

Services Exploiting SOA and Web Service Technology in Modern Telcos

James Aitken
Aepona

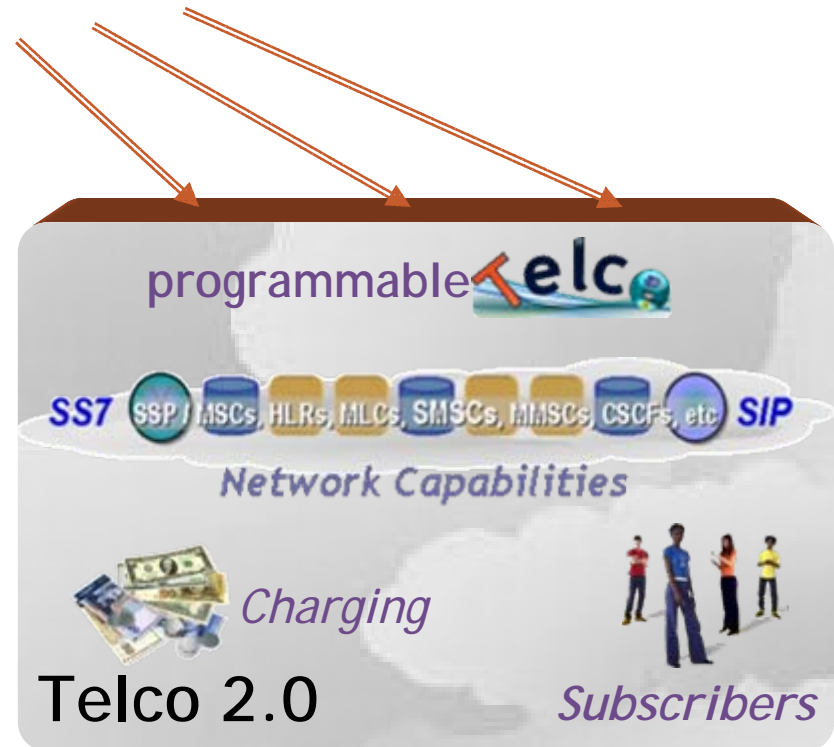
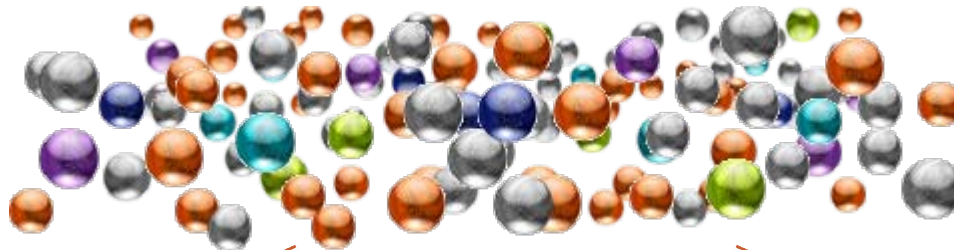
Open Standards Forum 2008:

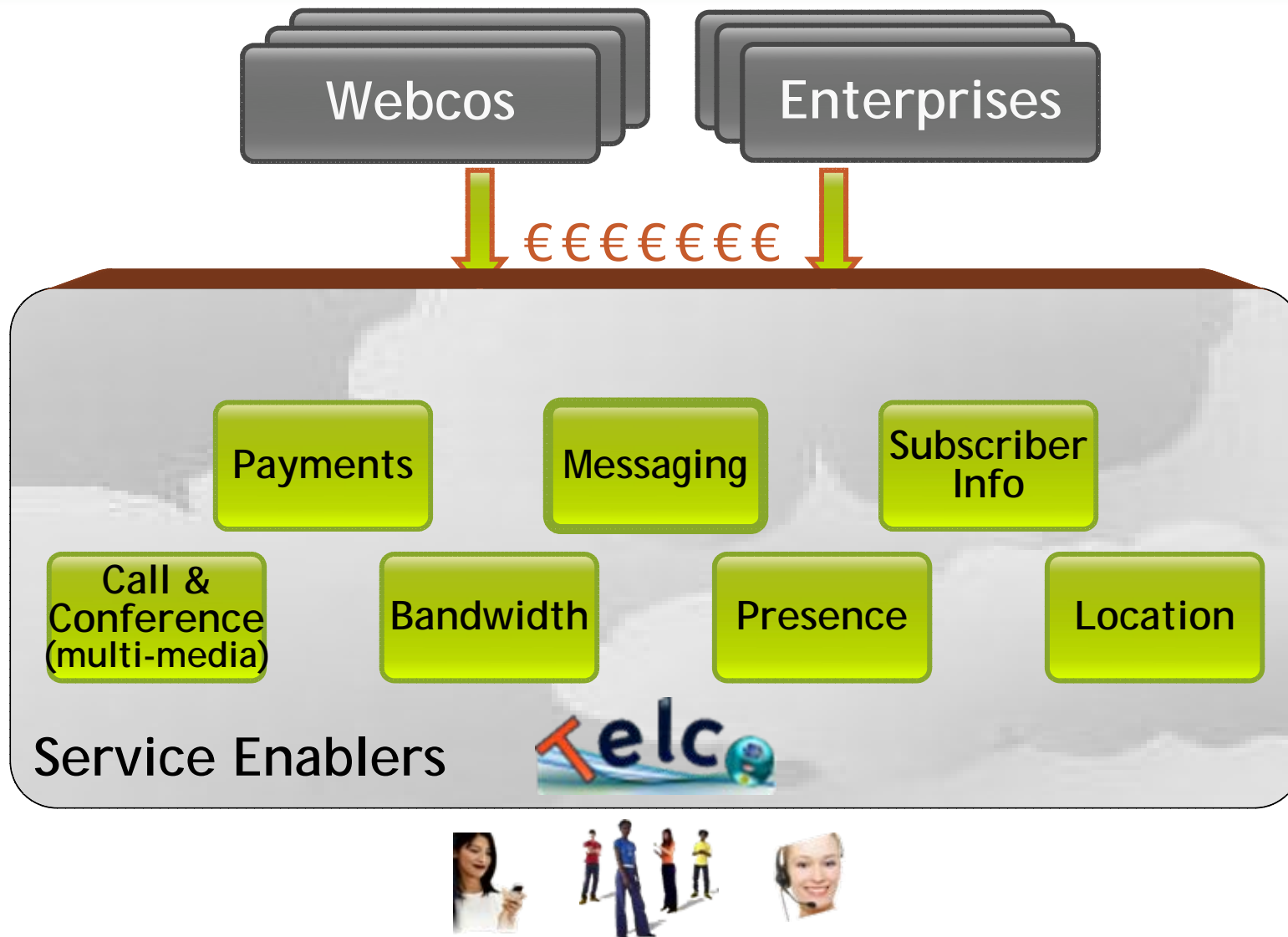
Security Challenges for the Information Society

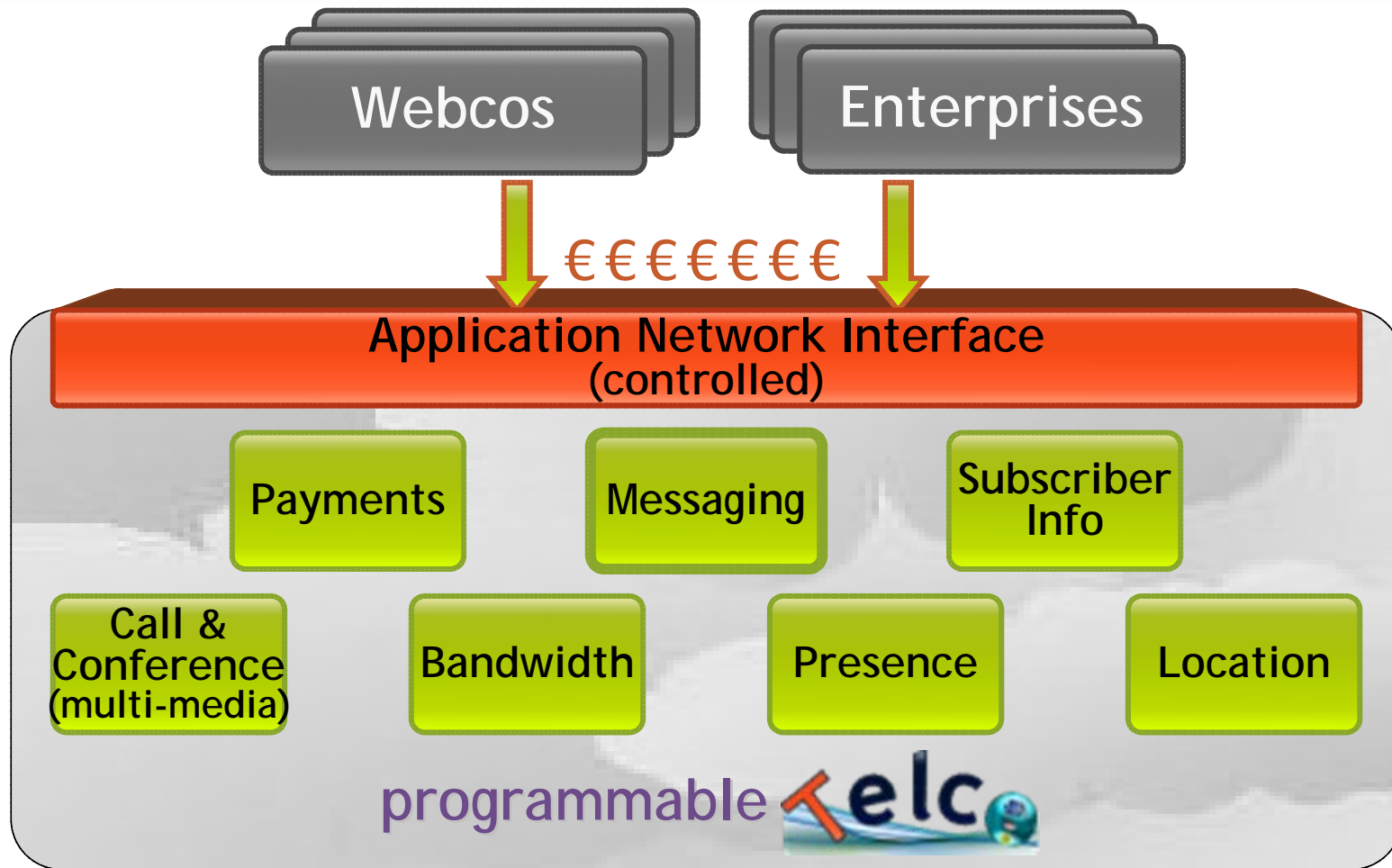
30 September - 3 October | Ditton Manor, Near London



3rd Party Applications Communications Enabled Business Processes







Telco Insertion into the Value Chain - Communications Enabled Business Processes

Three 'killer' capabilities

- Contextual presence, location, etc
 - Dynamic
- Flexible media and conference switching
 - Calls, video, etc
- Intelligent notification services
 - Multiple communications channels
 - Voice, SMS, email, etc



**Managed & controlled
Telecom Web Services**

AND

- Subscriber
 - Payments/charging
 - Information

- Web services are the modern standard for development of distributed user applications

- Use of web services consistent with IT world
- SOAP/XML based realisation of an SOA
 - Service Oriented Architecture
- Basis for web 2.0

Understood by
100s of 1000s of
today's web and
IT programmers

- Web Service benefits

- Flexibility
- Simplicity
- Industry Support
- Powerful tooling available

The future of service creation

Much lower development
and customisation costs

Easy to Secure
Open Service Environment

- Standard Telecom Web Services

- 3GPP / 3GPP2 standards
 - 3GPP TS 29.199
 - known as Parlay-X
 - Adopted by OMA & GSMA
- Hide telecoms complexity

A set of *Web Services*,
which provide secure,
high level access to
widely used
telecommunications
functions

1. Common definitions

2. Third party call
3. Call Notification
4. Short Messaging
5. Multimedia Messaging
6. Payment
7. Account management
8. Terminal Status
9. Terminal location
10. Call handling
11. Audio call
12. Multimedia conference
13. Address list management
14. Subscriber Presence
15. *Message Broadcast*
16. *Geo-coding*
17. *Application-driven Quality of Service (QoS)*
18. *Device Capabilities and Configuration*
19. *Multi-Media Streaming Control*
20. *Multi-Media Multi-Cast Control*

3GPP TS 29.199
(ETSI ES 202 391-n)
known as Parlay-X

Exploiting Network Capabilities

More being defined

Standards continually enhanced by 3GPP/OMA as requirements for standard web services are identified.

Real uses cases are identifying granularity and enhancement requirements.

EXAMPLES

Enterprise / Public Sector

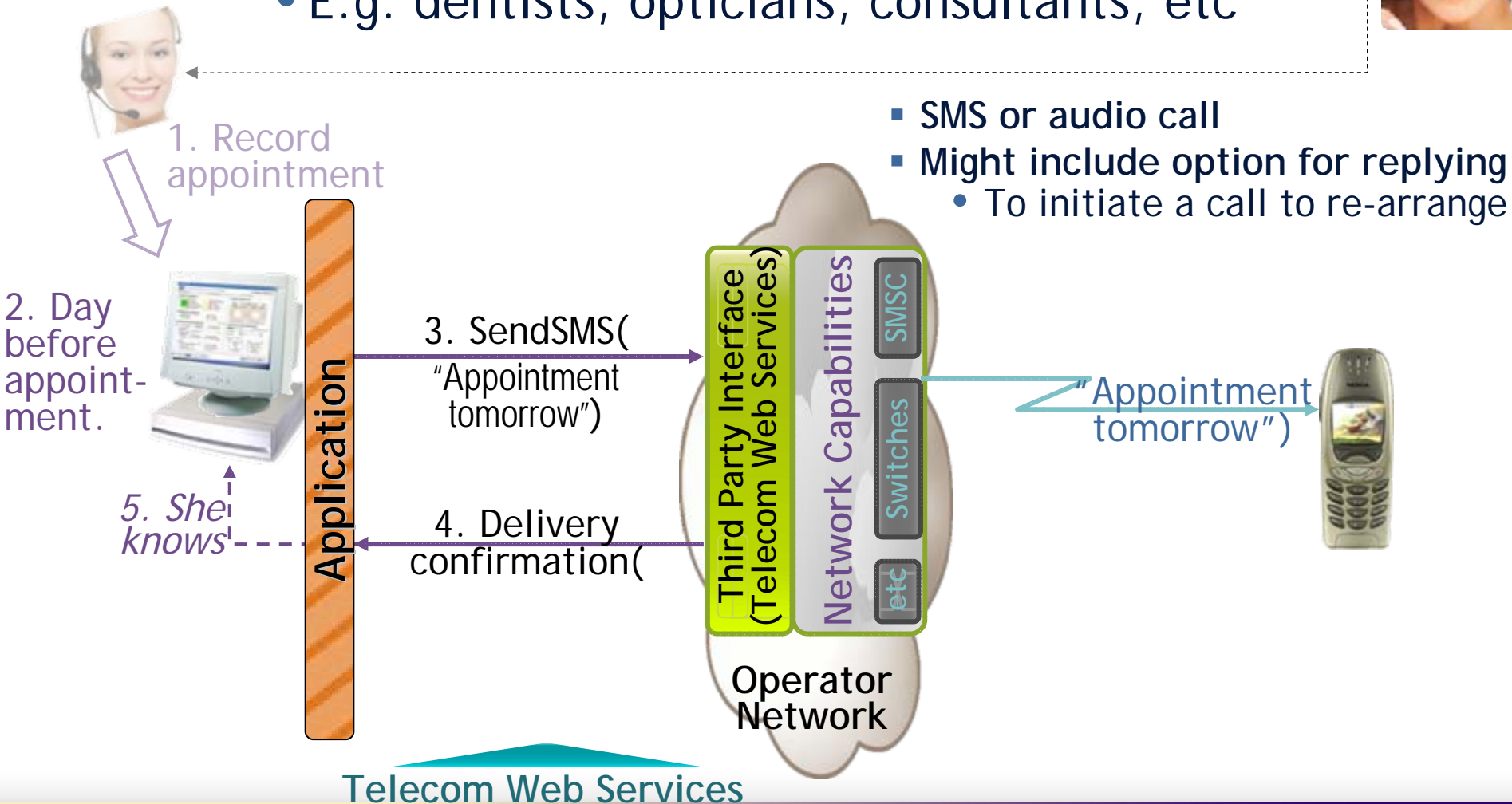
- **Communications (Telco)**
Enhanced Business Processes
 - Workflow Management
 - Logistics & Assets management
 - Address book click-to-dial etc
- **Advertising / Marketing**
 - Providing branded Widgets to increase reach & improve lead generation
 - Targeted campaigns with high-value "click-to-action" calls
- **Voice 2.0 Services**
 - Adding value to existing voice services, such as context-aware call routing
- **Professional, Healthcare, Delivery, Maintenance, etc**
 - Automated appointment reminders with call-back

Consumer / Web 2.0

- **Social Networking**
 - Adding real-time communications features
 - Adding context-awareness (location, presence)
 - Anonymous calling
- **Location-based services**
 - Family / friends locator
 - Child security is a growing service
 - Services finder
 - Promotions
- **Long Tail / Web 2.0 applications**
 - Network as a Service
 - Many application categories
 - From widgets to community-based services
 - Meeting local needs
 - 1000s of applications
 - Sprint has 500 ASPs using its APIs

Computer to Person Communications

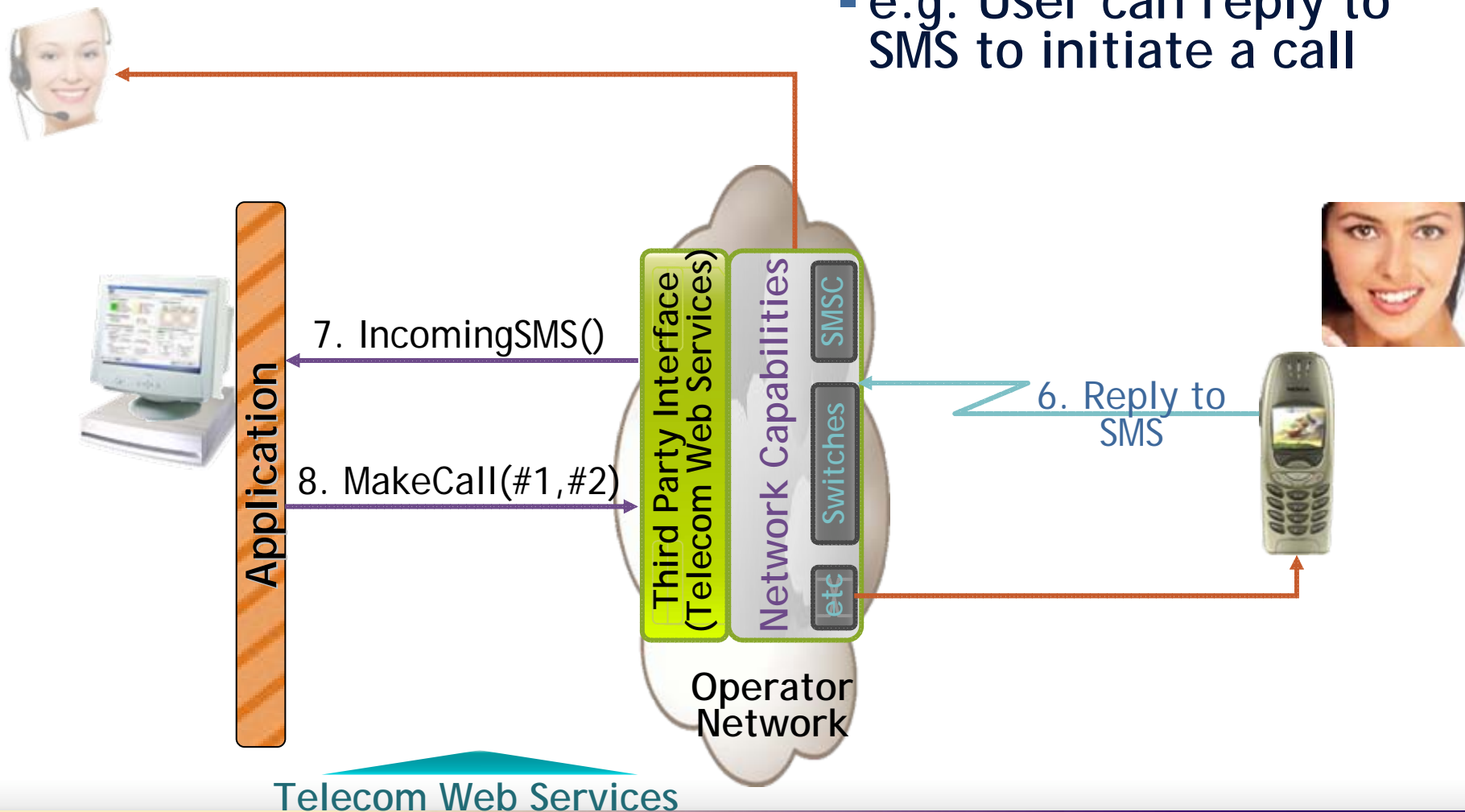
- Automated appointment reminder
 - E.g. dentists, opticians, consultants, etc



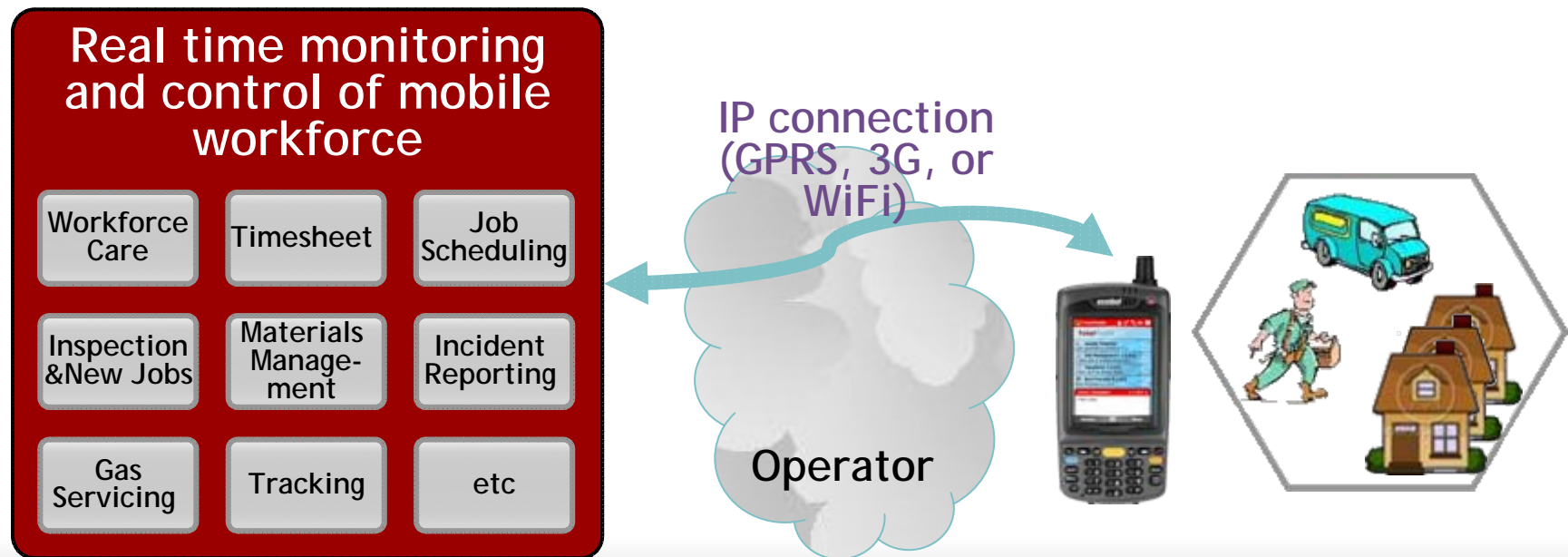


Computer to Person Communications

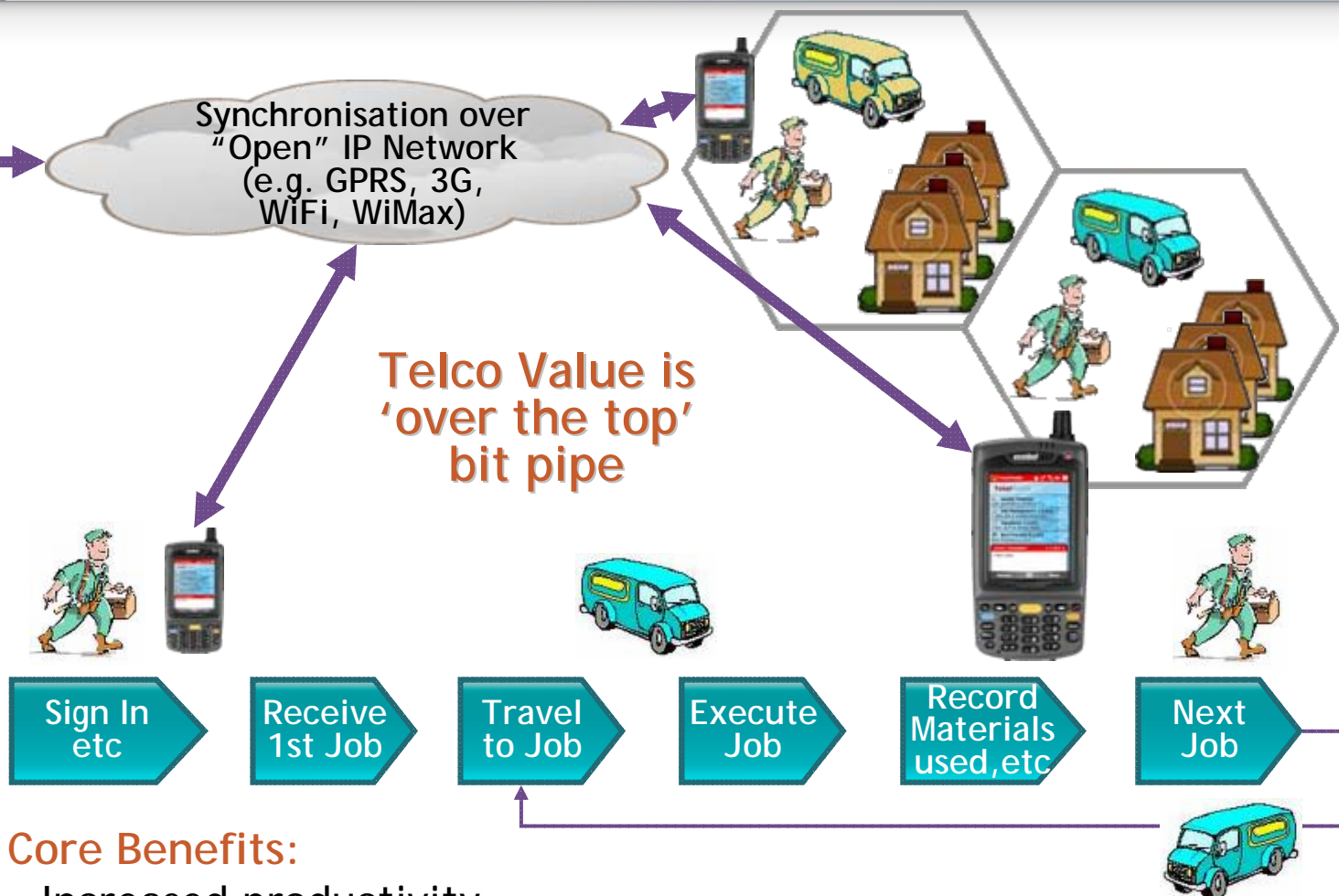
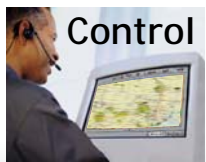
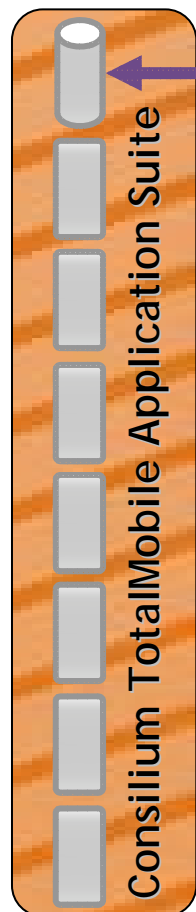
- e.g. User can reply to SMS to initiate a call



- Typically managing 10,000 - 20,000 properties
 - Ad hoc maintenance and repairs
 - Safety inspections (gas)
 - etc
- Specialised application developed by **CONSILIUM** technologies
www.ctechs.co.uk
 - TotalMobile



CONSILIUM technologies



Core Benefits:

- Increased productivity
- Reduced costs
- Improved, more agile service
- Better management information
- More informed control centre



- Appointment reminding - message to household/contact reminding of appointment, with options to reschedule.
 - Audio call, with DTMF interaction
 - SMS with delivery confirmation, response options for automatic call set-up



- Calls from operative to customer, e.g. to confirm they are in or to say they are late
 - 3rd party call as from control centre
 - Anonymity for worker
 - Householder may not answer if call not from known number

- Avoiding time lost if occupant isn't in
- Semi-automated rescheduling
- Improved efficiency
 - More jobs / day
- Improved customer care
- Cost reduction

Call
Set-up &
Control

Messaging

- Basic presence - handset turned on
 - Otherwise application can only detect active sign-on by worker



- Real-time approximate location
 - Handsets are GPS enabled, but often not connected over IP
 - GPS coverage often very poor & slow
 - GPS drains batteries



- Messaging
 - Reliable real-time communications to/from workers



- Workforce care
- Presence

- Dynamic, automatic job scheduling
 - Cost reduction

- Information transfer
 - E.g. availability of materials with other workers
- Simple messaging

Messaging

Presence

Location

Some Examples out of 1000s

Enterprise / Public Sector

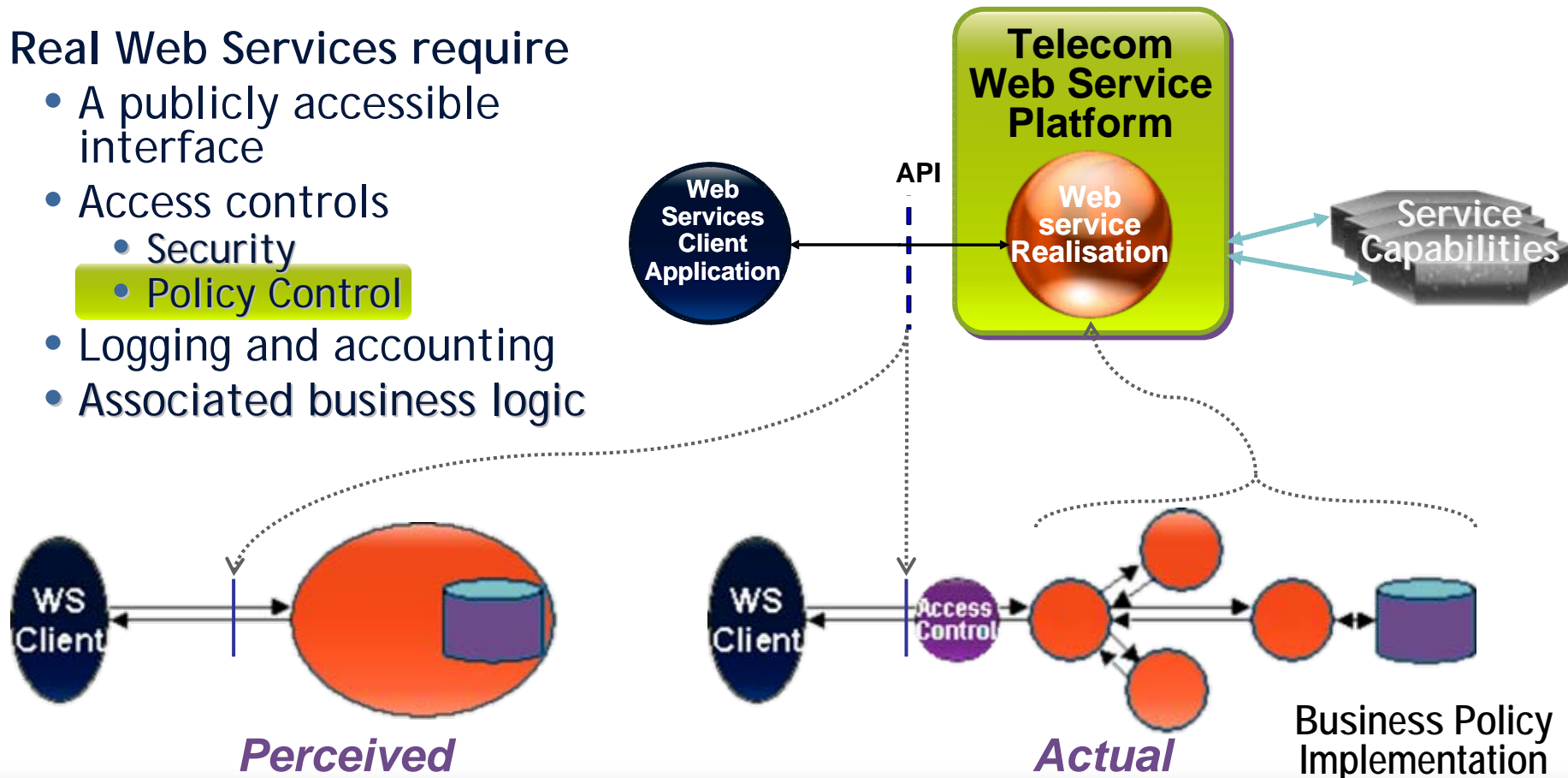
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- Web service definitions defines the external view (interface) of the web services
 - The definition does not define a web service implementation

- Real Web Services require
 - A publicly accessible interface
 - Access controls
 - Security
 - Policy Control
 - Logging and accounting
 - Associated business logic



- Premium content requested by SMS (e.g. streamed video)
 - Requesting SMS considered auditable request for service
- Users' identity hidden from service provider

Mobile Originated SMS	a)	Hide identity of user (and record request) – a special web service;
	b)	Send modified message to the ASP (standard SMS-X web service).
Initiate Video streaming	a)	Restore user identity. If this is not possible then reject the request;
	b)	Initiate video streaming;
	c)	If successful, invoke the charging service.

- Similar policy might be applied if application did a location request
 - Protecting users' privacy

**Simple web service 'orchestration'
SOA within the exposed Web Service**

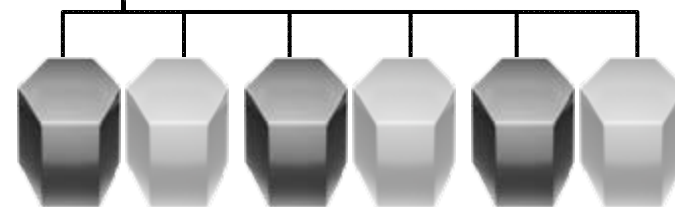
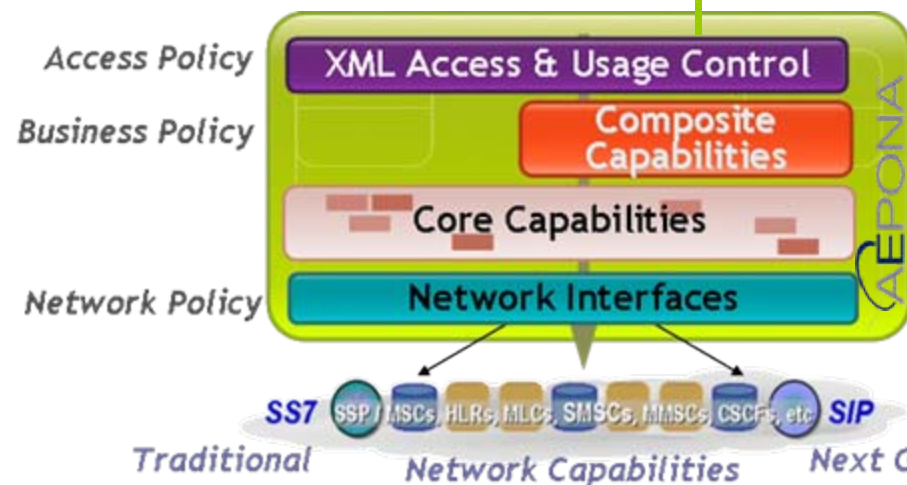
- SOA service creation, mash-ups, etc use telecom web services
 - External, applications
 - Telecom enabled by *telecom web services*



Secure, Open

Telecom Web Services

Network as a Service



Other Web Services
(capabilities)



- Headquarters in Belfast, Northern Ireland, UK
Offices in US, Canada, Sweden, Ukraine, Russia, France, Germany, etc
- Over 170 employees
- Providing a complete service evolution solution to new and established carriers

Enabling Telco 2.0 business models through Telecom Web Services

Account settings | Log out

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