

let's move
the **java** world

Building Mobile Apps using Network Assets

Douglas Tait - Oracle

Marcin Nowak - Orange Labs



Panel discussion ... group thought!

12:40 - 13:30	Lunch Break			
13:30 - 14:30	Trisha Gee What do you mean, backwards compatibility?	Leonid Igonlik Machine learning for a busy developer	Grzegorz Kossakowski Type safe JSON using Scala Macros	Shaun Smith Java Persistence From NoSQL to HTML5 (and Back)
14:30 - 14:40	Break			
14:40 - 15:40	Sławek Sobótka Model is all you need	Lars George HBase - Advanced Concepts	Douglas Tait, Marcin Nowak Building mobile apps using network assets	Stefan Tilkov Web development you are doing it wrong
15:40 - 16:00	Coffee Break			
16:00 - 17:00	Discussion panel Using the Network to build compelling application	Steve Millidge Big Data or Fast Data?	Sam Newman Surfing The Event Stream	Oleg Zhurakousky High Speed Continuous & Reliable Data Ingest into
17:00 - 17:10	Break			



www.openmiddleware.pl

Open Middleware 2.0 community & concept



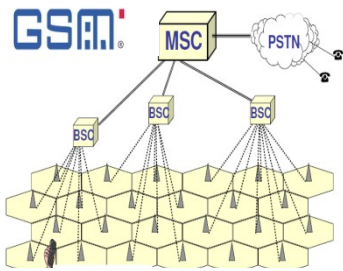
Douglas Tait
Oracle

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COMMUNICATIONS

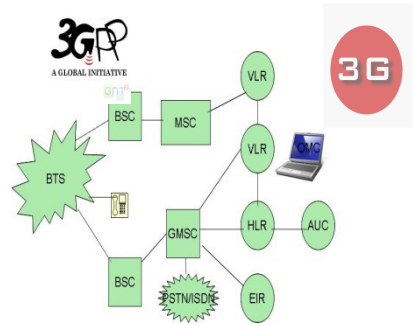
Marcin Nowak
Orange Labs



Network Evolution



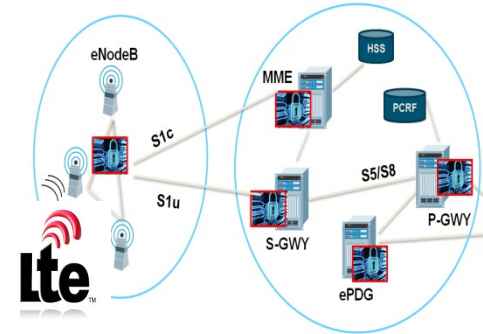
2G



3G

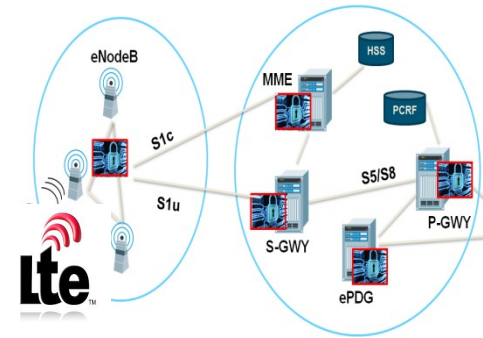
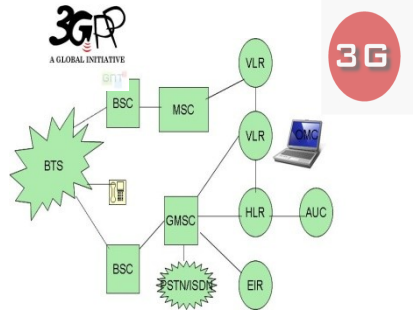
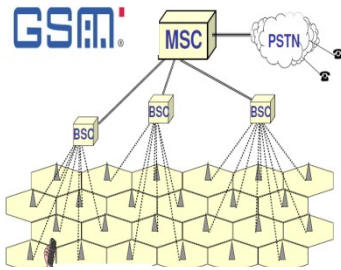


IP

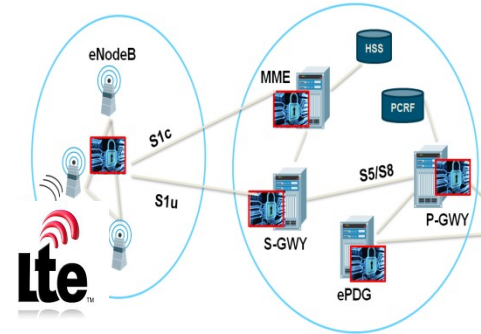
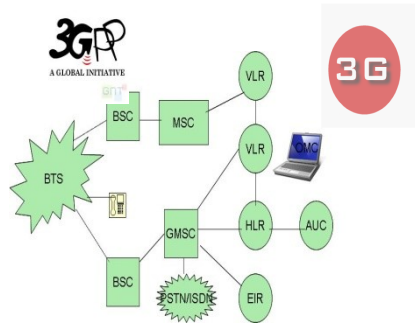
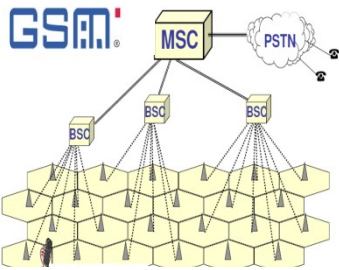
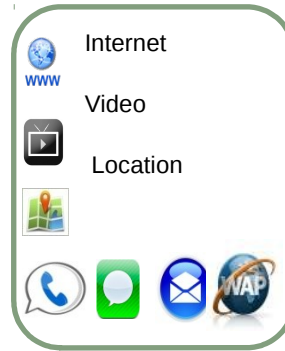
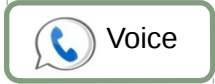


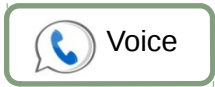
4G/LTE

Access Evolution

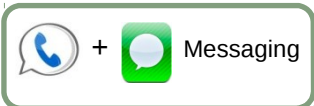


Service Evolution





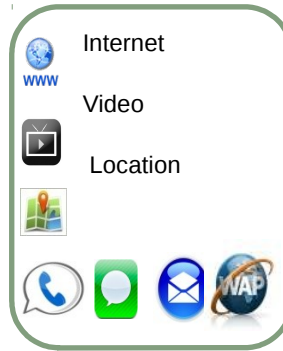
Voice



Messaging



email + WAP



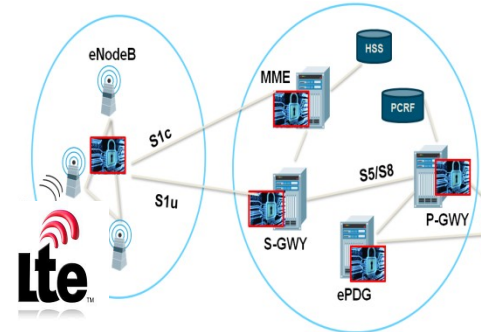
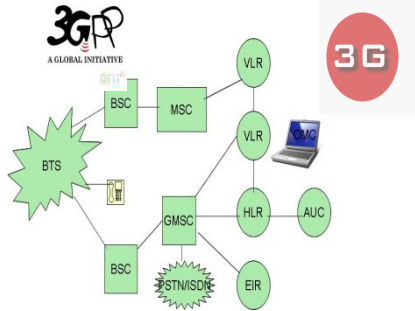
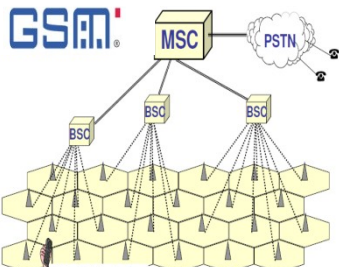
Internet

Video

Location



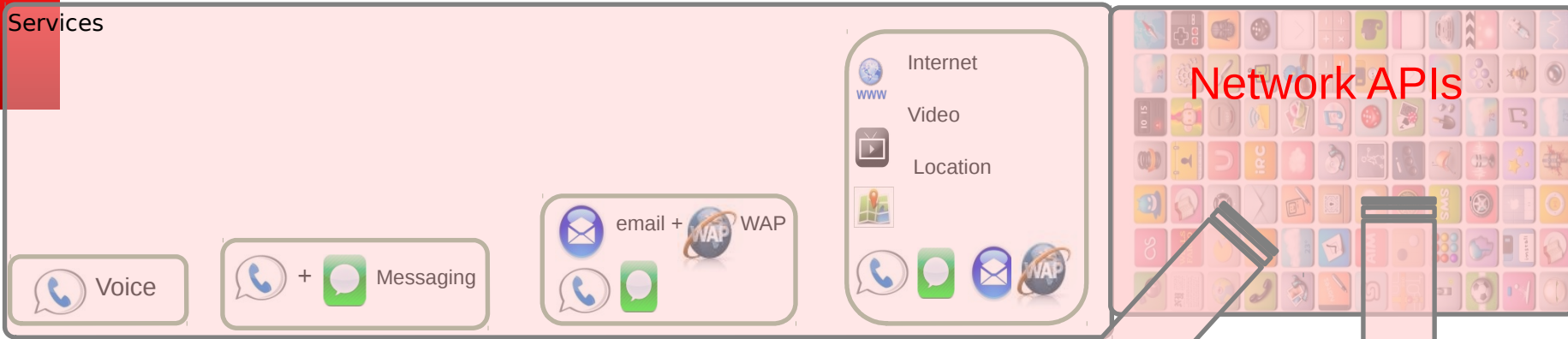
Network to Services



Access to Network



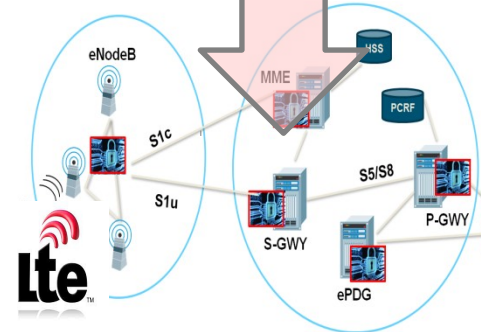
Services



Network APIs

Network to Services

Networks



Access to Network



APIs as a Strategy

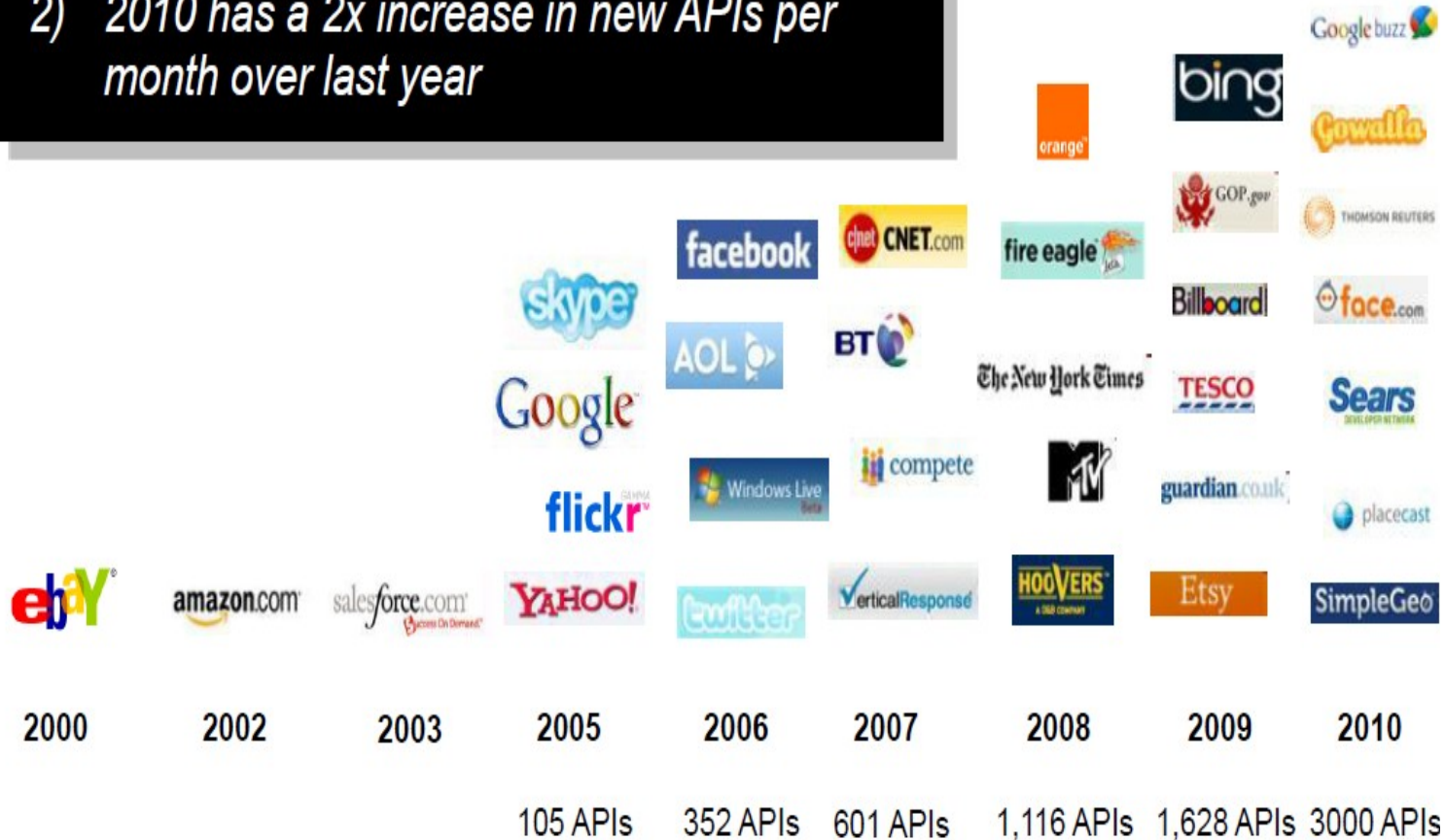
APIs are the Cloud Glue by definition

- Extend platform reach
 - 60% of all listings on eBay.com added via their APIs
- Enable self service and automation
 - SmugMug saves > \$500K/year with Amazon S3 Storage
- Capture eyeballs, build brand
 - Google Maps 300% growth vs 20% MapQuest
- Go anywhere, client adaptation
 - Netflix now available on over 250 devices



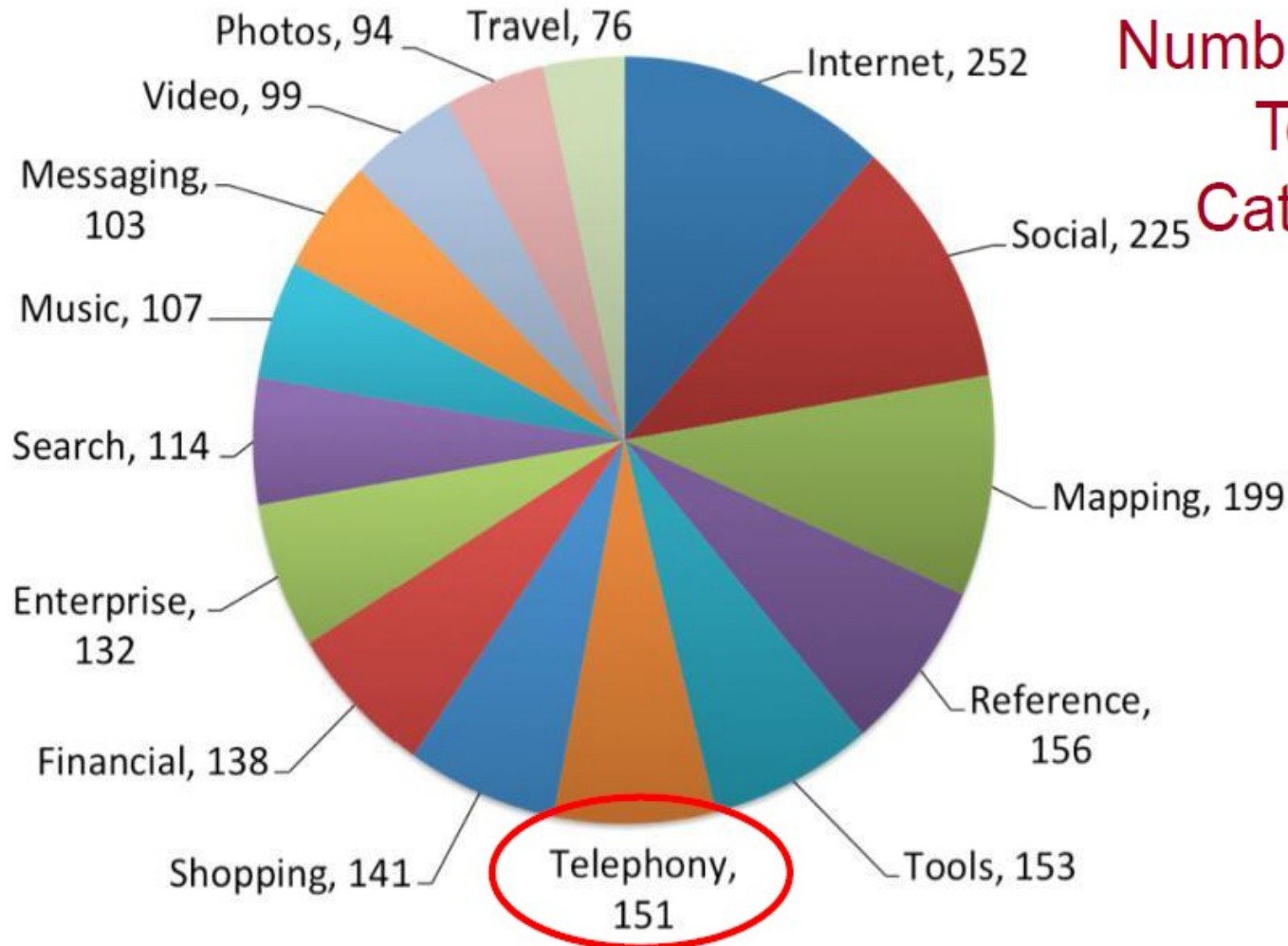
Exposure - API Timeline

- 1) It took 8 years to get to 1,000 APIs, but only 18 months to get to 2,000 APIs
- 2) 2010 has a 2x increase in new APIs per month over last year



Exposure

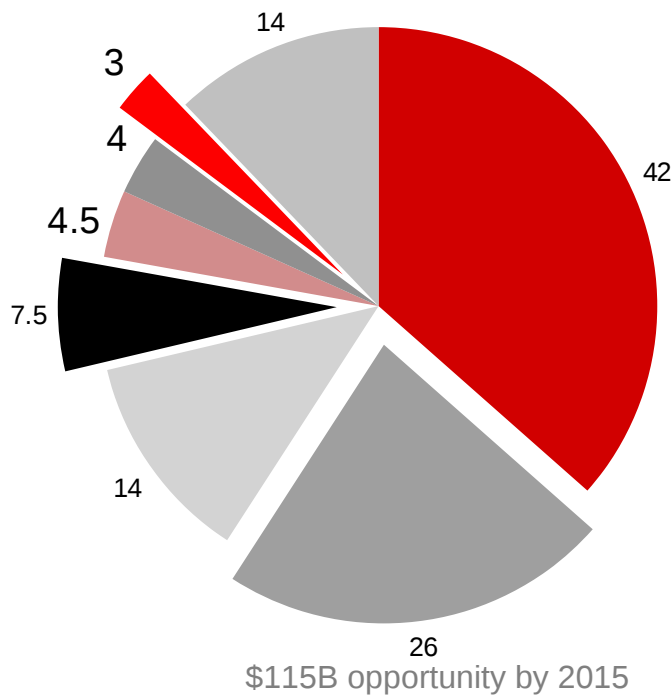
API Landscape



Based on directory of 3,200 web APIs listed at ProgrammableWeb, May 2011

Mobile API industry

API Revenue Opportunity

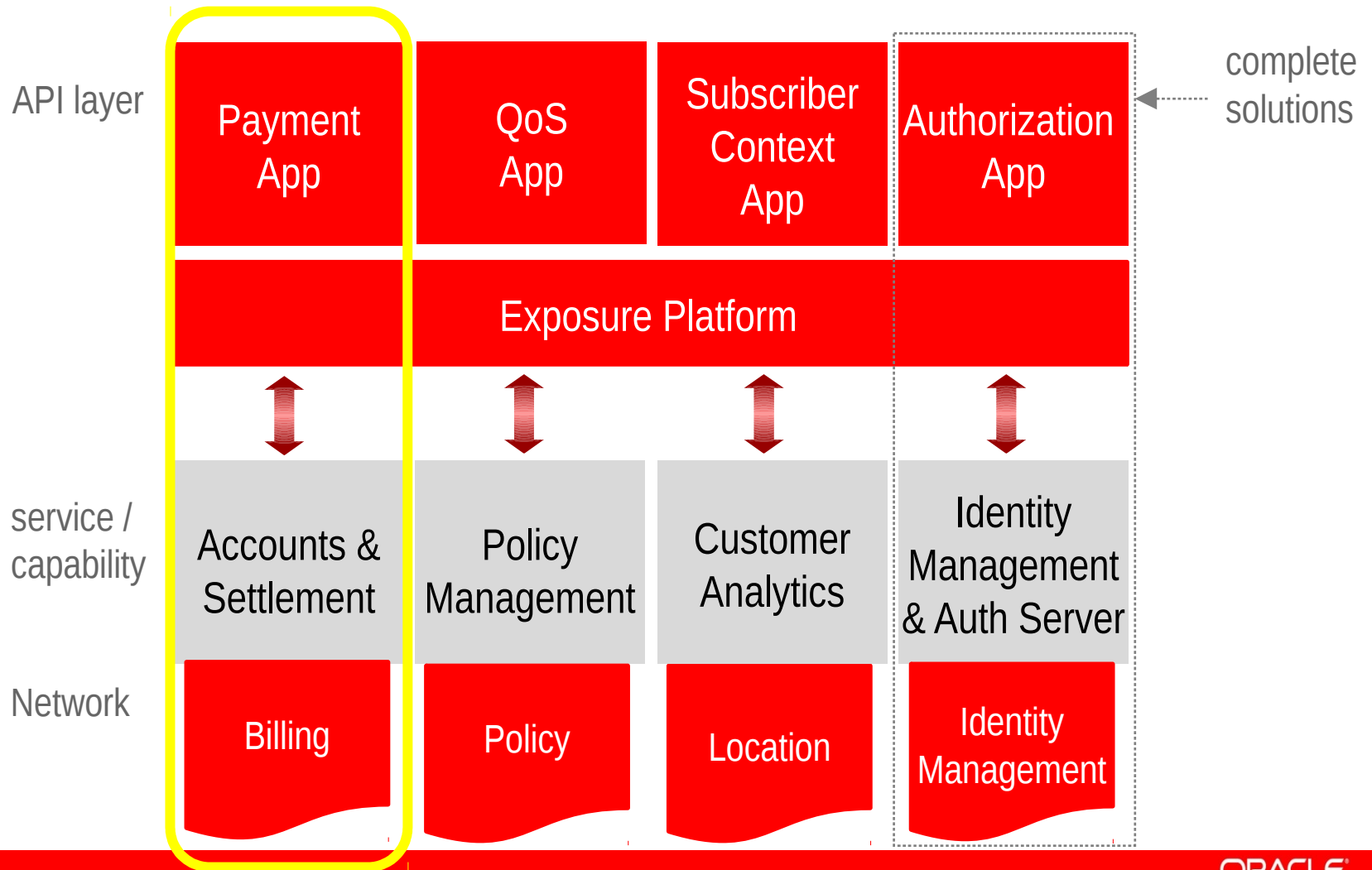


- Click to call, meet me at my number, alerting, etc
- Payment across goods & services
- USSD in developing markets
- Advertising with user profile under customer control
- Presence & location enabled call centers
- Number provisioning
- Messaging enabled customer service & business processes
- Other (Directory services, IVR, M2M, etc)
- IVR / voice store / other voice related VAS
- Machine to machine
- Unified communications & collaboration

Source Alan Quayle Business and Service Development estimate for 2015 based on the top 15 APIs operators could implement.

Focused Network Differentiators

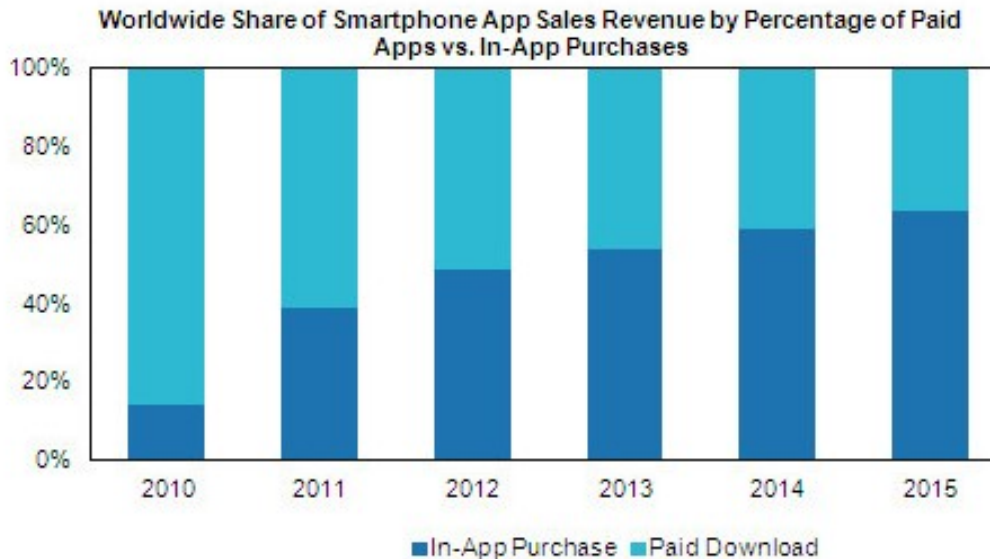
API = End 2 End Capabilities



In Application Charging

98%

of Smartphone App Downloads Are Free



Source: IHS Screen Digest January 2012

\$5.6B

of revenue from in-app charging in 2015*

Payment as a Service

In Application Charging

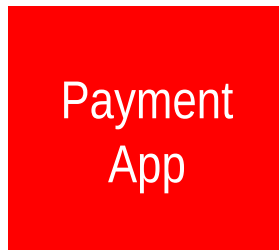


“This is a market where the key pieces of the jigsaw are starting to come together. ... where mobile billing has been supported as an additional payment option, we have recently seen examples of merchant revenue increasing by over 200 per cent,”

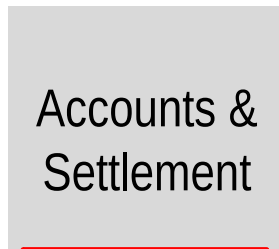
Sample Java API

Request Charge

API layer



service /
capability



Network



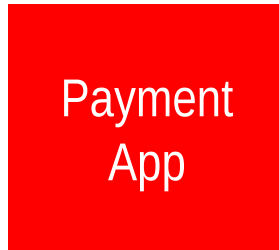
```
POST https://openmiddleware.pl/oneapi/1/payment/tel:  
%2B48503619582/transactions/amount  
HTTP/1.1  
Accept-Encoding: gzip,deflate  
Content-Type: application/json  
User-Agent: Jakarta Commons-HttpClient/3.1  
Content-Length: 342  
Authorization: Basic NDg1MDM2MTk1ODI6dGVzdDUwMzYxOTU4Mg==  
Host: openmiddleware.pl  
{  
  "amountTransaction":{  
    "endUserId":"tel:+48503619582",  
    "paymentAmount":{  
      "chargingInformation":{  
        "description":"chargeAmount",  
        "currency":"XOF",  
        "amount":"1.0",  
        "code":"myCode"  
      }  
    },  
    "transactionOperationStatus":"Charged",  
    "referenceCode":"REF-12658207",  
    "clientCorrelator":"5742155409753426794"  
  }  
}
```



Sample Java API

Response Charge

API layer



service /
capability



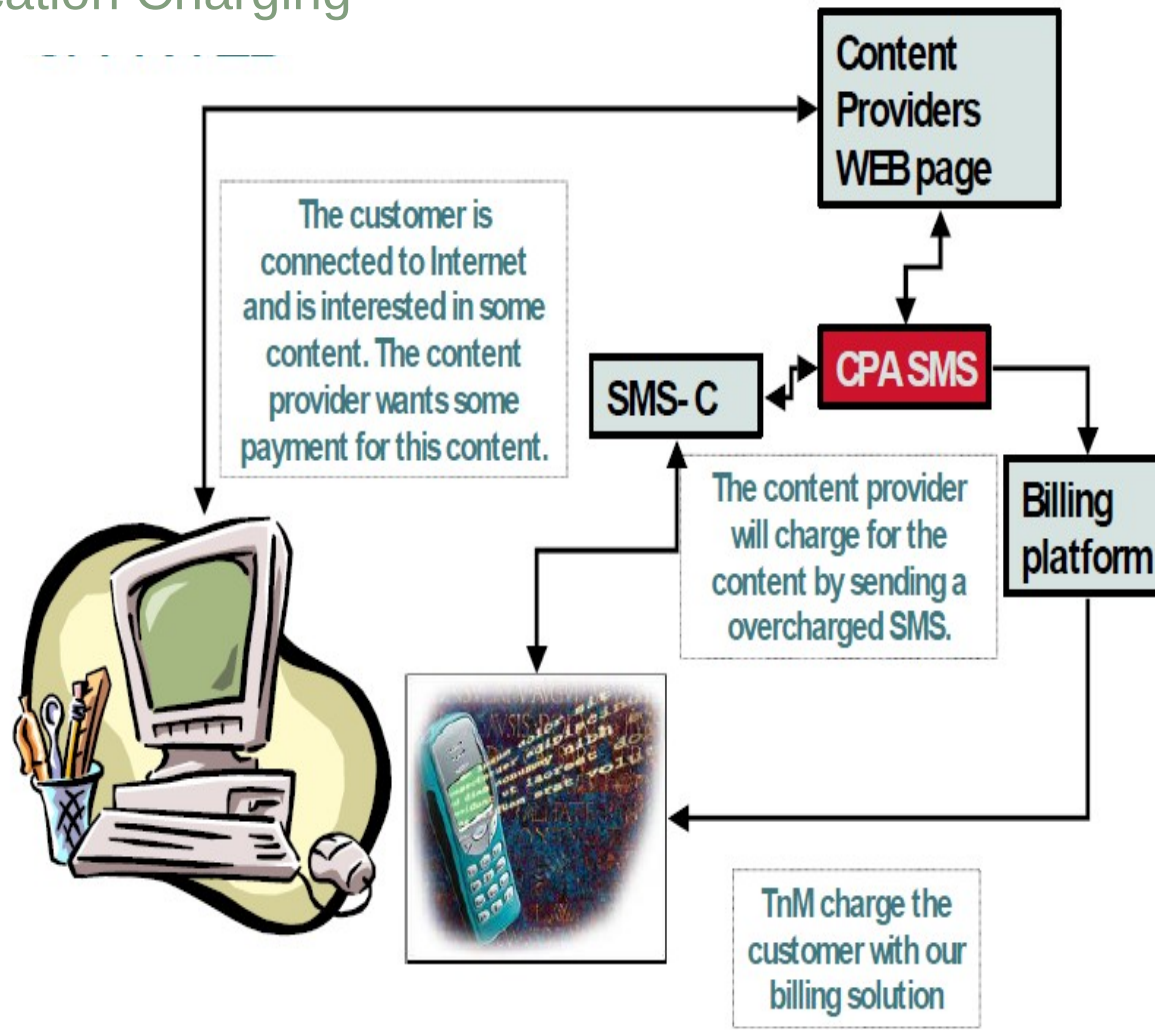
Network
Element



```
HTTP/1.1 201 Created
Date: Thu, 18 Apr 2013 08:05:20 GMT
Transfer-Encoding: chunked
Content-Type: application/xml
Set-Cookie: _WL_AUTHCOOKIE_JSESSIONID=sE8fcj4Z52vwMpmD8Red; path=/; secure; HttpOnly
X-Powered-By: Servlet/2.5 JSP/2.1 2
<?xml version="1.0" encoding="UTF-8" standalone="yes"?><ns2:amountTransaction
xmlns:ns2="urn:oma:xml:rest:payment:1"><endUserId>tel:+48503619582</endUserId><payment
Amount><chargingInformation><currency>PLN</currency><amount>1</amount><code>myCode
</code></chargingInformation></paymentAmount><transactionOperationStatus>Charged</transa
ctionOperationStatus><referenceCode>REF-
12658207</referenceCode><resourceURL>http://10.254.239.141:80/1/payment/tel:+48503619582/transactions/amount/REF-12658207</resourceURL></ns2:amountTransaction>
<ns2:amountTransaction xmlns:ns2="urn:oma:xml:rest:payment:1">
<endUserId>tel:+48503619582</endUserId>
<paymentAmount>
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<currency>PLN</currency>
<amount>1</amount>
<code>myCode</code>
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<referenceCode>REF-12658207</referenceCode>
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</ns2:amountTransaction>
```

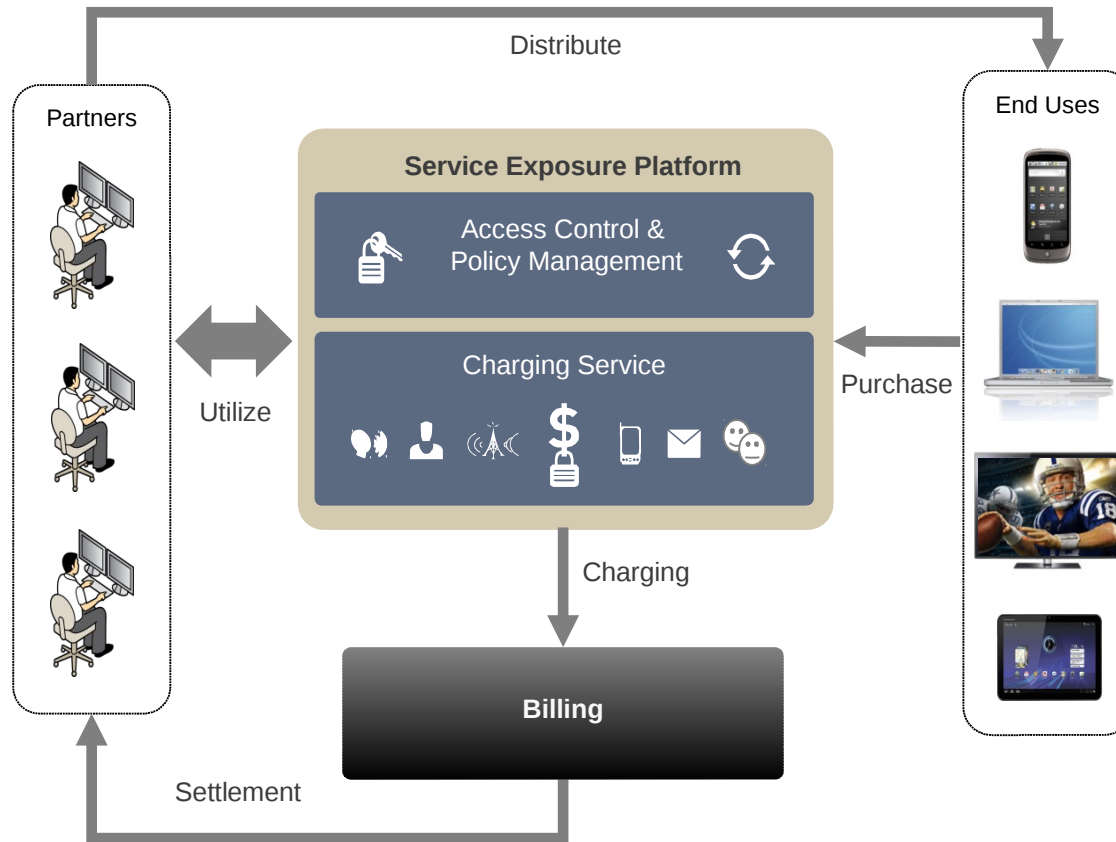
Telenor

In Application Charging



Payment Gateway

Reference architecture



Business Case

BlueVia – Telefonica (and Telenor)

- Payment API allows partners to sell digital goods to Movistar, Vivo and O2 customers, who can pay on their mobile phone via aggregators (e.g. Boku).
- Payment API revenue shares per November 2012:

	Developer	Merchant	BlueVia
– Germany	2.09%	69%	28.91%
– Spain	1.40%	46%	52,60%
– United Kingdom	2.43%	81%	16,57%
– Argentina	0.51%	17%	82,49%
– Mexico	0.97%	32%	66,03%

VHA Use Case Example

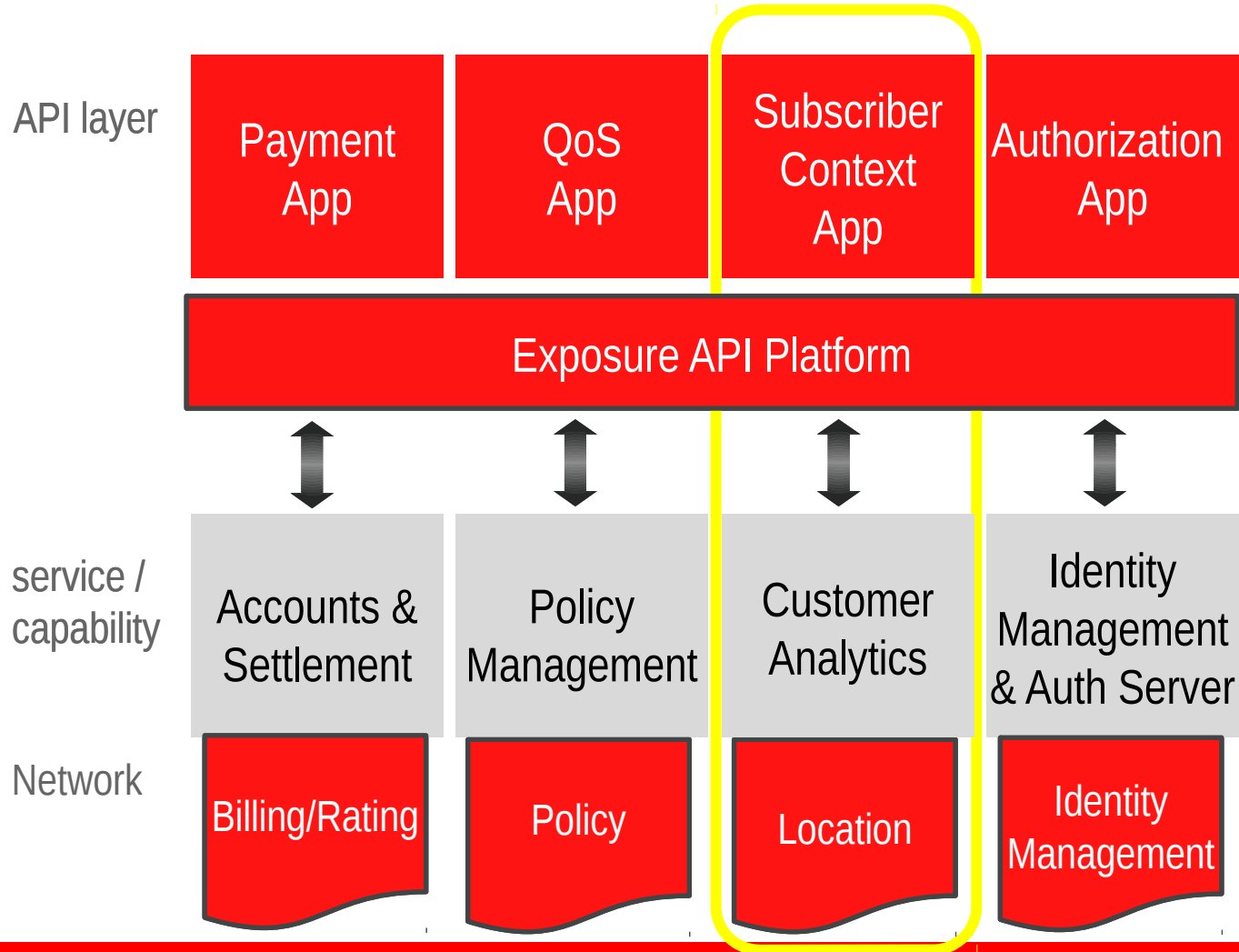
Enabling In-app billing for premium services

- App keeps user up to date with Cricket games
 - Live scores with ball by ball commentary
 - Live Cricket TV
 - Video clips, reports, results, etc
- Provides in-application billing for premium features
 - Live scores & video
- Utilizes OCSG to enable in-application billing to subscribers post- or pre-paid account



Subscriber Context

Location



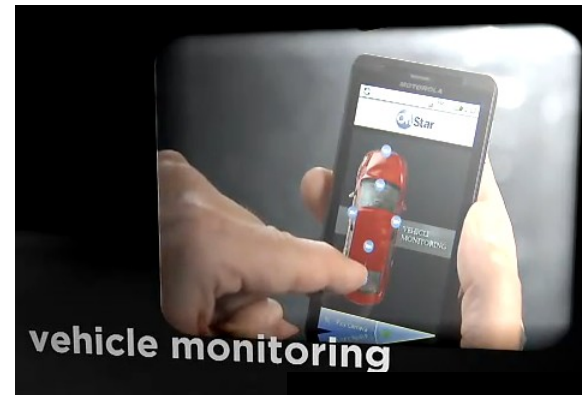
Subscriber Context as a Service

OnStar Verizon 4G LTE Vehicle



http://www.youtube.com/watch?v=2T7fkIRAh6M&feature=youtube_gdata_player

http://www.youtube.com/watch?v=YgVxD-PROSg&feature=youtube_gdata_player



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Subscriber Context as a Service

Exposing APIs



Requestor

FriendFinder
App

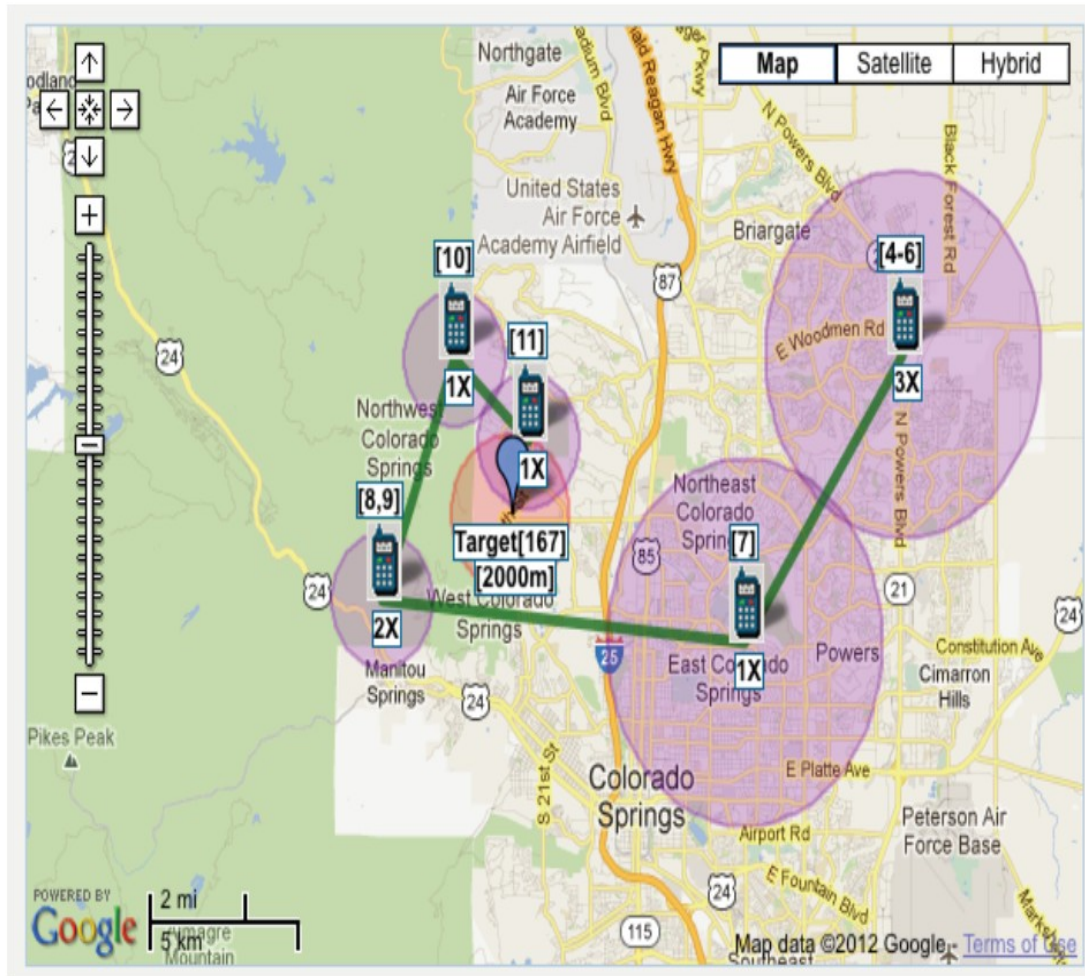
Service Exposure
Platform

Target



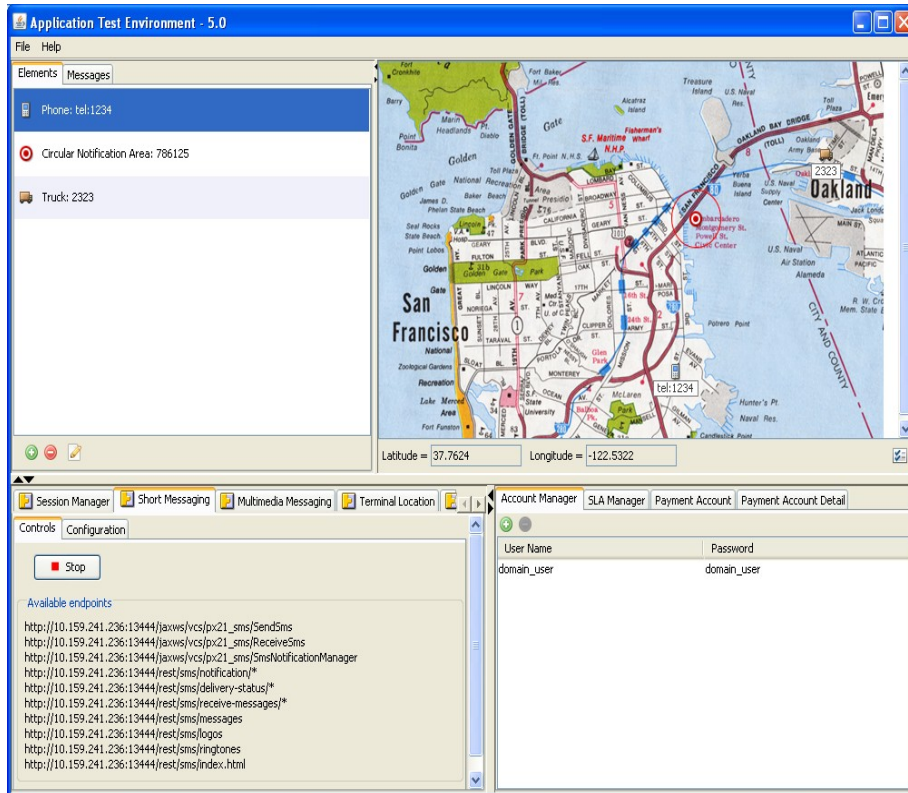
Subscriber Context as a Service

Exposing APIs



Comprehensive Platform Test Environment

Simulates Application and Network Interfaces



- Simulates Application interfaces
 - SOAP & REST support
 - SLA support
- Management GUI to OCSG
- Simulates Network interfaces
- Logs events

API – what is all about ?

API – (Application Programming Interface)
building blocks for applications



How does it works ?

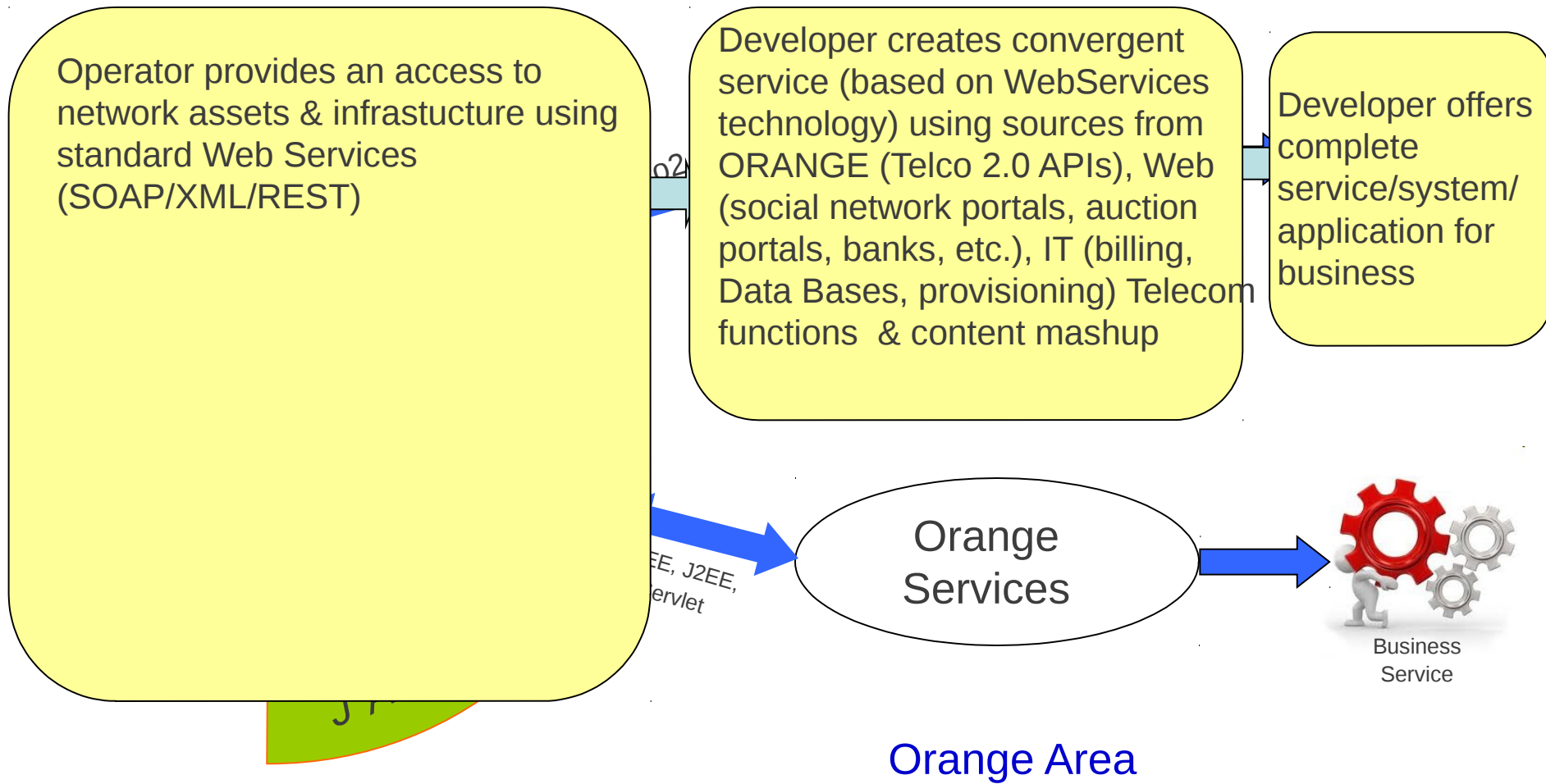
Internet access!

We expose Web Services in RESTful architecture style – some of them can be tested using web browser e.g.

Easy to use !!!



Idea of APIs exposition (Telco 2.0)



Orange Labs community in Open API/Open Middleware domain

Warsaw
University of
Technology

Environment:
portal
wiki
social network
mailing list
forum
Virtual Lab

Lodz
University of
Technology

University Of
Warmia And
Mazury In
Olsztyn

Orange Labs

Cooperation with Universities

community

Lectures

certification

Msc, Bsc thesis

research

Twoja Perspektywa



POLITECHNIKA WARSZAWSKA



Politechnika Łódzka
Instytut Elektroniki

community/B2B

conferences

Cooperation with Su

Virtual Lab (Mobile, I

OpenCloud

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ZTE中兴

MobiCents

SIEMENS

Siemens Enterprise Communications

B2B

Trials/prototypes

API exposed for community

1. SMS API (send i receive)
2. MMS API (send i receive)
3. USSD API (send i receive)
4. Click to call
5. Terminal location
6. Terminal Status(free/busy)
7. Advanced call control
8. IKEA (IMS KIT for Easy Asemmling APIs (click 2 call, conference, click 2 announcement)
9. Get time – atomic clock
10. Unified Communications APIs
11. Payment APIs

API

Virtual Lab

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The screenshot shows a web browser window with the address bar displaying "www.tu.rd.tp.pl/portal/". The page header features the "orange" logo and the text "Orange Labs Telco 2.0 University" with the tagline "Świadomy developer". A search bar is located in the top right corner. Below the header is a navigation menu with the following items: "Co nowego?", "O portalu", "Czym jest Telco 2.0", "Nasze aplikacje", "Dla developerów", "Forum", and "Twoja Perspektywa".

The main content area is titled "WITAJ NA STRONIE STARTOWEJ". Under the "Co Nowego?" section, there is a post by Jarosław Legierski dated 05 stycznia 2012 00:00. The post includes an image of a compass and discusses a workshop held at Siemens Enterprise Communications on January 4, 2012, for students of the Łódź University of Technology. The workshop was part of a certification exam for Unified Communications (Openscape UC) solutions. The post also mentions the "Emergency Button" application, which was presented at a conference on e-Health in the Polish Presidency of the European Council in November 2011. The application was showcased at the Centrum Systemów Informatycznych Ochrony Zdrowia.

On the right side of the page, there is a "Nasi Partnerzy:" section featuring logos for "POLITECHNIKA WARSZAWSKA", "Politechnika Łódzka Instytut Elektroniki", and "WMiI Uniwersytet Warmińsko-Mazurski w Olsztynie". The "SIEMENS" logo is prominently displayed at the bottom right of the page.

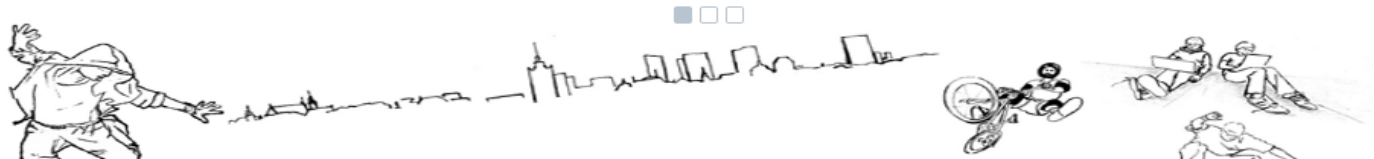


OpenAPIHackathon



- about contest
- for developers**
- blog
- community
- contact

START → FOR DEVELOPERS



New date for collecting ideas!

Application Programming Interfaces (APIs).

On this website you will find City of Warsaw and Orange APIs.

city data
Veturilo stations info

to get info about the Veturilo stations in Warsaw (incl. geographical location)

new documentation
real example

city data
Park&Ride location

to get info about the Park&Ride stations in Warsaw

new documentation
real example

city data
Bus&Tram Time Table

to get time table of public transport for chosen bus lines and stops

documentation
real example

send MMS

to send MMS (multimedia messages) from web application to mobile terminal

documentation
real example

send SMS

to send SMS (short message) from application to mobile terminal

documentation
real example

receive SMS

to receive SMS (short message) from mobile terminal to the application

documentation
real example

send USSD

to send USSD (Unstructured Supplementary Service Data) notification to mobile terminal

documentation
real example

receive USSD

to receive USSD (Unstructured Supplementary Service Data) code from terminal to the application

documentation
real example

get location

to get info about the mobile terminal geolocation

documentation
real example

get time

to get info based on the atomic clock source in Orange

documentation
real example

payment

to perform the selected operation on subscriber prepaid account like: charging, refunding and...

documentation
real example

terminal status

to get info about the mobile terminal status (active/ busy/ unavailable)

documentation
real example

Image by Natalia Borowicz

Partners:



Community:



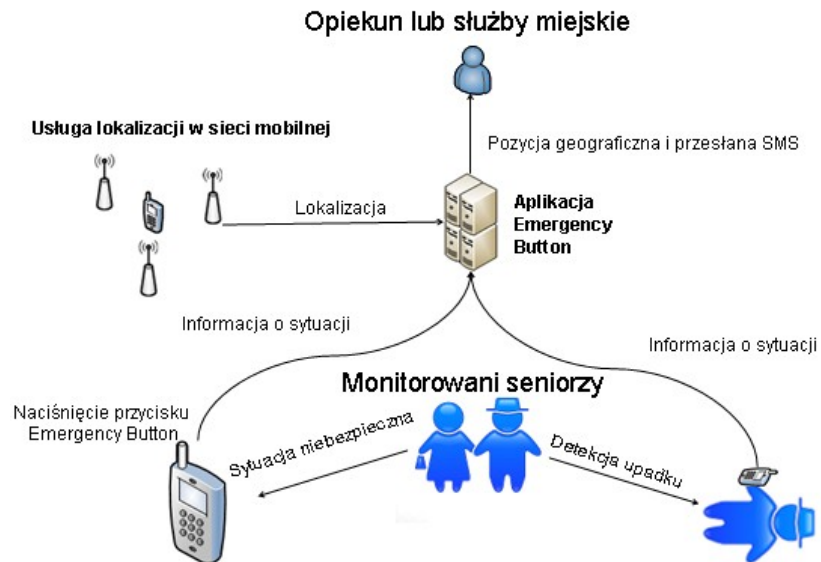
Emergency Button

Receive USSD

Location

Send SMS

Google Maps



The screenshot shows the web interface for the Emergency Button system. The browser address bar shows 'localhost:8080/OLEB/userPanel.jsp#'. The page title is 'EmergencyButton' and the user is logged in as 'kamill'. There are four main buttons: 'Wydarzenia', 'Zarządzaj', 'Rejestruj seniora', and 'Wyloguj'. Below these are two tables: 'Zarejestrowani seniorzy' (Registered seniors) and 'Seniorzy pod moją opieką' (Seniors under my care).

Imię	Nazwisko	Nr telefonu
Andrzej	Pomarańczowy	515668459
Janina	Zagubiona	234664323

Imię	Nazwisko	Nr telefonu
Andrzej	Podziewski	511792631

Emergency Button v. 1.0
© copyright Orange Labs 2011
Kontakt:
Kamil Litwiniuk, Andrzej Podziewski



Parking System

Receive USSD

Send USSD

Send SMS

Reservation

Phone Number

48511558954

Place ID

Brak miejsc

Brak miejsc

- R1
- R2
- R3
- R4
- R5
- R6
- R7
- R8
- R9
- 1
- 2
- 3
- 4
- 5
- 6
- 7

Parking Reservation

Welcome admin! [[Log Off](#)]

[Home](#)

[Make Reservation](#)

[Cancel Reservation](#)



✔ Number: 48511558954 wants to make reservation

Bus Stop

Receive USSD

Lokalizacja

Send SMS

Most popular APIs

Aplikacj	Location	Send SMS	Send USSD	Terminal Status	Receive USSD	Voice API (IKEA, UC...)
a Emergency Button	✓	✓			✓	✓
Bus Stop	✓	✓			✓	✓
Telco 2.0 for UC	✓	✓	✓			
Fun Support	✓					✓
Social City Game	✓	✓	✓			
Smart Dialer	✓	✓				✓
Parking System		✓	✓		✓	
IKEA call Recorder					✓	✓
USSD for UC					✓	
Context-aware contact	✓			✓		✓

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 geecon 2013

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**Open API Hackathon
closes June 3rd**

- Win a trip to JavaOne!

- Or internship at Orange Labs

- Or funding for your company

Panel discussion ... group thought!

12:40 - 13:30	Lunch Break			
13:30 - 14:30	Trisha Gee What do you mean, backwards compatibility?	Leonid Igonlik Machine learning for a busy developer	Grzegorz Kossakowski Type safe JSON using Scala Macros	Shaun Smith Java Persistence From NoSQL to HTML5 (and Back)
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14:40 - 15:40	Sławek Sobótka Model is all you need	Lars George HBase - Advanced Concepts	Douglas Tait, Marcin Nowak Building mobile apps using network assets	Stefan Tilkov Web development you are doing it wrong
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17:00 - 17:10	Break			



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geecon 2013

Piotr
Loin

Douglas
Tait

Marcin
Nowak

Open API Hackathon

closes June 3rd

- Win a trip to JavaOne
- Or internship at Orange Labs
for funding your company

SEI