Parlay Powered Network Gateway

Service Network Solutions

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ICT-OSA/Parlay Workshop 2006
São Paulo/Campinas, Brazil, 21-24 March 2006
Headquartered in Belfast, Northern Ireland
- Offices in Ireland, England, Germany, Malaysia, Taiwan, & US
- Dedicated team of 125+ people
- Strong telecoms engineering and delivery capability

Strong standards involvements
- On Parlay board
- Chair of 3GPP CT5

Focus is on future proof value added service enablement
- Network gateway for value added services
- End to end solutions
- Convergence
  - SS7, SIP, FMC
- Real-time
- Web services
- Exploiting power of modern IT technology

AePONA has proven track record in telecoms service enablement solutions
- Aepona’s Causeway™ network gateway commercially deployed today in over 25 mobile and fixed operator networks worldwide.
  - OSA Parlay/Parlay X Gateway
  - Service Interaction Management
Aepona Service Enablement

Network Equipment Vendor Independent

Service Domain

Applications

Service Domain

IT Infrastructure

Network Gateway

Aepona Causeway™

Service Interaction Management

Network Domain

Parlay

Gateway

Parlay-X

Aepona Causeway™

SIP

IP Packet switching (IMS)

SS7

Traditional Circuit switching

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OSA Parlay/Parlay X Gateway

- Carrier grade availability
- High performance – >1000s t.p.s.
- Complete set of service capabilities
  - All major variants of INAP (Ericsson, Nokia, Alcatel, Siemens, Huawei, Nortel, etc)
  - SIP
  - Messaging, presence, location, charging, etc, etc
- Full framework support (4)
- Integrated Parlay(-X) web services gateway

Development support

- Parlay Client Proxy (for Oracle, BEA, IBM, JBoss, and others)
  - Resource adaptors for J2EE, J2SE and J-SLEE
- Gateway emulator

Service interaction management

- Enabling new services to co-exist with old
- Bringing services to pre-paid subscribers

End to end solutions in mobile, fixed & converged networks

- Wide range of application and development partners
- AePONA has proven track record in telecoms service enablement solutions
  - Solutions widely deployed in operators worldwide
Some Causeway Commercial Installations

- **FT Group & Orange SA**
  - Centralised service network environment
    - VPN and other VASs
  - Examples
    - Orange MDSP and Orange UK
    - Centertel (Idea)

- **KPN - Holland**
  - Retail and wholesale services

- **Sprint (BMF) - USA**
  - Enterprise services
  - Parlay X

- **Bridge - Asia**
  - Network API for Common Access Gateway
  - Parlay/Parlay X web services

- **E-Plus - Germany**
  - Call completion services
  - Red-key service

- **TIM - Italy**
  - Part of Fortuna TIM (gambling on free/premium calls)

- **NTT (VoIP) - Japan**
  - Next generation API. Conference calling in IP network

- **Eircom - Ireland**
  - VAS service API
    - E.g. Internet call waiting, PO box (temp number)

- **Vimpelcom (Beeline) - Russia**
  - VAS service API
  - Converged charging

- **A.n.other (western Europe)**
  - Virtual PBX solution

Causeway integrated with all major switches - Ericsson, Nokia, Alcatel, Siemens, Huawei, etc
Parlay X Web Services in the SDP - Examples

**Sprint.**

- **Business Mobility Framework (BMF) – enabling real-time enterprises**
  - Through Parlay-X and orchestrated web services
  - Range of blue chip enterprise customer consuming the services through their existing CRM and ERP applications

**Bridge mobile alliance**

- **Large regional mobile alliance in Asia**
  - Aims to create ubiquitous services for all member company subscribers deployed & managed centrally

- **Using Causeway Parlay/Parlay X as primary application interface**
  - Messaging (and gaming) in phase 1
  - Expanding to other capabilities, such as call control solutions
Is all about Service Solutions

Voice Services critical to Telecom Operators’ Strategies
Will continue to account for 75%+ of Revenues

- **Increase Value Added Service Revenue**
  - From new innovative services
  - & flexible charging control

- **Enhance user control**
  - Enterprise control
  - Individual control

- **Increase customer satisfaction**
  - & increase call completion rates

- **Exploit new technology**
  - IP and the IMS
  - New call control capabilities cheaply
  - Messaging, Location, presence, etc
Service Applications (voice & data)

Network Enablers with Open, Standard APIs

Customers
- Enterprise & SoHo
- 3rd Party

Brokered
- Partner

Service Providers
- VNO

In-house
- Local
- Group

End Users

Increasing importance of 3rd party, enterprise, SoHo & mass market services
AePONA Proposition - Total Service Enablement

- New Service Architecture Real-Time
- Convergence & Migration to IP (IMS)
- Telecoms Web Services Parlay X

Parlay  Gateway  Parlay-X

Aepona Causeway™

Service Interaction Management

SS7  Network Assets  SIP
Total Service Delivery

- **Exploit modern IT technology**

**Network Capabilities**
- Parlay X Telecom Web Services
- Parlay
- Causeway™ OSA/Parlay Gateway
- SS7
- SIP

**Applications (Web Service Clients)**
- Business logic
- Brokering
- Policy
- etc

**Service Delivery Framework**
- System Integration
  - PX Services

**Real Time Service Applications**
- (typically in House)

**IT Support Enablers**
- Charging & Billing

**Underpinned by**
- Parlay APIs & Web Services
  - (SIP enabled)

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Importance of Common VAS API

Co-existence of IMS and traditional circuit switched resources

- Services requiring both circuit switched and IMS based resources
  - Control needed in both – blended services
- Services requiring additional, non-call related resources.
- Service capabilities can be deployed using either circuit switched or IMS (SIP) based, e.g.
  - Voice mail
  - Called party ring tone
  - Conference facilities
  - Call centres
  - Virtual PBX
  - Presence

Migration is the IMS Killer Application

Voice
Enhanced Voice Services

There are a wide range of independent application developers
- Aepona has many application partners with a wide range of solutions

- VPN (traditional and mass market)
- Advanced call completion services
- ‘Red Key’ services
- Missed call notification
- Inbound call management
  - Click to dial
  - Click to conference
  > presence sensitive

- Virtual (mobile) PBX
- Multi-channel tele-voting
- Location based services
- Ring back tones
- Mobile CCBS
- Reverse charge calling
- Call centre routing solutions

- e.g.
  - Called user redirect
Example - Mobile Called User Redirect

Capability to allow subscriber to transfer an in-coming call to a 3rd party from her handset, like on a PBX

Without tromboning through her handset

Subscriber can put caller on hold, dial another number and, when answered, can transfer the original call or have a three-way call between all parties

- Augment other services, e.g.
  - vPBX, Business groups
  - Family and friends
  - etc

- Exploit IP capabilities
  - SIP & IMS
  - Simple, cheap multi-leg call control
  - Blend circuit switching and IMS

Example of Solution Blending IMS and Circuit Switching Powered by Parlay
Called Party Redirect (User’s Perspective)

1. A calls B
   Call answered

2. B puts A on hold

3. B calls C
   Call answered

B can swap between A & C, using handset

4. B joins A & C using a key press (5)
   B drops out of call, or continues in 3-way conference (depending on which key pressed)
How it Works (simplified)

1. Call to B from A
2. Call from B to C
3. Call from B to C
4. Appropriate key-press from B
5. B hangs up call from A
6. Transfer call from A to SIP domain.
7. Call to C from A
8. Drop B leg of B-C call (optional)
9. Join A to C

Blends SIP and SS7

Common Parlay API
## Example of Service Features

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<td>Group Hunt</td>
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**What service features do your customers need?**

**Can you make them available to your pre-paid subscribers?**
Typical Relative Value Added Service Revenue

- Clear correlation between available services and ARPU

- Pre-paid subscriber don’t have the same access to services
  - Reducing ARPU from this sector

What service features do your customers need? Can you make them available to your pre-paid subscribers?
Prepaid service cannot take account of charging information provided by VAS application.

Service, therefore, not available to pre-paid subscriber base!
Service Interaction Management

✅ Handles interactions between multiple service applications, acting on the same trigger points
  - Acts as single service control point (AS) to switches (MSC/SSPs or CSCFs)
  - Acts as proxy switch to applications
    • Including protocol mediation (INAP/CAP, SIP, etc)

Applicable to IN (INAP/CAP) and to SIP

Switch C-SIM

Pre-Paid Value Added Service Apps

✅ Removes deployment restrictions
  - Increasing service availability and, hence, revenue
  - Enabling exploitation of Parlay
Service Inter-working Example

- Manage interactions between services
  - including charging

- Service available to all users,
  - including the valuable pre-paid sector!

Call → Switch

1. Invoke (dialled number)
2. Invoke (dialled number)
3. Connect (number) + Charging Information
4. Logic to apply prefix to translated number based on charge information
5. Invoke (Tariff-prefixed number)
6. etc
7. etc

Pre-Paid application

Parlay VAS application

C-SIM
Enable multiple applications and platforms to share the same IN trigger
- IN interaction Management (INIM)

And/or SIP Invite
- IMS Service Capability Interaction Manager (SCIM)

Protocol adaptation
- IN, CAMEL, SIP
- IM SSF

Service feature brokering
- Filtering criteria
A collection of VPN sub-applications, including:

- Home zone
- Office zone
- Short calling
- Hunt groups
- On-net CLIP
- Call barring
- Universal number
- Personal Number
- Advanced charging

In-bound roamer voice mail:

- Virtual Home Environment

Other IN Applications i.e. Pre-Paid

Deployment Example – Orange Poland

SS7 INAP/CAP

For post- and pre-paid customers

New Parlay Applications

Appium

Parlay

Parlay / Parlay X Gateway

Causeway

C-SIM (Service Interaction Manager)

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Aepona’s Causeway™ Network Gateway

Enabling Service Solutions for Tomorrow’s Networks

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