Presentation agenda

- Comptel background
- Mediation layer in OSS today
- Operators role in future
- Mobile internet charging
- Future outlook
- Comptel m-services platform
COMPTEL GROUP

Comptel Plc

Subsidiaries:
- Comptel Communications Sdn Bhd, Malaysia
- Comptel Communications Inc, USA
- Comptel Communications Oy, Finland
- Probatus Oy, Finland
  - Business Tools Oy

Associated Company:
- Arcus Software Oy, Finland

Representative Offices:
- Comptel Plc RO, Hong Kong
- Comptel Communications RO, Australia

Comptel AREA Organisation

MDS Business Jorma Heinonen

AMERICAS
Mikael Nygård

EMEA
Jorma Turunen

ASIA PASIFIC
Mark Matthews

Region

Area

Arlington
Virginia

Helsinki

Peking

HongKong

KL

Sydney
Global Partner Network

System-integrators
- Andersen Consulting
- CSC
- Cap Gemini
- Compaq
- debis Systemhaus
- EDS
- Hewlett-Packard
- IBM
- Logica
- Lucent

Equipment vendors
- Compaq
- Hewlett-Packard
- IBM
- Sun

Software vendors
- Amdocs
- Geneva
- Hewlett-Packard
- IBM
- INTEC
- KSCL
- Kenan
- LHS
- Logica
- More Magic Software
- Oracle
- Portal
- TCS

Over 160 MDS Customers in 47 Countries
World Before Mediation

IT systems

Network elements

HLR, MSC, VMS, EIR, OTA, SCP, ...

Alcatel, Aldiscon, Cisco, Converse, Ericsson, Lucent, Nokia, Nortel, Sema, Siemens ...

Life is Easier with Mediation

IT systems

Network elements

Mediation

HLR, MSC, VMS, EIR, OTA, SCP, ...

Alcatel, Aldiscon, Cisco, Converse, Ericsson, Lucent, Nokia, Nortel, Sema, Siemens ...
Mediation software

IT systems
- Billing
- Customer care
- Fraud management
- Customer behaviour analysis
- Quality management systems

Network elements

Future Challenges...more complexity...more players
Telecom Services in Finland

Billion FIM

Source: Professor Olli Martikainen

Future Players?

Who?

- Merchants
  - Goods
- Credit Cards
  - Payment
- Portals, etc.
  - Content
- Banks
  - Payment
- Telco
  - Access
- ASP providers
  - Services

...and others?
Many new roles for the Operator

- **Network Operator**
  - Provides applications such as Corporate Access, Wireless Web Access

- **Content Provider**
  - Provides value-added information

- **Portal**
  - Managed Gateway to the Internet offering advertising and content revenue

- **Trusted Partner**
  - Provides secure and trusted transactions

Telco Positioning Options

- **Access provider**
  - Phone-bill based Micro-payment platform

- **Portal Service Provider**
  - Service Portal

- **Content provider**
Impact on Business

- Services & Content is a business opportunity
- Access - Commodity product brings less margins
- Mobility is a must

Mobile Evolution

- 59% of GSM operators will launch WAP before 8/2000
- 67% of GSM operators will launch GPRS before 2/2001
- 3G/UMTS services will be launched mid 2002
- Data will exceed voice in mobile in 2.5 years
- Mobile e-commerce will be primary revenue generator in 3 years

Source: ADC Group, February 2000
Charging is Changing

- **Duration**
  - “Always on”, no point charging

- **Distance**
  - Replace with Bandwidth, Quality of Service

- **Time of the Day**
  - Replace with “How real time information”

- **Mobility**
  - Added value, but becoming a commodity

- **Information/Content**
  - The real value

Intelligent Mediation is Essential

**Billing & settlements**

- **Billing Mediation**
  - Validation
  - Pre-rating
  - Correlation
  - Aggregation

- **Balance Control**
  - event-based pre-paid & cost control

**Service Usage**

- Network usage
- On-line payments/Transactions
New Mobile Internet Services: Main Impacts on Mediation Layers

- 20-100 times more events, extremely long ‘calls’!
  \[\Rightarrow\hspace{1em} \text{high performance and aggregation are required}\]

- Charging no longer based on duration!
  \[\Rightarrow\hspace{1em} \text{volume & content & location based charging}\]
  \[\Rightarrow\hspace{1em} \text{need for new thinking in Mediation & Billing}\]

- More players in the value chain
  \[\Rightarrow\hspace{1em} \text{more formats and new interfaces}\]

- Everything in real time
  \[\Rightarrow\hspace{1em} \text{high performance, high availability and auditability}\]

Usage Information and Mediation for Mobile Internet Charging

<table>
<thead>
<tr>
<th>Charging type</th>
<th>Mediation software needed</th>
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<tr>
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<td>Charging for content</td>
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Example: GPRS on Phone Bill

Mrs. Smith
Subscription GSM & GPRS

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<tr>
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<td><strong>TOTAL</strong></td>
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Comptel’s Position in Mobile Internet Market

- R&D’s focus on Mobile Internet since 1998. First GPRS/IP customers in 1999
- Several significant MDS for GPRS/IP delivery agreements (BT Cellnet, Sonera, Radiolinja, Radio Mobil)
- GPRS Charging Gateway products delivered since Q1/00
- Comptel Chinchilla, Online mediator, was launched in Q3/2000
From Traditional Mediation to Online Mediation

Example 1: Online Payment
Benefits of Comptel Chinchilla

- Telecom operator
  - New opportunity
  - More Value
- Content provider
  - Easy startup
  - Low investment
- End user
  - Security
  - Convenience

Take the Next Step in Value Chain

- Comptel MDS
  - From Traditional Mediation to Online Mediation
- Comptel Chinchilla
Comptel m-services Platform

Establishment of a Sales Company

Mobile Internet solutions for Global Market
Comptel future outlook

- The growth is expected to continue on the mediation software market, due to the changes in the role of mediation software and in technology (GPRS, IP)
- The roll-out of the GPRS technology and services are playing an important role in the growth strategy.
- There are uncertainties related to 3G mobile networks
- “Time to market” is increasingly important
- Comptel’s growth target for the year 2000 revenue is 40-50%
- EBITDA margin target for the fiscal year 2000 has been raised from 30% to 35-40% - which is on the top in the industry

Comptel Today; Providing the future telecom software solutions

- Global Telecom software company
- Global partners as delivery channel
- High profitability
- Good references
- Strong growth
- R&D investments for next generation mobile
Contact information

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Support Slides
### Comptel Net Sales 1-6/2000

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### MDS Credit Guard - To Serve and To Protect

- **Customer Care & Billing System**
- **Cost Control**
- **Mediation Services**
- **Telecom network**

- **Limit exceeded, please reset!**
- **Rated usage data**
- **“Block Calls”**
Long Term Information for Several Purposes

- Business Analysis
- Inter-operator Clearing
- Fraud Control
- Billing & Payment Management
- Fault Analysis

MDS/AMD-DB

- Standard SQL Interface
- Delivery Utility
- Data Aggregation
- Duplicate Checking
- Loading

MDS/AMD

MDS Pricing Models

- Network Interface licenses
- Application Interface licenses
- New Basic Licenses based on network type Mobile, Fixed, IP, GPRS, Satellite
- Volume components
- GPRS extension
- Credit Guard Basic licenses
- Broker pilots
- GPRS CGW

Comptel services
- Training
- Installation
- Consulting
- Delivery
## Competitors

<table>
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<tr>
<th></th>
<th>Billing mediation</th>
<th>Service Provisioning</th>
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- Global, independent
- Mainly USA
- (Nortel acquisition) Global
- Ericsson 60%
- Europe, Asia Pacific
- (Marconi proposal) Mainly USA
- Mainly Europe