Parlay/OSA and Parlay-X
The Platform for Telecom Web Services

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- **Meeting the business needs of telecom customers**
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  - Parlay-X is a Platform for Telecom Web Services
The Motivation for Parlay/OSA

- Telecom operators have been faced with declining revenues, due to competition, regulation and the introduction of new technologies.
- A portfolio of new value-added services provides a way to increase revenues.

- There are not enough developers who can use the traditional IN service creation model, which is based on proprietary platforms and interfaces.
- Instead adopt the model of an open API (Application Programming Interface) which has been extremely successful in the IT industry.
The Parlay Group

Open Industry Consortium
Focused on defining an open network API to enable software developers (ISVs) to exploit the power of the telecoms network.

The PARLAY/OSA API is:
• an open API for the network
• defined top-down
• network technology independent:
  • fixed, mobile, Next-Gen IP, WiFi
• defines a boundary of trust between the enterprise and service provider

The Parlay Group
• open membership (75 companies)
• widespread cooperation & liaison:
  • 3GPP, OMG, JAIN, PAM, OMA
• 200+ products, 70+ deployments
• North America, Europe and Asia

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Parlay’s Technical Approach
The Specification of Open APIs for the network

- **Framework Interface Set** - Common Functions That Are Required to Enable Services to Work Together in a Coherent Fashion e.g.
  - Authentication, Discovery, Manageability
- **Transport interface**
  - CORBA, WSDL (Web Services)
- **Service Interface Set(s)** - Common Functions That Deliver Whole Complex Services or Sub-components of Services e.g.
  - Call Control, User Interaction, Content-based Charging, Location, Presence and Availability, Messaging, Policy Management, Quality of Service …
- **Resource Interfaces** - Interfaces used between a Parlay Gateway and network elements. **Not** specified in Parlay
The Motivation for Parlay X: Web Services for Telecom

• There is a requirement to publish the capabilities of the network for software developers

• There is a demand for enterprise applications to exploit the capabilities of the telecom network
  – The Real-Time Enterprise (Gartner)

• Web Services is a key software development technology:
  • **Parlay-X** defines a set of easy-to-use Web Services, which provide simple and high level access to widely used telecommunications functions
  • Third Party Call Control, Network Initiated Third Party Call Control, SMS, Multimedia Messaging, Payment, Account Management, User Status, User Location

Number of Developers

- **Parlay-X**: 3-5 million
- **Parlay/OSA**: 250,000
- **INAP, SIP**: < 10,000

Expressive Power
# The Parlay/OSA APIs

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Usage</th>
<th>Release</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parlay/OSA</td>
<td>Rich set of telecom APIs, for use in CORBA (C, C++) and Java environments. Several hundred methods.</td>
<td>Suitable for use by professional software developers. Suitable for a pre-paid application.</td>
<td>Parlay/OSA V 4.2 and 3GPP R5</td>
</tr>
<tr>
<td>Parlay Web Services</td>
<td>Mapping of the Parlay/OSA APIs to WSDL, for use in Web Services environment.</td>
<td>Suitable for use by professional software developers. Intended for developers who don’t have a CORBA or RMI infrastructure.</td>
<td>Parlay/OSA V 4.2 and 3GPP R5</td>
</tr>
<tr>
<td>Parlay-X</td>
<td>Set of high-level, simple to use telecom APIs, for use in a Web Services environment. 8 interfaces.</td>
<td>Suitable for use by web developers. Designed for use with IDE. Suitable for a ‘call-me’ button on a web page.</td>
<td>Parlay-X Version 1 (May 2003)</td>
</tr>
</tbody>
</table>
Where Are Standards Heading in the Market?

- The motivation for Web Services
- Parlay Adoption and Parlay-X version 2
What exactly is a Web Service?
It is a technology for creating modular distributed applications.

- A Service Provider (e.g., an Airline) describes a service (e.g., making a reservation) and publishes the description in a public registry.
  - The service is described using WSDL (web service description language).
  - The public registry is typically a UDDI (universal description discovery and integration) server.
- A user of the service (typically an application) finds a suitable service by sending a query to a public registry.
- … and then binds to that service so that the client application can use it.
  - The client application communicates with the server using SOAP (the Simple Object Access Protocol), which is in turn based on XML (the eXtensible Markup Language).
What is the Significance of Web Services for Service Creation in Next Generation Telecoms Networks?

- A significant investment is being made in Web Services technology in the IT industry. This makes Web Services a good technical choice as an interface technology for exposing network capabilities to mass market and enterprise application developers. They will need an Application Programming Interface (API) based on Web Services.
  - Note: Web Service Security will be important.
- The investment in Web Services in the IT industry means that software tools for working with XML and Web Services are widely available. Indeed it is very difficult to use Web Services without software tools.
- The generality and power of XML means that XML will increasingly be used as the basis of other telecoms standards efforts. For example expect ASN.1 to be replaced by XML applications.
- Aside: Some operators will probably operate a web services network.
Emerging Standards Linking Telecom and IT

- Next Generation Mobile
- Next Generation Fixed
- Internet (and Megaco, SIP)

Telecom

Joint Working Group

Parlay

- Parlay/OSA
- Parlay-X Telecom Web Services

Use of Web Services

Java Rulebook(s)

- Web Services Standards
- Java
- Integrated Development Environment initiatives

IT

3GPP, 3GPP2
OSA, IMS
OMA
ITU-T
IETF

W3C
WSI.org
OASIS
Axis
JCP
Eclipse.org

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Parlay-X Version 2

- Parlay-X Version 1 Specifications were published in May 2003
- Since then:
  - There have been over 20 implementations
  - A number of operators have created additional Web Services to complement Parlay-X
  - Parlay has been working on Version 2
    - Includes feedback from implementors of Version 1
    - Input from operators who have deployed services
    - New requirements
Where Are Standards Heading in the Market?

- The motivation for Web Services
- Parlay Adoption and Parlay-X version 2
The number of trial and deployments is increasing. More are remaining confidential.
• Tier 1 operators are well represented.

N=50
Reflects deployments and trials for which information to categorize is available
- Mobile operators lead in Parlay deployments and trials
- Over 1/3rd Parlay projects now involve fixed networks
EMEA is leading in Parlay deployments and trials, since many of the early Parlay/OSA projects were for GSM networks. Now Americas and AP are now catching up.
Parlay Eco-system is growing

We are also seeing “enabling” products that enhance Parlay/OSA
## Announced Parlay Products in 2004

Based on Press Releases, Vendor Literature and Conference Presentations (as at 13 May 2004)

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parlay/OSA Gateway</td>
<td>26</td>
</tr>
<tr>
<td>Parlay/OSA Application</td>
<td>76</td>
</tr>
<tr>
<td>Parlay-X Platforms</td>
<td>11</td>
</tr>
<tr>
<td>Application Server</td>
<td>20</td>
</tr>
<tr>
<td>Development Environment / SCE</td>
<td>12</td>
</tr>
<tr>
<td>Simulators and test tools</td>
<td>8</td>
</tr>
<tr>
<td>Specialised SCS</td>
<td>3</td>
</tr>
<tr>
<td>Developer Program</td>
<td>9</td>
</tr>
<tr>
<td>Analyst Reports</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
</tr>
<tr>
<td>Courses and Events</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>207</strong></td>
</tr>
</tbody>
</table>
Scenarios for Using Parlay

- There are a number of scenarios in which Parlay can be successfully deployed by an operator.

  - All are important.
  - The remainder of this presentation will focus on how to enable business customers and their applications.

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Implications for Telecom Operators

• Define a set of APIs that allow applications to access the network
  – e.g. BT, Sprint

• Develop and end-to-end value-chain, including software vendors and system integrators, to develop telecom-enabled applications and market them. (Decide which parts you want to own)

• Underlying this is the need for a service platform.
The Role of the Platform

- Parlay is a natural compliment to the transition within the telecom network
  - from a series of point solutions (or stovepipes) supporting individual services
  - to a horizontally layered architecture which supports multiple services with a common interface.

- Common infrastructure will reduce OpEx, through the use of common systems
  - management, provisioning etc.

- How to justify this investment?
Economic Justification for Platform

• The law of conservation of attractive profits

“The innovations for which customers will pay premium
prices become speed to market and the ability responsively
and conveniently to give customer exactly what they need,
when they need it. To compete in this way companies are
forced to employ modular architectures for products.
Modularity causes the products to become undifferentiated
and commoditized. Attractive profits don’t evaporate,
however.

They move elsewhere in the value chain. […] Improvements
in the subsystems drives the assembler’s ability to move
upmarket towards more attractive profit margins”

Clayton Christensen
HBR 2004
Economic Justification for Platform

• The law of conservation of attractive profits

“Formally, when modularity and commoditization cause attractive profits to disappear at one stage in the value chain, the opportunity to earn attractive profits with proprietary products will usually emerge at an adjacent stage.”

Christensen
Innovator’s Solution, 2004

Source: Christensen, OSBC 2004

To apply this principle in telecommunications, consider the specific value added services provided by operators as the source of attractive profits based on the modular architecture of Open APIs and Service Delivery Platform.
Conclusion
Conclusion

• Parlay provides a way for telecom operators to publish the capabilities of their networks to enable business applications, and is already deployed by operators from around the world and across network standards.

• There is already a global developer base for Parlay applications, which is fast being expanded by Parlay-X Web Services developers.

• There is value for businesses in augmenting OSGi based applications with telecom capabilities, and there is value for operators by enabling this. Parlay is the open telecom standard that can make this happen.

• Visit www.parlay.org for more information on Parlay.
Thank You
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