

Ask the Experts

A Series of Case Studies

Valyn Perini
Executive Director
OpenTravel



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THE TRAVEL
TRANSACTION**



**2008 ADVISORY FORUM
APRIL 14-16
ATLANTA, GEORGIA**

Panel Structure

- Overview of Implementations
- Drivers and Objectives
- Description of Implementations
- Impact of Implementations
- Business Benefits and Metrics
- Lessons Learned
- Future Plans



Participants

Bonnie Lowell, Director of GDS Technology
Starwood Hotels & Resorts

Lew Harasymiw, Director of Interface Solutions
SynXis

David Rosenberg, Lead Application Architect
Avis Budget Group



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STARWOOD

HOTELS & RESORTS WORLDWIDE, INC.

Bonnie Lowell **Starwood Hotels & Resorts**

Lessons Learned From Building OpenTravel Enabled Projects

Starwood Third Party Enhanced Content Project



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Starwood Enhanced Content Distribution System

Implementation Overview (1/5)

- **We are Starwood Hotels & Resorts**
 - One of the leading hotel and leisure companies in the world
 - Approximately 850 properties in more than 95 countries
 - A fully integrated owner, operator and franchisor of hotels and resorts with the following internationally renowned brands:
 - St. Regis, The Luxury Collection, Sheraton, Westin, Four Points by Sheraton, W, Le Meridien, Aloft and Element.



Starwood Enhanced Content Distribution System

Implementation Overview (2/5)

- **We are currently using OpenTravel standards for two projects...**
 1. A real-time Starwood-to-partner property content distribution system
 2. An integral part of web service specifications for a Starwood partner “direct connect” API

...and today I'm discussing the property content distribution system



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Starwood Enhanced Content Distribution System

Implementation Overview (3/5)

- Our business and technical drivers for implementation of this project were:
 - Strategic sales advantage from enhanced property content consumed by travel agents and online consumers via partner websites and systems
 - Further leveraging Starwood's proprietary content management system
 - Further leveraging Starwood's new web-services based central reservation system



Starwood Enhanced Content Distribution System

Implementation Overview (4/5)

- **This project is a collaborative effort between business and technology stakeholders**
 - Business Stakeholders
 - Global Distribution Strategy Team
 - Alternate Distribution Strategy Team
 - Metrics/ Enterprise Dashboard Team
 - Technical
 - Distribution Gateway & other development teams
 - QA, Network, Security, Operations, Production Support
- **The technical team (via a “Solution Delivery Manager”) manages the overall implementation**



Starwood Enhanced Content Distribution System

Implementation Overview (5/5)

- **System features & goals**
 - Exchange near real-time Starwood property content with established and high-margin partners, including:
 - Basic property information
 - Facility Information
 - Policy Information
 - Area Information
 - Affiliation Information
 - Contact Information
 - Special Conditions (TPA Extensions)
 - Exchange data between Starwood enterprise CMS and external Content Recipient/ Distribution Agent Partners



Starwood Enhanced Content Distribution System

Implementation Description (1/5)

- **Timeline: August 2007 – present**
 - **Nine key stages of development and milestones**
 1. **Project initiation**
 - **Artifacts include: initiation request, vision document with business use cases, project impact analysis, project scorecard, market needs analysis with metrics & ROI, etc.**
 2. **Steering committee review**
 - **Review, routing and approval (capital funds allocation)**
 3. **Preliminary system specifications**
 - **Artifacts include: functional requirements, application architecture, networking & infrastructure requirements, legal and security considerations; QA & certification requirements, etc.**



Starwood Enhanced Content Distribution System

Implementation Description (2/5)

- Nine key stages of development and milestones (continued)

This was a lot of effort!

4. Content and functionality mapping between Starwood content management & electronic distribution systems and OpenTravel messages
5. Stakeholder review & approval
 - Legal team, architecture team, security team, network operations team, QA team, business sponsors, implementation partners
6. Technical specifications
 - Artifacts include use cases, message samples, rules & business logic, logging, partner specifications, metrics gathering & analysis, wireframes, etc.
7. Prototyping and stakeholder UAT
8. Internal QA and partner test & certification
9. Production

We are here!



Starwood Enhanced Content Distribution System

Implementation Description (3/5)

- **Integration with other applications**
 - Internal (2007A OTA implementation):
 - SOA-based components
 - Starwood proprietary Content Management System
 - » Mostly a content mapping exercise
 - Electronic distribution gateway
 - » Security and message transformation & processing
 - Real-time property content notification system
 - » Integration with real time, XML-based pub/sub content notification system
 - Data warehouse logger application
 - » Integration with logging for data warehouse storage
 - External: Pegasus ODD System (2005B OTA implementation)



Starwood Enhanced Content Distribution System

Implementation Description (4/5)

- **OpenTravel messages used**
 - OTA_HotelDescriptiveContentNotifRQ with extensive use of schema elements and attributes:
 - Basic Property Information (HotelDescriptiveContents->HotelInfo)
 - Facility Information (HotelDescriptiveContent->FacilityInfo)
 - Policy Information (HotelDescriptiveContent->Policies)
 - Area Information (HotelDescriptiveContent->AreaInfo)
 - Affiliation Information (HotelDescriptiveContent->AffiliationInfo)
 - Contact Information (HotelDescriptiveContent->ContactInfos)
 - Special Conditions (HotelDescriptiveContent->TPA_Extensions)



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– OTA_HotelDescriptiveContentNotifRS

Starwood Enhanced Content Distribution System

Implementation Description (5/5)

- **OpenTravel membership benefits we used include:**
 - Well documented OpenTravel specifications—including the Message Users Guide (MUG) and numerous use case-based sample messages
 - Learning materials suitable for developing an on-boarding program for developers new to OpenTravel messages
 - Architecture, security , etc. materials shared with technology stakeholders
 - Additions to OpenTravel code tables as requirements were identified
 - Additions to OpenTravel message attributes as requirements were identified
 - Access to the Interoperability Test Suite



Starwood Enhanced Content Distribution System

Implementation Summary (1/1)

- **System ROI to be measured in a combined manner:**
 - **Impact from content freshness**
 - **Metrics include:**
 - Amount of Starwood property content shared with partners
 - Versions of Starwood property content shared with partners
 - Quantity of and frequency of exchange with Content Recipient and Distribution Agent partners
 - **Metrics fed as key performance indicators to dashboards and other strategic tracking systems**
 - **Campaign type measurement of sales impact on multiple channels (GDS, branded web, etc.)**



Starwood Enhanced Content Distribution System

Lessons Learned (1/5)

- **Lesson learned:** Not all software developers are familiar with OpenTravel standards and messages
 - **Tip:** If doing an OpenTravel implementation is still new to your company, plan for training programs and communication plans for all stakeholders in addition to developers



Starwood Enhanced Content Distribution System

Implementation Summary (2/5)

- **Lesson learned:** There may be significant differences between OpenTravel implementations used by you and your partners
 - **Tip:** If this is an implementation between different OpenTravel versions (say between 2005B and 2007A) create specifications for the newest message set first and include sub specifications for older versions



Starwood Enhanced Content Distribution System

Lessons Learned (3/5)

- **Lesson learned:** Planning for testing and certification with your Content Recipient and Distribution Agent partners is more important than you may think
 - **Tip:** Plan on an appropriate test & certification cycle with your OpenTravel content partners as unanticipated issues and bugs can (and WILL!!!) appear in both systems.



Starwood Enhanced Content Distribution System

Lessons Learned (4/5)

- **Lesson learned:** You need to insert your ongoing OpenTravel requirements into interfacing systems
 - **Tip:** If you have are using a proprietary content management system, put a process in place to include an OpenTravel standards “review” whenever new content attributes are added to the system or changed. This will allow you to plan for OpenTravel message comments, etc.



Starwood Enhanced Content Distribution System

Lessons Learned (5/5)

- **Lesson learned:** Negotiate your business terms with your partners before joint testing and certification
 - **Tip:** Testing and certification can be streamlined with pre-negotiated service level agreements, onward distribution agreements & metrics capture, copyright agreements, etc.



Thank You



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Lew Harasymiw
Director of Interface Solutions
SynXis



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SynXis Overview

- History
 - Founded 1996
 - Revolutionized the industry with cost effective services and technology
 - Year over year growth and a recognized industry innovator
 - Acquired hubX in January 2004
 - Acquired by Sabre Holdings in January 2005
 - Acquired E-site Marketing in June 2007
 - Over 8,400 properties in over 100 countries
- Our Team
 - Seasoned management team with impressive hospitality, operations, and technology backgrounds
 - International organization with offices in USA, Europe, South America and Asia
- SynXis Mission
 - *"Energize and optimize hotel distribution and marketing"*

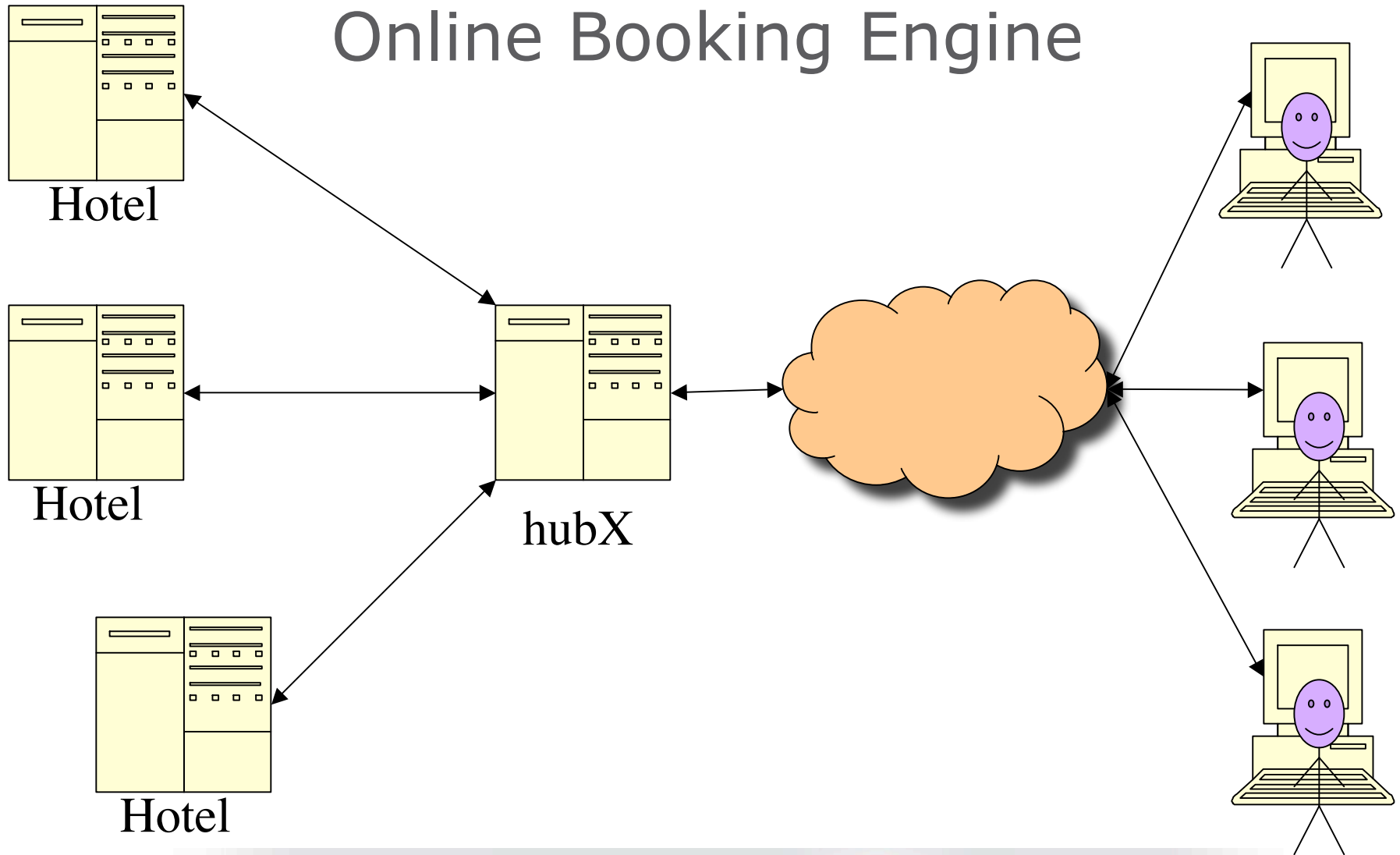


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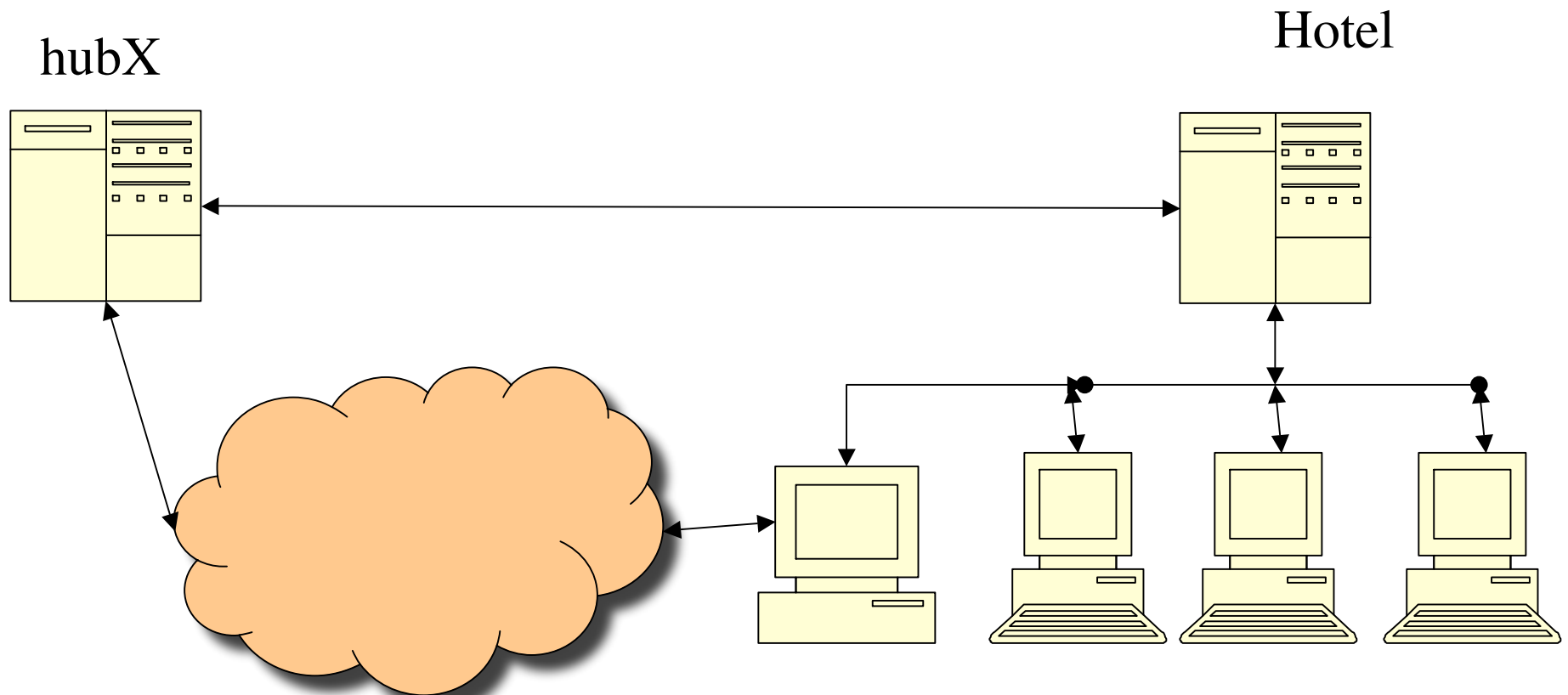


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Online Booking Engine

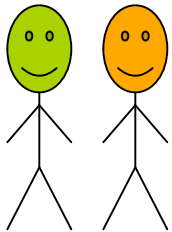


Old School Data Flow

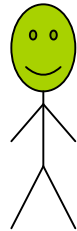


Development Process

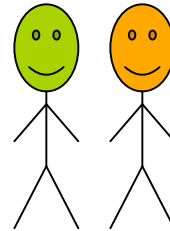
Kickoff /
Analysis



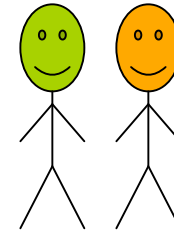
Development



Rollout



Support



Key:



Analyst



Developer





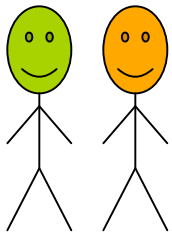
Reasons for Change

- Business Drivers
 - Cost
 - Efficiency
- Joint Technical / Business decision
- Pass Reservation and Availability Data

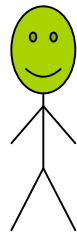


Proposed Process Change

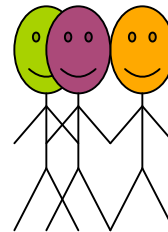
Kickoff /
Analysis



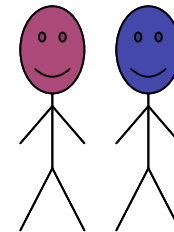
Development



Rollout



Support



Key:



Analyst



Developer



Implementer

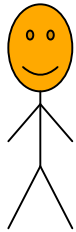


Support

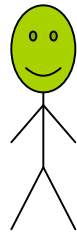


SynXis Development Process

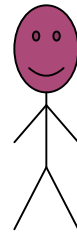
Kickoff /
Analysis



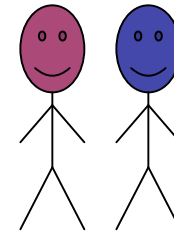
Development



Rollout



Support



Key:



Analyst



Developer



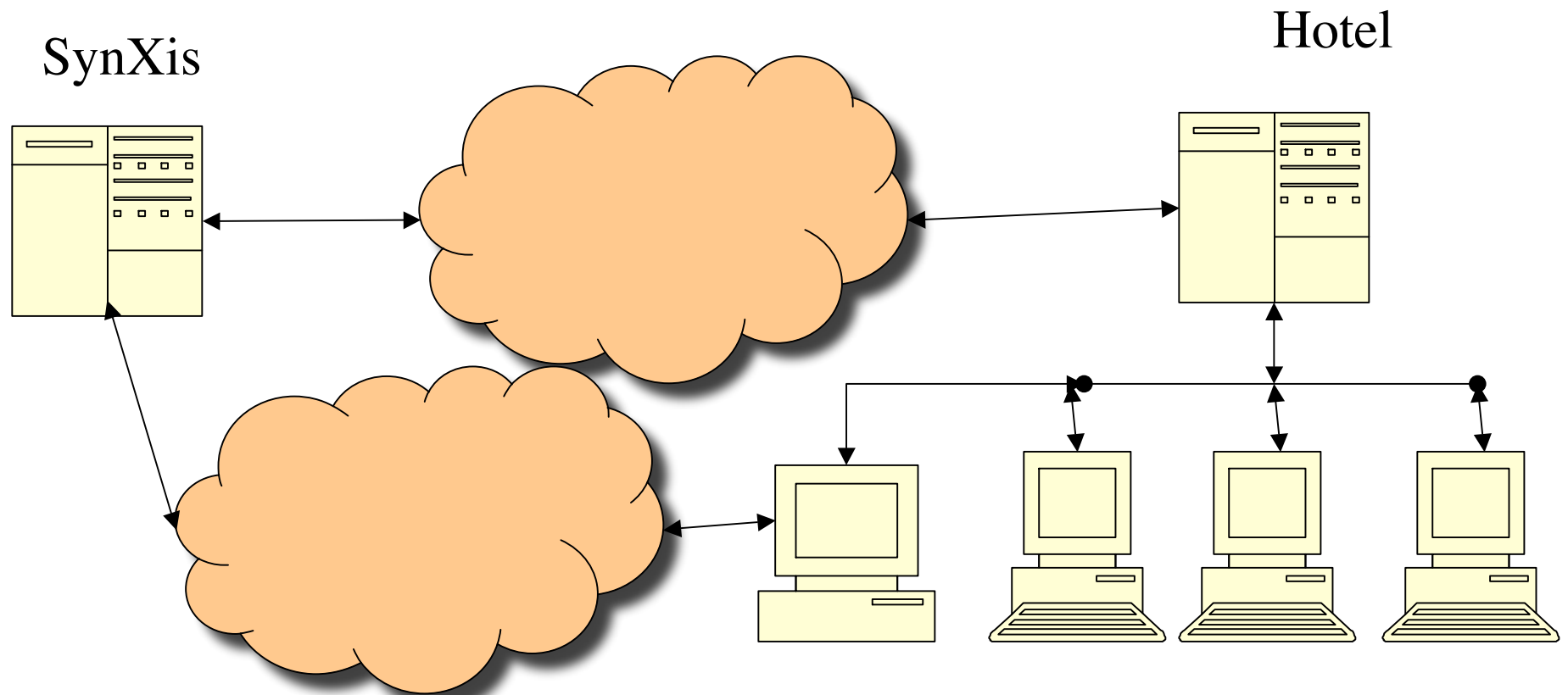
Implementer



Support

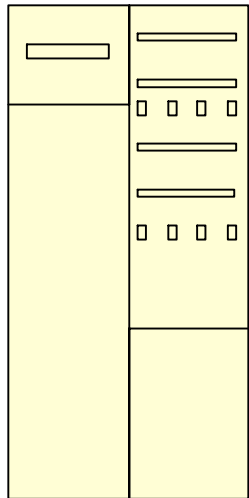


Proposed solution: Server to Server

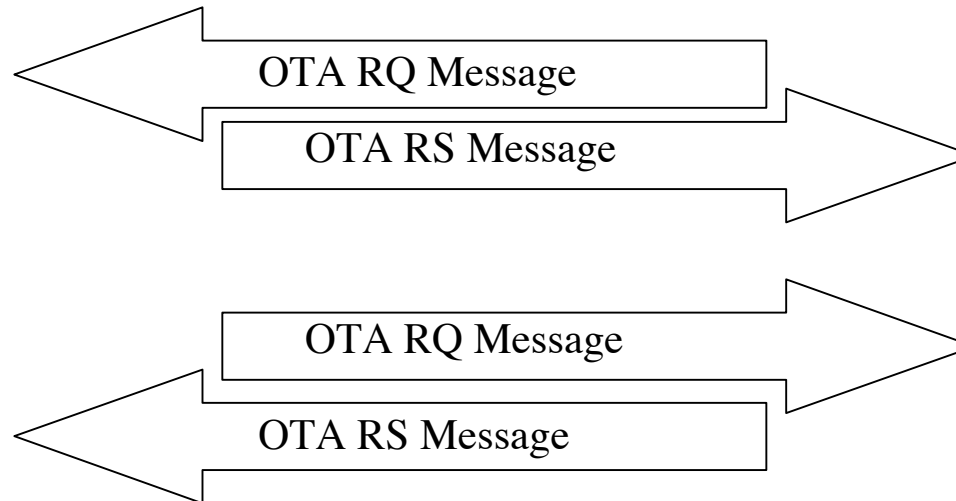
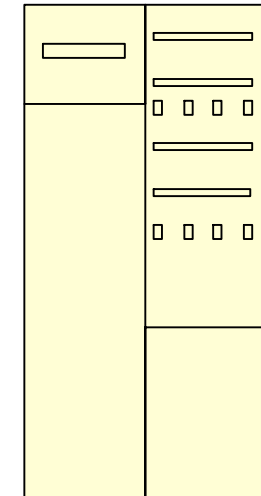


Property Integration

SynXis



Hotel



ARI:

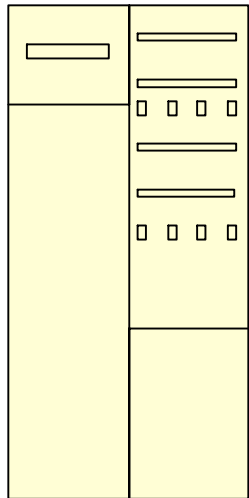
- OTA_HotelAvailNotif
- OTA_HotelBookingRuleNotif
- OTA_HotelInvCountNotif
- OTA_HotelRateAmountNotif

Reservations:

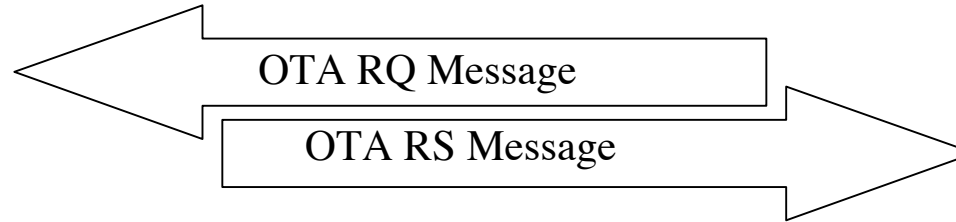
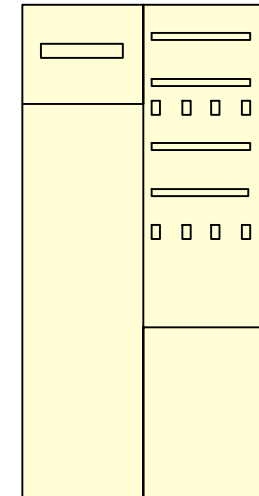
- OTA_HotelResNotif
- OTA_HotelResModifyNotif
- OTA_HotelCancel
- OTA_HotelGetMsg

Channel Integration (Real Time)

SynXis



Channel



ARI:

- OTA_HotelAvail
- OTA_HotelSearch

Descriptive Content:

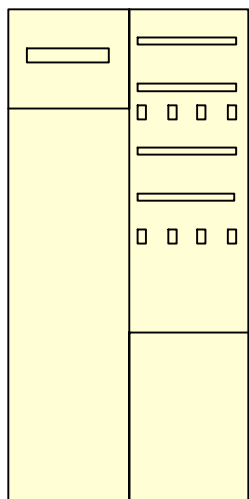
- OTA_HotelDescriptiveInfo

Reservations:

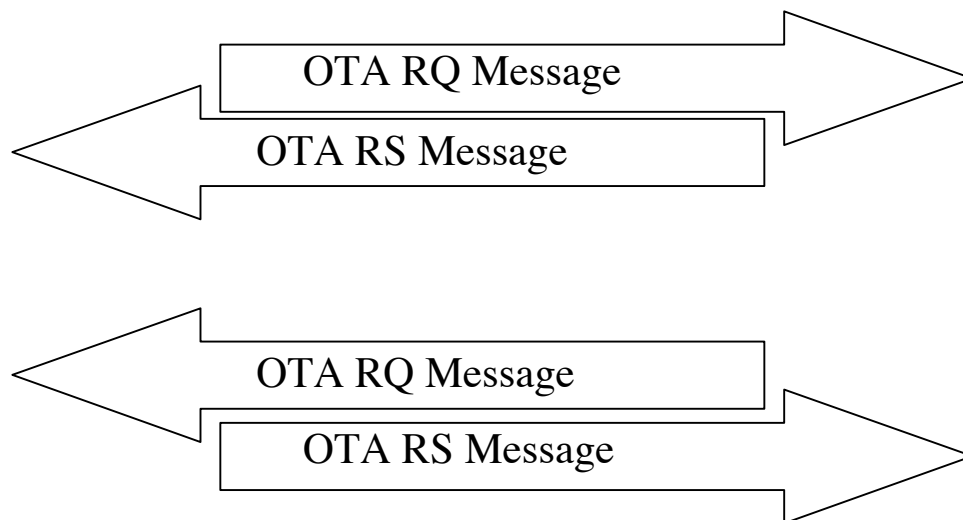
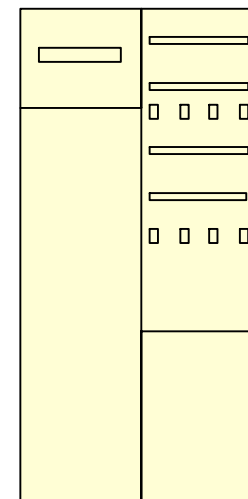
- OTA_HotelRes [Notif]
- OTA_HotelResModify[Notif]
- OTA_HotelCancel
- OTA_Read

Channel Integration (Push)

SynXis



Channel



ARI:

OTA_HotelAvailNotif
OTA_HotelRatePlanNotif

Reservations:

OTA_HotelRes [Notif]
OTA_HotelResModify[Notif]
OTA_HotelCancel

Benefits and Lessons Learned

- Benefits
 - Quicker implementation
 - Configuration, not development
 - Quicker development (when required)
 - XSLT transformation
 - Fewer Support issues
 - Connectivity still an issue
 - Interface Errors



Future

- System enhancements
 - Improved Server infrastructure
 - Asynchronous Messaging
 - Common Usage Profiles (HTNG)



David L. Rosenberg Avis Budget Group

Direct Connect



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Implementation Overview

- Business and/or technical drivers of implementation
 - Multiple Partners sought access our reservation system to resell reservations to their clients
 - Previous incarnations required one-off implementations of VPN interfaces and business rules
 - Web Services was a leading technology that Avis wanted to utilize.



Implementation Overview

- Architecture Group was primary driver in proposing and implementing this solution
- Purpose of implementation
 - This project allowed partners to pass Car Rental availability requests to our mainframe system, and for the mainframe reservation system to pass back availability responses. The partner then could send a reservation request and receive a confirmed reservation response.



Implementation Description

- Timeline
 - Project Initiation – January 2001
 - Production Implementation November 2002



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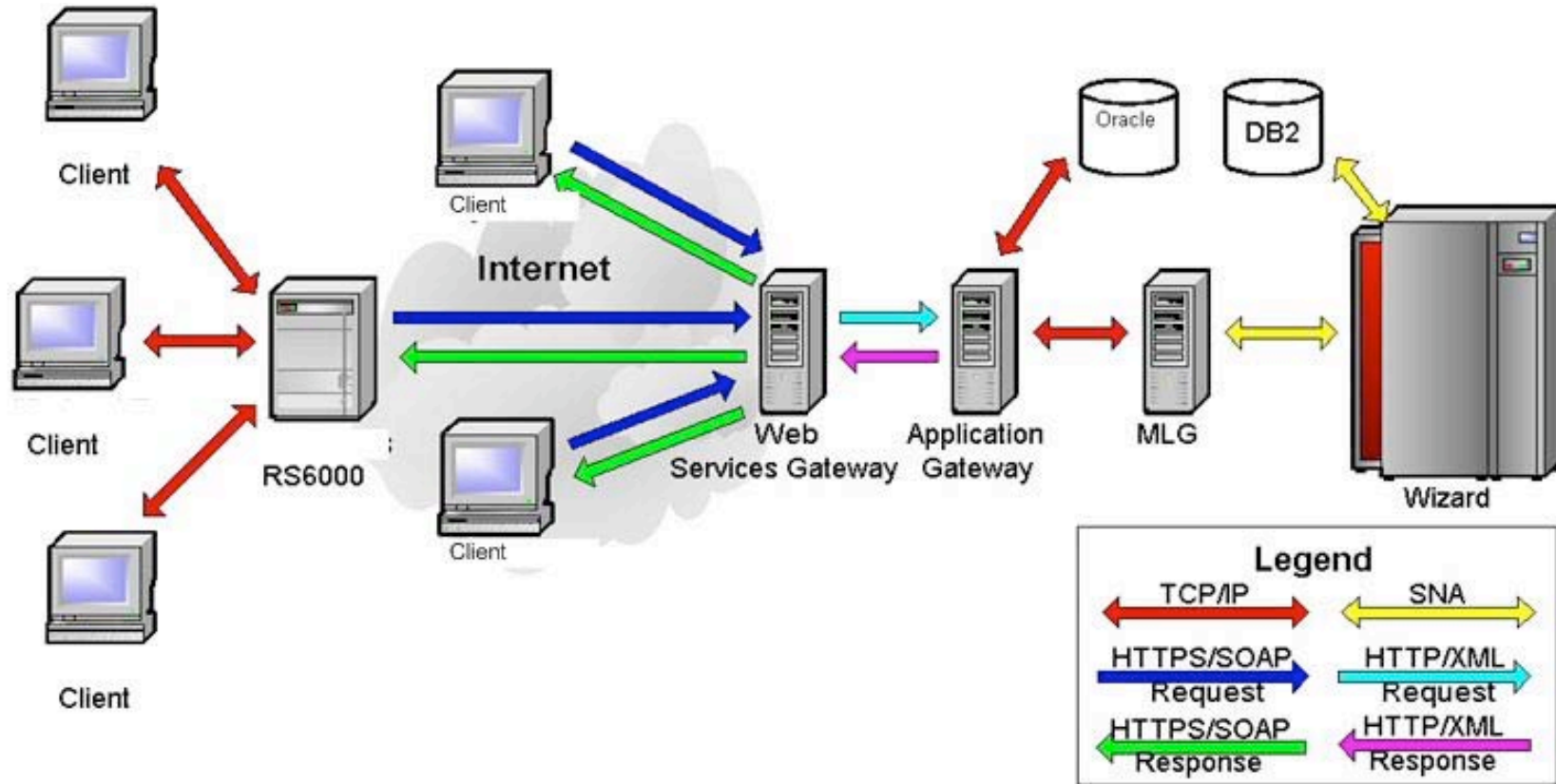
Implementation Description

- Messages used

- Availability and Rate
- Create Reservation
- Modify Reservation
- Cancel Reservation
- Display Reservation
- Location Search
- Service Ping



Implementation Description



Implementation Description

- Open Travel Membership
 - Participation in work group
 - Input into specifications
 - Rapid requirement response



Benefits and Lessons Learned

- Benefits
 - We can now add a new partner in days instead of weeks
 - The cost for each additional partner is both predictable and less expensive



Benefits and Lessons Learned

- Were the original objectives of the project met?
 - Very much so
 - Started with just one partner
 - Now adding partners almost monthly



Benefits and Lessons Learned

- What would you do differently if you could?
 - We would have waited until the Web/SOA/XML/software/hardware specifications were perfected!

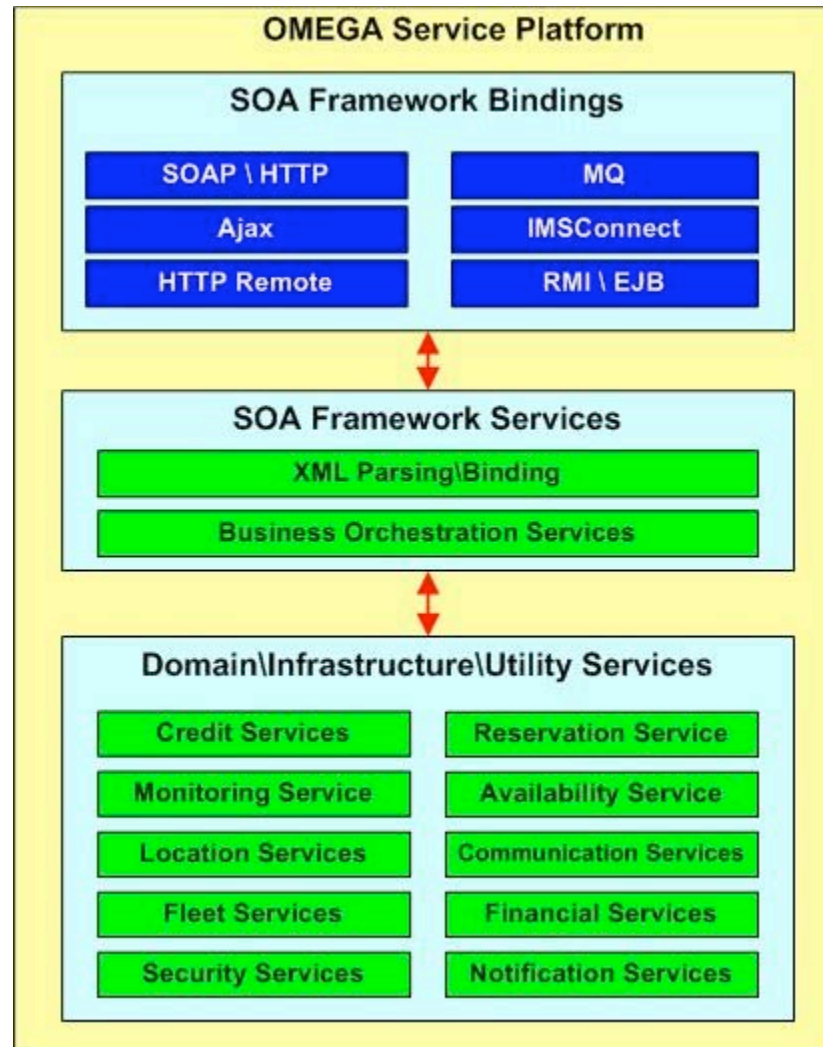


Benefits and Lessons Learned

- But seriously folks!
 - First Wave (Web Services)– 2001 to 2003
 - Services tied to XML interface
 - Not optimized for internal consumption
 - Governance issues regarding service development
 - Second Wave (Tool Evaluation) 2004
 - Third Wave (SOA Framework) 2004 to 2007
 - Success Criteria
 - Services developed as Java business objects
 - » Independent of interface bindings (Internal Loose Coupling)
 - Abstraction of Web service technologies
 - Service development governance

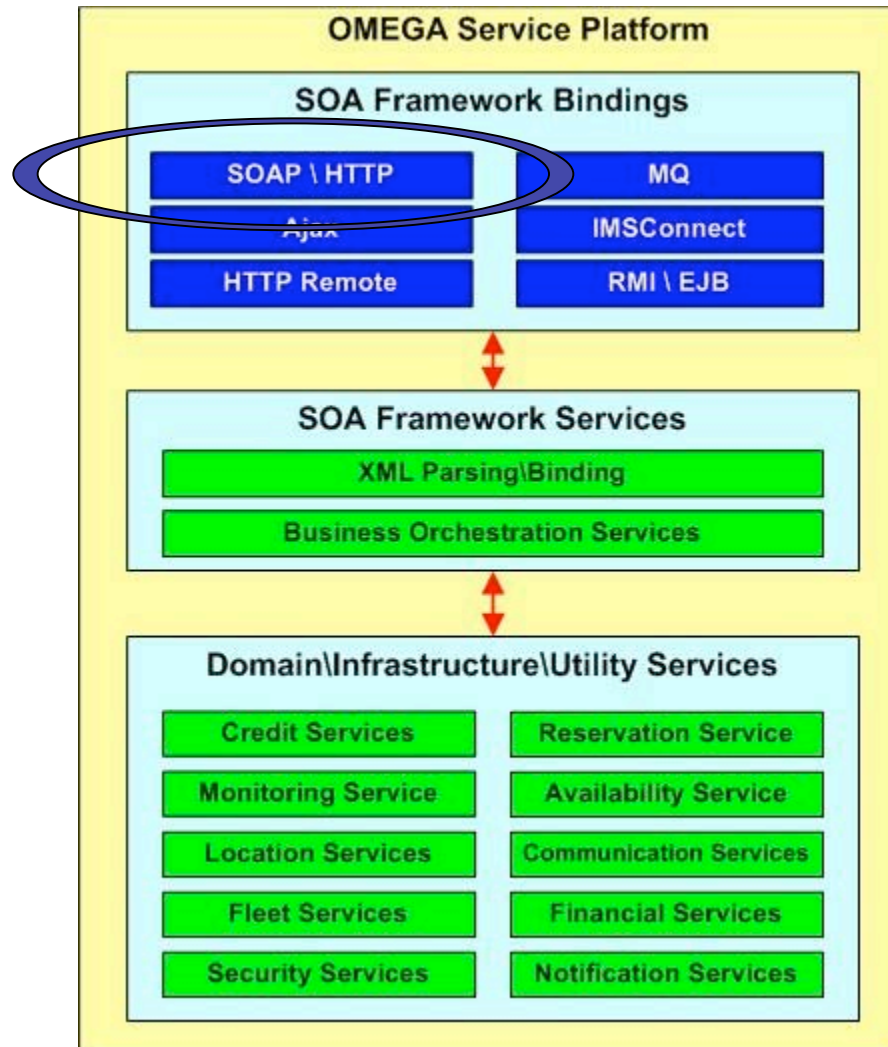


SOA Framework Logical View



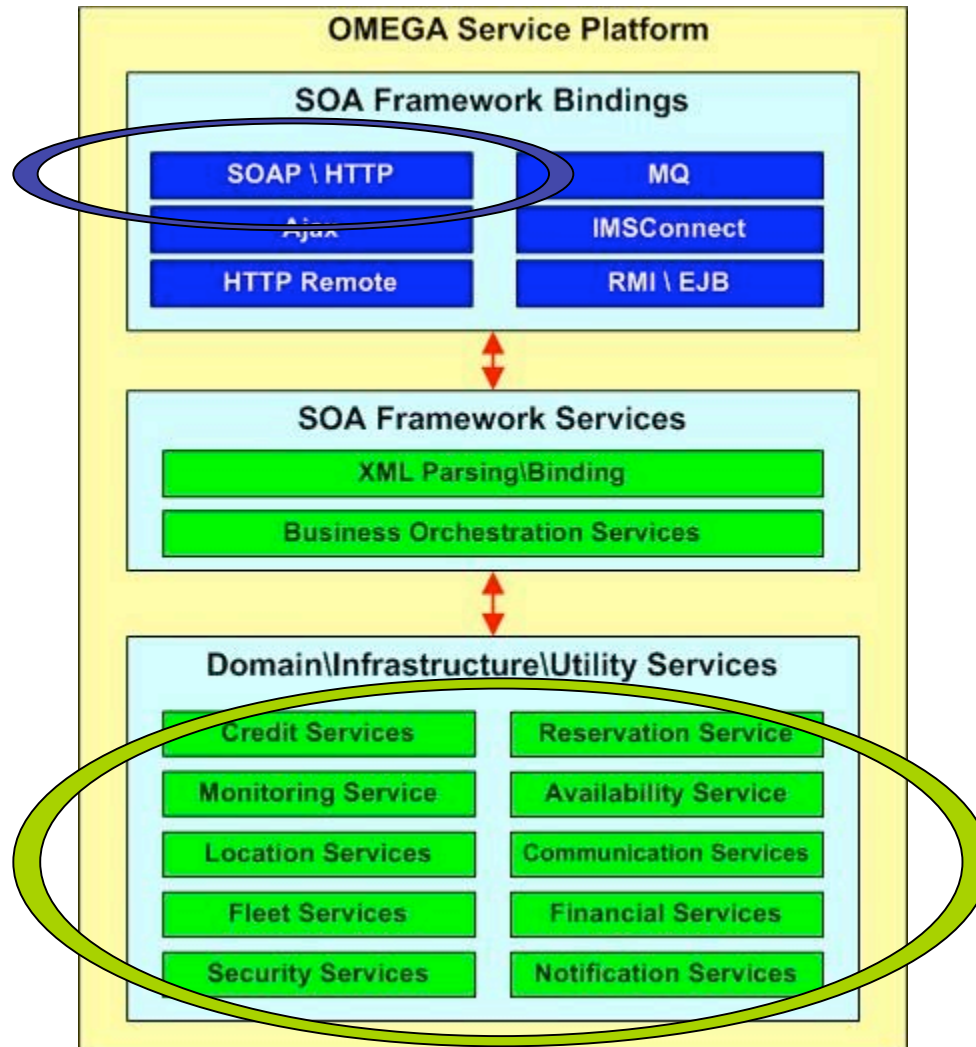
SOA Framework Logical View

Contract First



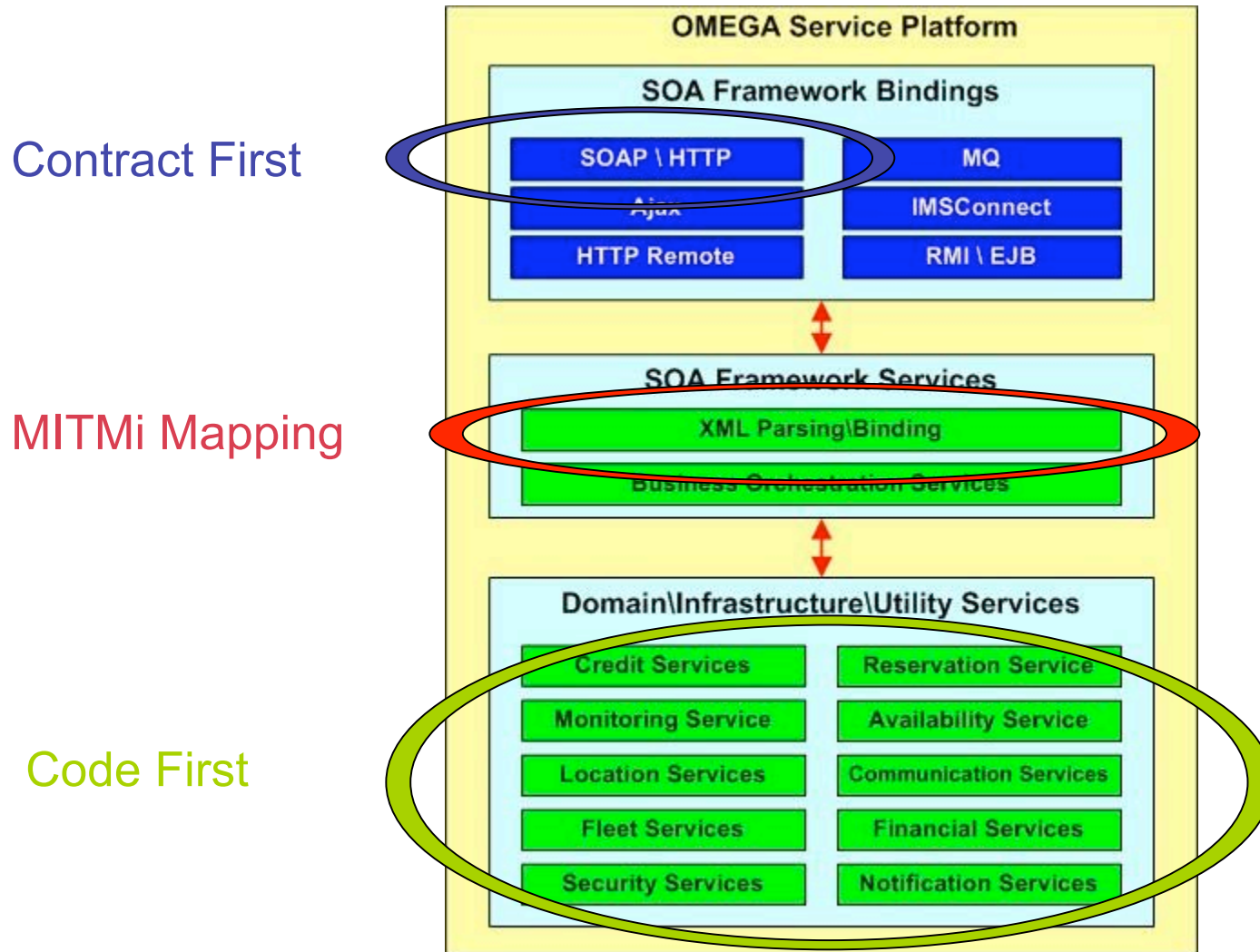
SOA Framework Logical View

Contract First



Code First

SOA Framework Logical View



Meet(Map) In The Middle (MITMi) Design

- Contract First Bindings
 - Data objects generated from WSDL\Schema
 - External view
- Code First Services
 - Input\Output data objects reflect business requirements
 - Avis Budget Common Business Objects
 - Internal view
- Mapping layer between the two (JiBX)
- Internal Service Interface
 - Java POJO
- External Service Interface
 - SOAP/XML + OTA or ???



Thank You



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