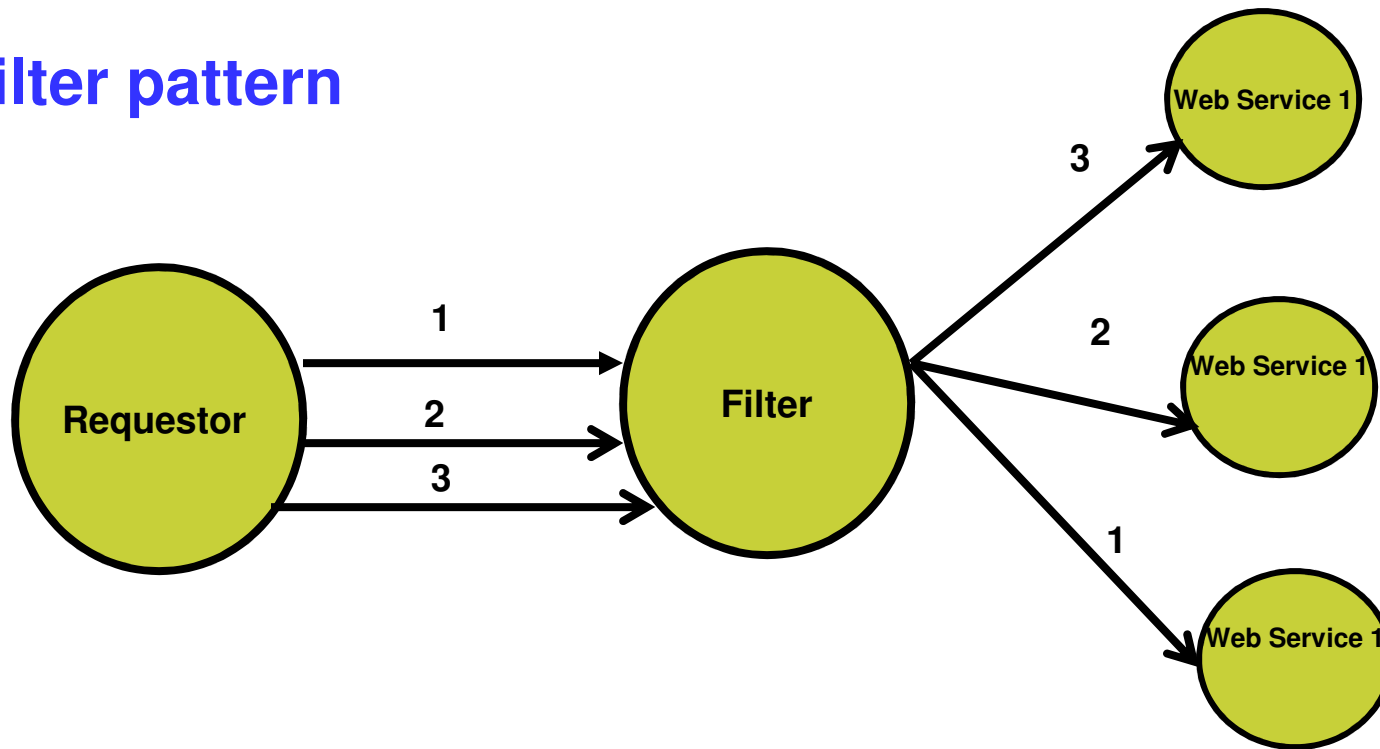
The orchestrator pattern





Examples of deployment patterns

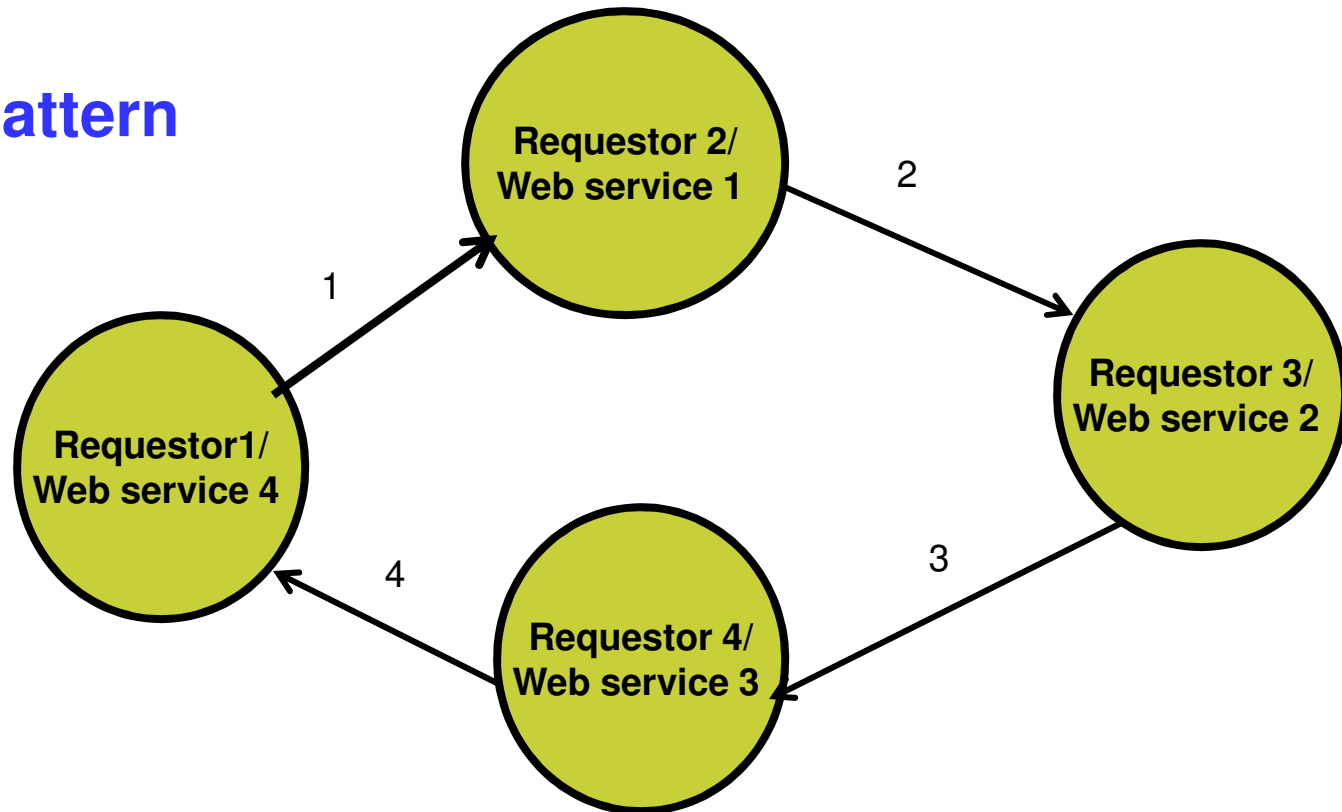
The filter pattern





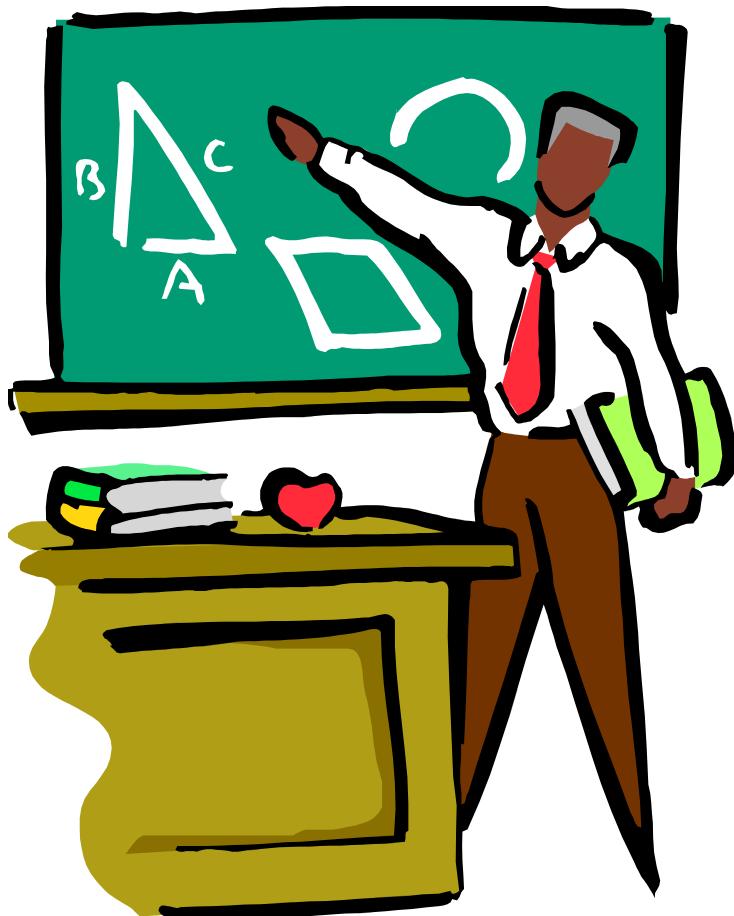
Examples of deployment patterns

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)



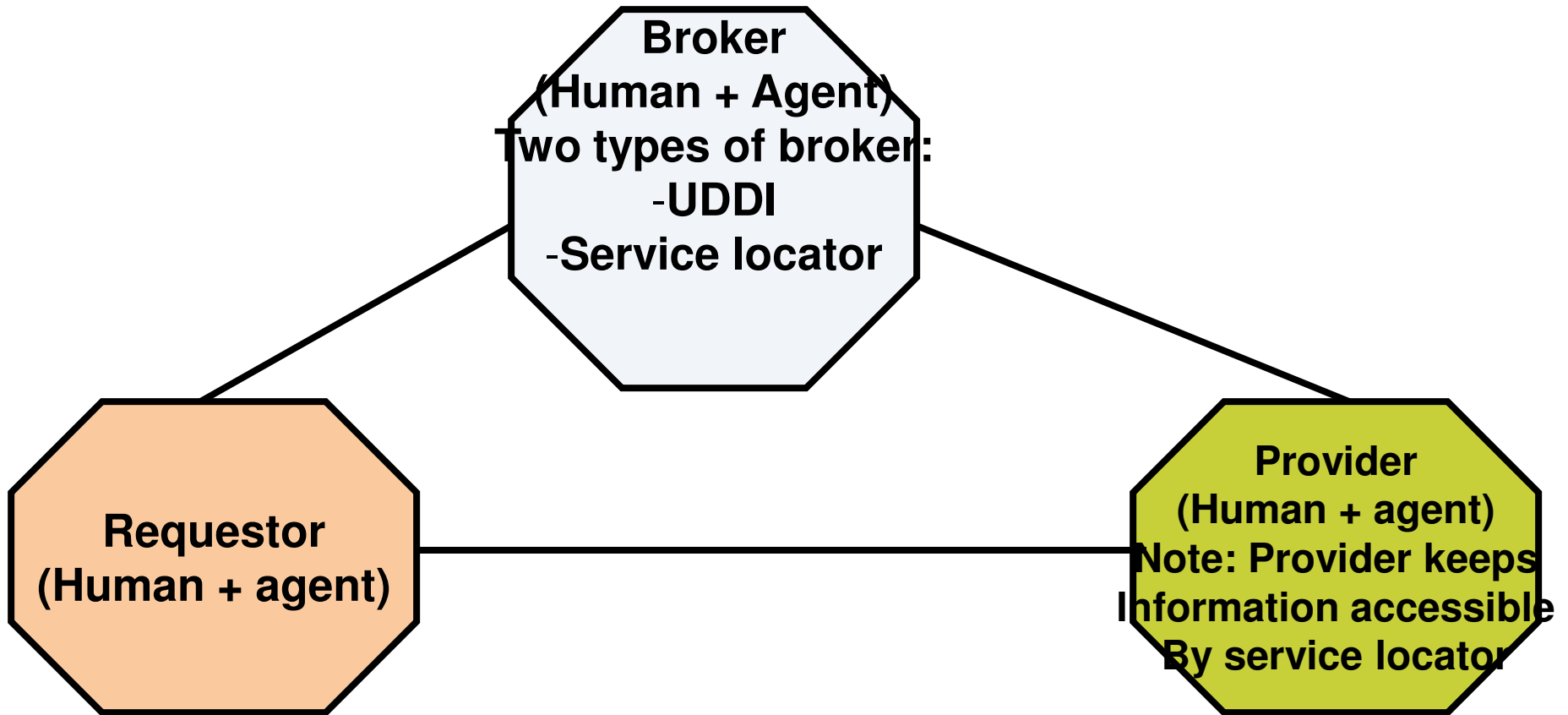
Business model ...

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 ...

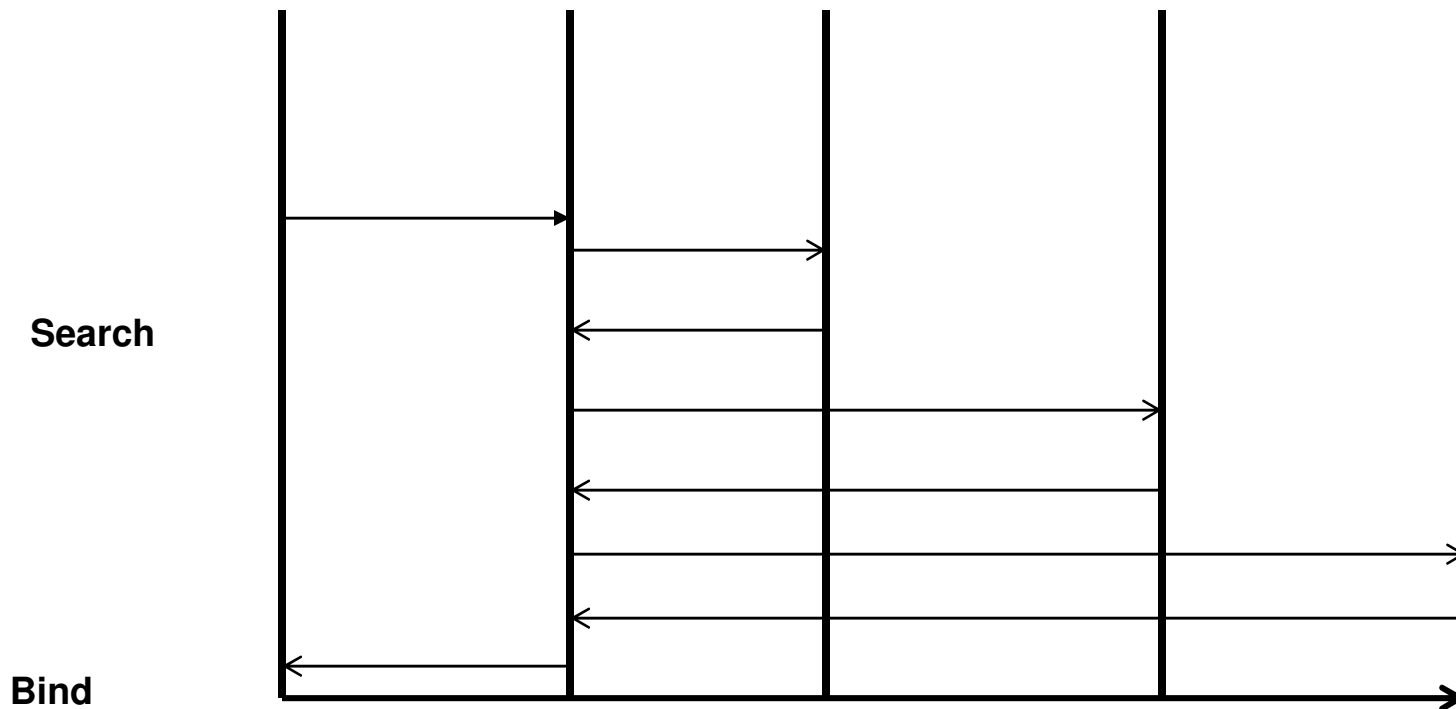
Catalogues (Examples of info)

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



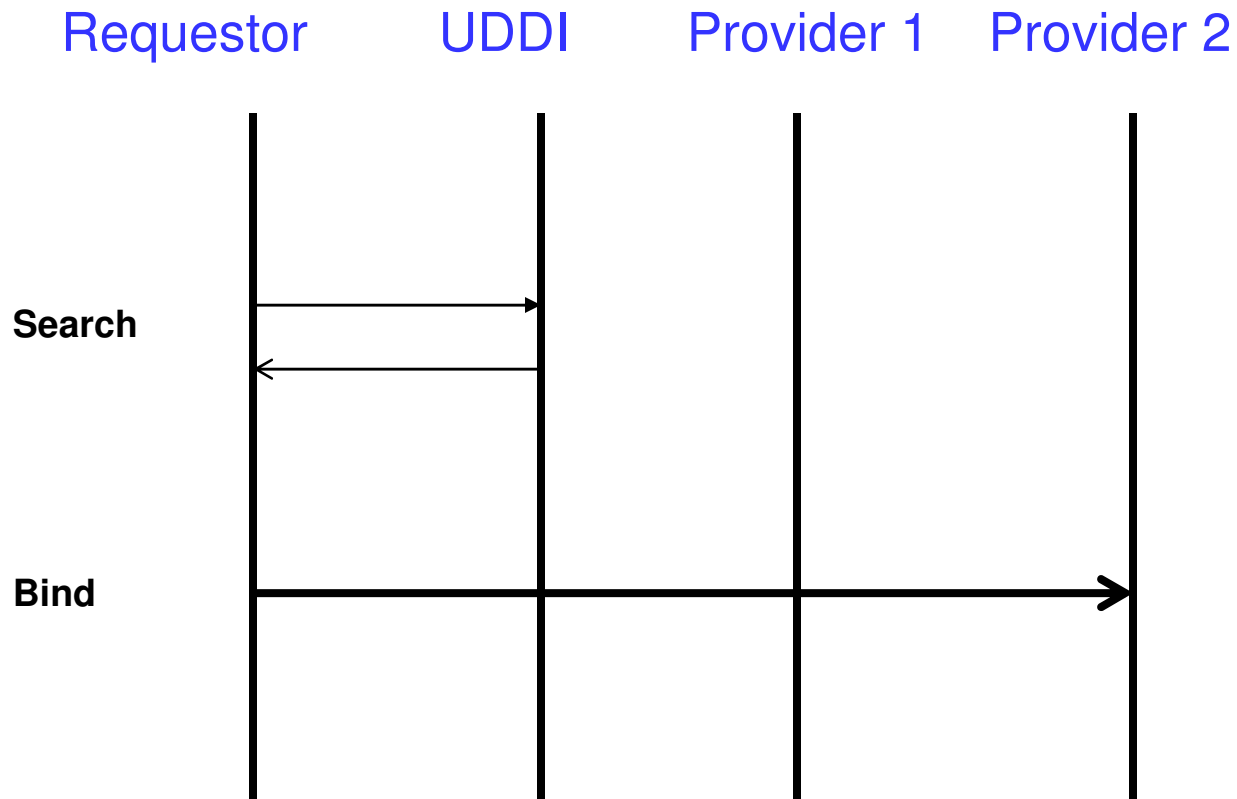
Examples of interactions ...

Requestor Locator UDDI Provider 1 Provider 2



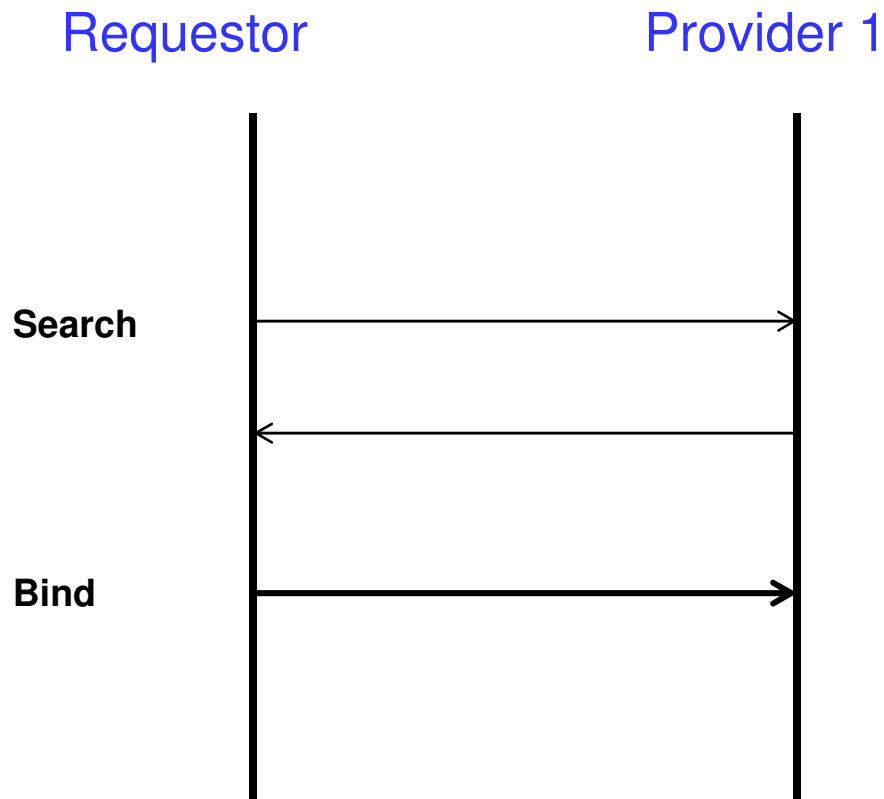


Examples of interactions ...





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