BUSINESS SUPPORT SYSTEMS

Lisbon, November 14th 2012
1. ERICSSON
2. MARKET CHALLENGES
3. OSS&BSS
4. OPERATOR EXAMPLE
5. TRENDS
6. Q&A
ERICSSON AT A GLANCE

- Founded in Sweden: 1876
- Number of employees: 104,525
- Number of patents: 30,000
- Subscribers in networks that we manage: 900M
- Subscribers on Ericsson supported networks: 2.5B
- Of the world's mobile calls are on Ericsson networks: 40%
- Countries we operate in: 180
- SEK, Net sales 2011: 226.9B
- Founded in Sweden: 1876
DID YOU KNOW?

› In 2010 Ericsson was rated 8\textsuperscript{th} in Top Companies in the IT Services Industry

http://www.servicestop100.org/it-services-companies-top-100-of-2010.php

- 5\textsuperscript{th} amongst top software companies

http://www.softwaretop100.org/global-software-top-100-edition-2010-the-highlights
http://www.softwaretop100.org/global-software-top-100-edition-2010
WE BELIEVE: THE NETWORKED SOCIETY

- +1000 BB USERS
- ~1% OF GDP
- +10% BB PENETRATION
- 0,3% GDP GROWTH

WE CAN: BOOST TODAY’S BUSINESS

Exploring innovative business strategies

WE HAVE: THE CAPABILITIES REQUIRED

1. Operation and Business Support Systems
2. Mobile Broadband
3. Managed Services
4. Converged Core
5. Packet Core & IP Backhaul
6. Satellite, Contribution & Distribution, and Broadcast Markets

WE KNOW: WHAT CAN IMPACT BUSINESS STRATEGIES

- Customer projects
- Ecosystem presence
- Research with 6 unique Labs
Ericsson is the market leader in mobile communications products and services, including OSS/BSS systems.
FROM VOICE TO DATA

VOICE SERVICES

DATA SERVICES

DATA DRIVEN OFFERINGS TARGETING INCREASING NUMBERS OF CONSUMERS
WHO ARE YOUR CUSTOMERS?

Blue Collar
5 GB browsing
News service
Netflix 5 movies

'Socializer
Social Media package
Facebook
Twitter

Student
2 GB browsing
YouTube
Gaming package

Music Lover
Unlimited Spotify

The corporation
Shared Plan

Business man
10 GB browsing
WiFi hotspot
Roaming 2 GB
TED talks

DAD
MOM

10 devices
20 MB data
500 min voice
1000 SMS
THE CUSTOMER DILEMMA

How much is 2 Gigabyte?
THE CUSTOMER DILEMMA

- 14 million SMS
- 1.5 million E-mail
- 1,000 Photos
- 48 hours of low-resolution video
- 3-4 Game clients
- 12 minutes of HD film
END-USER EXPERIENCE

How fast do I consume 2 Gigabyte?
## End-user Experience

<table>
<thead>
<tr>
<th>Technology</th>
<th>Maximum Theoretical Downlink Speed (Mbps)</th>
<th>Duration to consume 2GB (hours:mins:sec)</th>
<th>Cost/min at 1 cent/Kb</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPRS (2G)</td>
<td>0.115</td>
<td>39:36:00</td>
<td>$8.41</td>
</tr>
<tr>
<td>EDGE (2G)</td>
<td>0.384</td>
<td>11:36:00</td>
<td>$29.34</td>
</tr>
<tr>
<td>WCDMA (3G)</td>
<td>3.84</td>
<td>1:09:27</td>
<td>$288.72</td>
</tr>
<tr>
<td>HSPA (3G)</td>
<td>14</td>
<td>00:19:00</td>
<td>$1052.63</td>
</tr>
<tr>
<td>HSPA+ (3G)</td>
<td>42</td>
<td>00:06:21</td>
<td>$3220.61</td>
</tr>
<tr>
<td>LTE (4G)</td>
<td>100</td>
<td>00:02:36</td>
<td>$8474.57</td>
</tr>
</tbody>
</table>
TRAFFIC AND REVENUE DE-COUPLED

Traffic

Voice dominant

Operators revenues & traffic de-coupled

Data dominant

Revenues

Time
TOWARDS THE NETWORKED SOCIETY

More than 50 billion connected devices

EVERYTHING THAT CAN BENEFIT FROM A CONNECTION WILL BE CONNECTED
OTT - OVER-THE-TOP SERVICES
OSS BSS – A QUICK OVERVIEW

Customer Relationship Management

- Plan, Build, Optimize
- Service Fulfillment
- Service Assurance
- Billing & Rev. Mgmt

Business Processes

Technology

People
This is OSS

Customer Relationship Management

- Plan, Build, Optimize
- Service Fulfillment
- Service Assurance
- Billing & Rev. Mgmt
THIS IS BSS

Customer Relationship Management

Plan, Build, Optimize
Service Fulfillment
Service Assurance
Billing & Rev. Mgmt
THIS IS BSS

- Charging
- Mediation
- Mobile Money
- Analytics and BI
- Revenue Assurance
- Billing
- CRM
- Wholesale
- Customer Experience
- Charging&Billing in One
“The **Charging** System allows you to handle the charging of services and users in real time. The system rates and reserves the necessary funds for the user as an integral part of service delivery. This prevents credit overruns while giving service providers control of credit and users more spending control.

It is typically used for prepaid.”
Real Time action and Spending Control
Rating and Balance Management
Segmentation, Promotions and Bonus in Real Time
Refills and End User communication

ERICSSON SOLUTION USED BY >165 OPERATORS & SERVING >1.1 BILLION SUBSCRIBERS
CHARGING EVOLUTION

Offline
File based (CDR’s)

Near real-time
File based Charging (post-processing)

Online
Online Charging with Cost Control
The parameters that forms an offer differs between voice and data.
VOICE CHARGING

Business Support Systems
Customer Care, Self-Provisioning, Billing etc.

FLEXIBLE MARKETING PRODUCTS

CHARGING

INAP CAMEL

MSC

products

CHARGING

MSC MSC

CAMEL INAP

CHARGING

INAP CAMEL

MSC
DATA CHARGING WITH DEEP DATA INSPECTION

Business Support Systems
Customer Care, Self-Provisioning, Billing etc.

FLEXIBLE MARKETING PRODUCTS

CENTRALIZED POLICY CONTROL

CHARGING

PCRF

Gy

Gx

Sy

GGSN/DPI

DPI
Policy Types Depend

Network Policy
Peak-Hour Congestion Management

User Policy
GOLD
14 Mbps
Max 10 GB/month
High prio
Reduced to 2 Mbps (low prio) when reached usage
30€

Application Policy
YouTube Services @ MBR = 2 Mbps and High-Prio (THP=1) on default bearer
VoLTE on dedicated bearer with GBR = 516 Kbps

Different policies are combined to set the policy for the session
ONLINE SESSIONS ARE CHARACTERIZED BY A START, STOP AND INTERMEDIATE REQUESTS AND RESPONSES. E.G. VOICE CALL, DATA SESSION, ETC
ONLINE TRANSACTIONS ARE CHARACTERIZED BY A REQUEST AND A RESPONSE. E.G. SMS, MMS, CONTENT, ETC
CALL DATA RECORDS

CME2OR13MSCBER.CALLDATAERECD.UMTSGSMSPLMN.CALLDATAERECD
[
  SCFCHARGINGOUTPUT
  [
    CALLIDENTIFICATIONNUMBER : '630B4B'H
    EXCHANGEIDENTITY : "CCNFI4"
    SWITCHIDENTITY : '0001'H
    RECORDSEQUENCENUMBER : '630B4B'H
    DATE : '140B0B19'H
  ]
  EVENTMODULE
  [
    INSERVICEDATASEVENTMODULE
    [
      CHARGEPartySINGLE : 'APARTYTOBECHARGED (0)'
      GENERICCHARGINGDIGITS
      [
        [0] : '3B0004'H
        [1] : '1D0060000006000000000000'H
        [7] : '0B0211115251219340'H
        [8] : '2A02'H
        [9] : '3500'H
        [10] : '7B02000040'H
      ]
      GENERICCHARGINGNUMBERS
      [
        [0] : '0083133953624809'H
        [1] : '0184134204'H
        [7] : '1B00000004'H
        [8] : '1A00002B00000000000000000000000000000'H
        [9] : '1B00000000'H
      ]
      SERVICEFEATURECODE : '0002'H
      TIMEFOREVENT : '0F0C27'H
    ]
  ]
CDR EXAMPLE

CDRRECORDTYPE: 'GSTNCALL (5)'
CDRCALLINDICATION: 'SUCCESSFUL (1)'
CDRSCSCFEVENTTIME: '3499889515' D
CDRSCSCFCALLDIRECTION: 'ORIGINATING (0)'
CDRSCSCFCAUSE
{
    CDRSCSCFCAUSECODE: '0' D
    CDRSCSCFNODEFUNCTIONALITY: 'SCSCF (0)'
}
CDRSCSCFCHARGINGFUNCTIONADDRESS: "GRAMM.IMS.COM"
CDRSCSCFIMSCHARGINGIDENTIFIER: "11B945D30AC671B0999C164526C83A"
CDRSCSCFNODEIDENTIFIER: "GRASCSCF01.IMS.COM"
CDRSCSCFNODEREALM: "IMS.COM"
CDRSCSCFINTEROPERATORIDENTIFIERLIST
{
    [0]
    {
        ORIGINATINGIOI: "IMS.COM"
        TERMINATINGIOI: "IMS.COM"
    }
}
CDRSCSCFSERVICESESSIONIDENTIFIER: "GRASCSCF01.IMS.COM;4CF194D8;09A128;0005155870" D
CDRSESSIONDURATIONSIP: '625' D
CDRSESSIONENDTIMESIP: '20101127T234220'
CDRSESSIONSTARTTIMESIP: '20101127T233155742' D
CDRSIPCALLEDPARTYADDRESS: "SIP:351916531878@sip.OPERATOR.pt"
CDRSIPCALLINGPARTYADDRESS: "SIP:351936531860@sip.OPERATOR.pt"
CDRSIPINITIALREQUESTTIME: '20101127T233135504'
LIFECYCLE - PREPAID

ACTIVE – USER CAN ORIGINATE AND RECEIVE CALLS/ EVENTS
PASSIVE – USER CAN ONLY RECEIVE CALLS/EVENTS
NO SERVICE – USER CANNOT ORIGINATE NOR RECEIVE CALLS/EVENTS

A USER IN STATE PASSIVE OR NO SERVICE BECOME ACTIVE AFTER A REFILL
CHARGING EXTERNAL PROTOCOLS

Circuit Switched charging protocols, i.e. Between Charging and MSC: INAP CS1*, CAMEL*

Packet Switched charging protocols, i.e. Between Charging and GGSN, MMSC and other Application Servers: DIAMETER*, RADIUS, OSA PARLAY, HTTP, Etc.

IVR – MSC protocol: ISUP*

Other: WebServices*, FTP*, etc
USE CASE – 3 MIN VOICE
0.10€ PER MIN AND RESERVATION OF 2 MINUTES

SDP - Service Data Platform

Account 4,70€

Reserved 0.20€

MOBILE SWITCHING CENTER
USE CASE – 3 MIN DATA
0.50€ PER MIN AND RESERVATION OF 2 MINUTES

SDP - Service Data Platform

Account 0€

Reserved 0.50€

GGSN – EVOLVED PACKET CORE

Internet
USE CASE – ATM ACCOUNT REFILL - 10€ REFILL

CDR SDP - Service Data Platform

Account 15€

CDR AIR - Account Information and Refill

ATM MACHINE

CDR REFILE OK

Account 5€

CDR REFILE OK

Account 10€
USE CASE – SMS
POST-PROCESSING @0.10€

SDP- Service Data Platform

Account 4,90€

MEDIATION

SMSC

Deduct OK
“Telecom Billing is a process of collecting usage, aggregating it, applying required usage and rental charges and finally generating invoices for the customers. Telecom Billing process also includes receiving and recording payments from the customers.

*It is typically used for postpaid.*"
BSCS iX is Ericsson’s Billing solution
### WiseEasy “all-in-one” Package

<table>
<thead>
<tr>
<th>Service</th>
<th>Mobile</th>
<th>Fixed</th>
<th>Internet</th>
<th>Email</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly Fees</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>29.99</td>
</tr>
<tr>
<td>Usage Charges</td>
<td>19.00</td>
<td>10.75</td>
<td>10.99</td>
<td>0.00</td>
<td>40.74</td>
</tr>
<tr>
<td>Other Credits and Charges</td>
<td>-10.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>-10.00</td>
</tr>
<tr>
<td>One Time Charges</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total Charges</td>
<td>9.00</td>
<td>10.75</td>
<td>10.99</td>
<td>0.00</td>
<td>60.73</td>
</tr>
</tbody>
</table>

**Offer on the Month**
Earn huge discounts against any service on all international calls. Please visit the Wise Easy website for further details. [www.wiseeasy.com](http://www.wiseeasy.com)

**Payment Advice**
Mr. Brown
Account Number: 1234567
Invoice Number: 80808080

Current balance due: € 60.73
“Mediation is a central and vital function in all operators networks. It collects, formats and distributes data from the networks, making it available for a range of purposes such as charging and billing, service assurance, fraud detection and statistics. Mediation is fundamental in OSS/BSS and the busiest system within the telecom environment.”
TYPICAL SOURCES OF INFORMATION IN A MOBILE OPERATOR:

• CHARGING
  • CDR’S GENERATED BY USAGE
  • DR’S GENERATED BY REFILLS, ACCOUNT ADJUSTMENTS, LIFECYCLE CHANGES, TARIFF PLAN CHANGES, ETC

• CORE NETWORK
  • CDR’S GENERATED IN THE MSC, GGSN, SGSN

• SERVICE APPLICATIONS
  • CDR’S GENERATED BY APPLICATIONS (E.G. MMS, CONTENT)

• OTHERS
MULTI MEDIATION

MOBILE CS CORE

IMS

EPC

LTE

COLLECTION

PROCESSING

DISTRIBUTION

CHARGING INFORMATION

NETWORK INFORMATION

Billing

Fraud detection

Data mining

Real-time charging

OSS applications

CHARGING DATA

NETWORK PERFORMANCE DATA
MULTI PURPOSE TOOLBOX

IMS
MOBILE CS CORE
EPC
RADIO ACCESS

MULTI MEDIATION

CHARGING DATA
NETWORK PERFORMANCE DATA

CHARGING INFORMATION
NETWORK INFORMATION

BILLING
FRAUD
ASSURANCE

FLEXIBLE DATA ENRICHMENT
EFFECTIVE INTEGRATION BETWEEN SYSTEMS
USE CASE – PREPAID WITH CALL DETAILS

CHARGING SYSTEM → CDR → MEDIATION → Billing

Fraud detection
Data mining
OSS applications
“Customer relationship management (CRM) is a widely implemented model for managing a company’s interactions with customers, clients, and sales prospects. It involves using technology to organize, automate, and synchronize business processes—sales, marketing, customer service and technical support. The overall goals are to find, attract, and win new clients, service and retain those the company already has, entice former clients to return, and reduce the costs of marketing and client service.”
FROM PRODUCT AND TECHNOLOGY FOCUS TO CUSTOMER FOCUS

Delivering service based on customer needs, preferences and value
Sample CSR Contact Sheet providing seamless overview of contract history, contracted services and billing
CSPs require a 360 degree view of the customer experience
SOLUTION OVERVIEW

Ericsson Telecom CRM 1.0

Sales Productivity  Marketing Effectiveness  Customer Care

Telecom CRM adaptation based on business logic/ information from:

- Charging
- Billing
- Resource Administration
- Subscriber Management
- Order Entry

CRM UI Integration Elements

Telecoms Specific Integration (Business Orientated APIs)

CHARGING/ BILLING
USE CASE – ACTIVATION OF A TRIPLE-PLAY SERVICE

CUSTOMER RELATIONSHIP MANAGEMENT
(ERICSSON TELCO CRM)

ORDER MANAGEMENT
(WORK DIRECTOR)

INVENTORY MANAGEMENT
(GRANITE)

DYNAMIC SERVICE CATALOG
(DCAT)

ACTIVATOR
(ERICSSON MULTI ACTIVATION)

WIRELESS

WIRELINE

TV
“Mobile payment, also referred to as mobile money, mobile money transfer, and mobile wallet generally refer to payment services operated under financial regulation and performed from or via a mobile device.”

There are four primary models for mobile payments:

- Premium SMS based transactional payments
- Direct Mobile Billing
- Mobile web payments
- Contactless NFC - Near Field Communication
M-COMMERCE BRING BENEFITS TO MNOS

COMMISSIONS AND UP-SELLING AIRTIME

INTERESTS AND CASH FLOATS

ACQUISITION OF NEW SUBSCRIBER SEGMENTS
M-COMMERCE BRING BENEFITS TO MNOS

- Reduced Churn
- Strategic Move into Mobile Commerce
- Improved Brand Perception
GAIN FLEXIBILITY – USERS

Mobile-to-mobile transfer

Airtime top-up

Person-to-person transfer

Cash-in and cash-out
ERICSSON’S SOLUTION

- FLEXIBILITY
- USER EXPERIENCE
- SETTLEMENT
- SECURITY
- REGULATORY COMPLIANCE
- INTEGRATION
- A TRUSTED VENDOR
GAIN FLEXIBILITY – SERVICE PROVIDERS

SERVICES TO SUIT EVERY CUSTOMER

USSD, SMS, STK, APPLICATION OR BROWSER-BASED SOLUTIONS

DEFINE ALL HIERARCHIES, COMMISSIONS AND FEES
“Wholesale, also referred as Retail billing deals with end customer and billing an individual customers where as wholesale billing dealing with billing to the following entities depending on situation and nature of business:

• Billing resellers associated with a telecom operators.
• Billing interconnect partners for providing interconnection to make calls to another operators' customers.
• Billing roaming partners for providing services to their customers when they roamed in an operator's coverage area.”
TAP – Transferred Account Procedure Files are exchanged between operators: TAP Out is sent by visited operator and TAP In received by Home operator. TAP files are mediated by a Data Clearing Houses. RAP – Returned Account Procedure files are sent back in case of errors in the TAP file.
INTERCONNECT DATA EXCHANGE

OPERATOR – A

NETWORK

CHARGING INFORMATION

OPERATOR – B

NETWORK

CHARGING INFORMATION
USE CASE - MAKE A ROAMING VOICE CALL TO HOME

Home operator

Visited operator

B party

A party

$
USE CASE - MAKE A ROAMING VOICE CALL

Home operator

TAP3

Invoice

Account interrogation

Visited operator

A party

B party
“Business Intelligence is the ability of an organization to collect, maintain, and organize knowledge. This produces large amounts of information that can help develop new opportunities. Identifying these opportunities, and implementing an effective strategy, can provide a competitive market advantage and long-term stability.”
ANALYTICS AND BUSINESS INTELLIGENCE

- Deeper customer knowledge
- Focus on who is important
- Be proactive – not reactive
- Follow-up customer behavior
- Reduce costs
KNOW YOUR CUSTOMERS

Post/Pre-paid
Registered info
Active services
Monthly spending

Incoming/outgoing
Social network
Spending trend
Experience
Service mix

Time of day
Campaign reaction
Refill behavior
Usage pattern
Device type

GENERIC ANALYTICS

ADVANCED ANALYTICS
SERVICE ANALYTICS MODULE

Usage Analysis

Spend Analysis

Refill Analysis

Stock / Lifecycle Analysis

Service Analysis

-→ DRAG N’ DROP
-→ DRILL DOWN
-→ COMPARE
-→ UNDERSTAND
-→ TAKE ACTION
SERVICE & LOYALTY & CHURN ANALYTICS
KEY INPUT USED TO CALCULATE A BEHAVIOR CHURN SCORE

Experience → S-KPI → Churn Score
Network → Account → Refill → Usage → Churn Algorithm

SMKPI

Churn Score

Ericsson BSS Vision | Commercial in confidence | © Ericsson Telecomunicações, Lda 2012 | 2012-11-14
CUSTOMER PROFILING

Customer Care
Network Optimization
Brokering
Campaign Recommendation
Targeted Advertising

Customer Centric

Customer Profile Card
- Gender
- Male
- Zip code
- High Spender
- Smartphone user
- High influencer
- Good voice experience
- Poor web browsing

Network Behavior & Usage (incl Charging)
Demographic data
Terminal data
Service KPI's
Mobile Broadband
Social Network
UNDERSTAND THE BUSINESS

Business decision makers

Key performance indicators

Middle management

Analytical reports

Analytics expert user

Ad-hoc business analysis
“Customer Experience Manager is a real-time and historical customer experience monitoring and visualization – from the customer, service, device or location perspective – that:

• Unifies, filters and correlates network, device and service usage and quality metrics
• Highlights and prioritizes customer impacts
• Identifies probable root causes, and reveals trends”
SERVICE QUALITY DRIVES RESULTS

Service Quality Challenges
- High Expectations
- Competitive Alternatives
- Rapid Growth
- Complex Services
- Third-Party Content
- Advanced Networks

Customer Experience Impacts
- “This video is not watchable”
- “I can’t purchase this app”
- “I can’t connect”
- “My handset is frozen”

Business Results
- Churn
- Lost Revenue
- Repair Costs
- Customer Care Costs
Data as a key Asset
Actionable analytics
Customer Intimacy

5 of the top 6 areas where operators perceive a gap today are related to operational capabilities **

"I would like to customize my service so it fits my personal needs and what I will actually use”

"I would like to get notification from my Internet service provider on why service is slow”

"I would like to get unsolicited recommendations that minimize my service cost based on my usage patterns”

CUSTOMERS WANTS PERSONALIZATION

"I would like to customize my service so it fits my personal needs and what I will actually use”

"I would like to get notification from my Internet service provider on why service is slow”

"I would like to get unsolicited recommendations that minimize my service cost based on my usage patterns”

Maximize Opportunity
Customer Experience
Defend customer base

customers wants personalization
CUSTOMER-CENTRIC MINDSET

- Transforming the operations
- Prioritization of work
- Enables pro-activity
- Extended Root Cause Analysis
Great user experience & substantial business value

Huge amounts of fragmented data + Strategic capabilities → Empowering

...customers
...usage
...performance
...charging
...devices
...resources
...offers
...in real time

Big Data Mgmt / MPP

Dynamic policy mgmt
Multi mediation & data correlation

Radio & core leadership
Traffic & usage patterns

Proactive
Reactive

Customer experience assurance Ericsson value proposition

Huge amounts of capabilities
S-KPI'S TO UNDERSTAND USER EXPERIENCED SERVICE PERFORMANCE

How to measure the service experience?

End-users

Service

Network Resources

System Service

System Service

e.g. Web Browsing

Service-KPI's

Accessibility can I access?

Retainability can I keep?

Integrity good quality?

Resource-KPI's

Terminal

RAN

Core

Server
“Revenue assurance is a niche business activity most commonly undertaken within businesses that provide telecommunication services. The activity is the use of data quality and process improvement methods that improve profits, revenues and cash flows without influencing demand.”
WHY REVENUE ASSURANCE
DETECT, CORRECT AND PREVENT REVENUE LEAKAGES & FRAUD

MAIN DRIVERS:
- DETECT, STOP AND PREVENT REVENUE LEAKAGES, FRAUD & DATA INCONSISTENCIES
- REVENUE MAXIMIZATION, RISK REDUCTION
- END-TO-END REVENUE/COST FLOW VISIBILITY MANAGEMENT REPORTING, LEGAL COMPLIANCE
- OPERATIONAL EFFICIENCY

Industry Estimated Leakage is 3-15%
**SCOPE DIMENSION –**
**MULTI FACETED OPERATIONS**

- **Customer Service**
  - Churn Analysis
  - Customer Segmentation
  - Service Bundling
  - Service Pricing Strategies

- **Sales & Marketing**
  - Churn Analysis
  - Customer Segmentation
  - Service Bundling
  - Service Pricing Strategies

- **Finance**
  - Accounts Receivables / Payables
  - General Ledger
  - SIM Card / Voucher Management
  - External Order Interfaces

- **Provisioning**
  - Fulfillment
  - Switch and Circuit Activation

- **Charging / Billing**
  - CDR Collection, Processing, Distribution (Data Integrity)
  - Rating / Bill Calculation
  - Settlements
  - Roaming / Interconnect / Content Billing
  - Invoice Production
  - Invoice Distribution
  - Collection / Payment Processing

- **Order Entry**
  - Service Order Entry
  - Customer Data Quality
  - Customer Credit Check
  - Grey- and Blacklist Management
  - External Order Interfaces

- **Network Administration**
  - Fraud Detection
  - Network Security
  - Traffic Management
  - E2E-Service Assurance
USE CASE – REVENUE INTEGRITY

Mediation Device

Rating

Billing

CDR Integrity inside Billing

Alarms

Alarms

Alarms

Alarms

Reconcile with Mediation Feed to Billing

Reconcile with CDRs Rated

Reconcile CDRs Billed

Service Types Based on Traffic Cases

Pseudo CDR SS7

Reconciliation Alarms

Service Types Based on Billing Cycles

Billed CDR
USE CASE – PROVISIONING INTEGRITY

- CRM
- Provisioning
  - FNR
  - HLR
  - SCP
  - SDP
- ADMIN
- GSM PREPAID CHARGING SYSTEM (SIMPLIFIED)
- BILLING
- REVENUE ASSURANCE (AUTOMATIC RECONCILIATION)
“Convergent charging and billing (also known as convergent charging, converged charging and convergent billing), is a solution in the telecommunications industry that enables common management of all users and all services for operators. It includes convergence of payment methods like prepaid and postpaid, as well as access methods and services like fixed telephony, mobile telephony, broadband and TV.”
CBIO - A COMPLETE, END-TO-END SOLUTION

BILLING

- Broadband
- Fixed prepaid
- Fixed postpaid
- TV
- Mobile prepaid
- Mobile postpaid

SERVICES

- Cable TV
- Mobile prepaid
- Mobile postpaid
- Broadband
- Fixed prepaid
- Fixed postpaid

- Customer care
- Billing
- Charging
- Mediation
- Session control
Layered Architecture

- **Customer Management**: Provides a 360-degree view of all customers, partners and products.
- **Billing**: Handles invoicing, settlements, statements and collections for all communication services.
- **Charging**: Central rating and charging, bonus and promotions handling as well as notifications to all customers in real-time.
- **Mediation**: Provides online, bidirectional transport of charging information between network and serving elements. This layer also handles non real-time transport of chargeable events.
- **Session Control**: Provides network and serving elements with capabilities to notify users and stop services when credit is depleted – the charging layer defines the policy to follow.
Charging

Mediation

Mobile Money

Analytics and BI

Revenue Assurance

Billing

CRM

Wholesale

Customer Experience

Charging & Billing in One
Charging System

Multi Mediation

Ericsson e-commerce

Analytics Suite

Revenue Assurance

BSCS iX

Ericsson Telecom CRM

Ericsson Roaming and Billing Solution

Customer Experience Assurance

CBiO
1. ERICSSON

2. MARKET CHALLENGES

3. OSS&BSS

4. OPERATOR EXAMPLE

5. TRENDS

6. Q&A
OPERATOR WITH 8M SUBS

THIS OPERATOR:

• OFFERS VOICE, DATA, SMS, MMS, CONTENT ACQUISITION, RING-BACK TONE SERVICE

• PROCESSES ~140M CDR’S PER DAY WHICH 60M ARE GENERATED BY CHARGING SYSTEM.

• AT PEAK TIMES PROCESSES AN AVERAGE OF 3,600 EVENTS PER SECOND (VOICE, DATA, SMS, ETC…) – THIS REQUIRES 8 SDP’S (5GB EACH) AND 4 CCN’S

• AT PEAK TIMES PROCESSES AN AVERAGE OF 120 REFILLS PER SECOND AND 180 BALANCE INQUIRIES – THIS REQUIRES 2 AIR’S
OPERATOR ERICSSON BSS

THEY HAVE:

- Charging System
- Multi Mediation
- CBiO
- BSCS iX
- Ericsson Roaming and Billing Solution

THEY ARE ABOUT TO INTRODUCE:

- Ericsson e-commerce
- Customer Experience Assurance
PROJECT APPROACH

SOME IMPORTANT FACTORS TO CONSIDER IN A PROJECT:

- SOLUTION DEFINITION – ARCHITECTURE
- SELECT THE RIGHT PRODUCT(S)
- DIMENSIONING:
  - TRAFFIC (CALLS/SEC AND REFILLS/SEC)
  - PROCESSING CAPACITY
  - DATABASES
  - INTERFACES
- SCOPE
- ACCEPTANCE TESTS
OPERATOR WITH 8M SUBS
CDR’S DIMENSIONING

~140M CDR’S/DAY WHICH:

• APPROXIMATELY 1/5 IS DATA AND 4/5 IS VOICE THIS MEANS:
  • DATA CDR’S = 28M CDR’S/DAY WITH AN AVERAGE OF 11KB PER CDR
  • VOICE (INCLUDE SMS) CDR’S = 112M CDR’S/DAY WITH AN AVERAGE OF 1.45KB PER CDR

• TOTAL VOLUME OF CDRS PROCESSED PER DAY IN MEDIATION AND DATA WARE HOUSE IS ~426GB => ~12TB IN ONE MONTH
SHARED PACKAGES

Only €20/month

Included: 10GB, 2Mbit/s

Take actions
DIFFERENTIATION AND PACKAGING FLEXIBILITY

Basic subscriptions

- **BRONZE**
  - 2 Mbps
  - Max 1 GB/month
  - Low prio
  - €10

- **SILVER**
  - 10 Mbps
  - Max 5 GB/month
  - Medium prio
  - €20

- **GOLD**
  - 80 Mbps
  - Max 10 GB/month
  - High prio
  - €30

Add on services

- **SPEED**
  - 20 mbps
  - €3

- **VOLUME**
  - 2 GB
  - 1 hour unlimited
  - 50 cent

- **SPEED**
  - 20 mbps
  - €3

- **VOLUME**
  - 2 GB
  - 1 hour unlimited
  - 50 cent

Services

- **7 days unlimited**
  - €2

- **1 month unlimited**
  - €15

- **5 videos**
  - €0

- **1 HD movie**
  - €4

- **1 hour international telephony**
  - €4

- **1 day**
  - 10 cent
Timer Offers

Try our mobile broadband: Free SIM and 1h free internet access. Country wise coverage.

25$ per day at hotel premises.
TIME LIMITED + POLICY

- **BASE**
  - Bandwidth: 0.256 Mbps
  - Prio: Low
  - Cost: 0.02€ / Mb

- **1 HOUR TURBO**
  - Bandwidth: 8 Mbps
  - Free 1 GB
  - Prio: Medium
  - Cost: 1€

- **30min YouTube**
  - Bandwidth: 0.4€
  - Prio: High

- **10min FaceBook**
  - Bandwidth: 0.1€
  - Prio: Medium
TIME LIMITED WITH RE-PURCHASE

TRIGGER USAGE OF NEW SERVICES
BUY ACCESS WHEN YOU NEED IT, UNDERSTANDABLE
1. ERICSSON

2. MARKET CHALLENGES

3. OSS&BSS

4. OPERATOR EXAMPLE

5. TRENDS

6. Q&A