Kapsch CarrierCom Facts

> Profile
We are the leading System-Innovator for Carriers and Service Providers

> Kapsch CarrierCom AG
- Employees: ~550
- Turnover: EUR 120 Mio
- Market Focus: Europe
- Headquarter: Vienna/Austria
- Sites: Czech Rep., Slovak Rep., Hungary, Slovenia, Croatia, Bulgaria

> Kapsch Group
- Employees: ~2,000
- Turnover: EUR 476 Mio.
- Market Focus: World Global Presence
Carrier VoIP Services

Market Trends
Trends and Challenges in IP communication networks

Trends in network architecture

- A migration to VoIP networks and general trends to converged networks can be observed.
- Companies increasingly integrate new services into their networks thus exploiting unused potential.
- A trend for the unification of services ignoring underlying transport technologies can be noted.

Challenges in TDM to IP migration

- Costs of IP solutions is the major challenge when migrating from TDM to IP solutions.
- Already deployed TDM solution have to be amortized otherwise representing considerable sunk costs.
- Legal restrictions in using IP-based voice communication is an issue for some countries (especially in the middle east).
Enterprises considers four basic factors choosing communications solution

- Decision concerning telecommunication architecture remains complex

- Decision has to be based on four criteria:
  - In **sourcing** the enterprise has to choose between offers from telecom operators, VAR and SI
  - **Technology** decision between TDM, Hybrid or IP solutions
  - The **operating model** will result in an in-house, out-sourced or a partial solution
  - The **service platform** will depend on the mobility needs of the enterprise
# Enterprises choose among 7 telephony solutions, 3 are future proofen

<table>
<thead>
<tr>
<th>System</th>
<th>Fixed / Mobile Solution</th>
<th>Enterprise solution</th>
<th>Carrier solution</th>
<th>Description</th>
<th>Future proof</th>
</tr>
</thead>
</table>
| TDM PBX        | Fixed                   | ✓                   |                  | - Classical analog or digital PBX, where all phones are connected via dedicated lines to the central branch exchange  
- Calls outside are connected via trunks to the PSTN network                                                                                                           |              |
| TDM Centrex    | Fixed                   | ✓                   |                  | - Classical central office exchange solution in the Voice Switch integrated, where access lines can be integrated and connected in a private voice network with private numbering plan |              |
| IN VPN         | Mobile                  | ✓                   |                  | - A centralized solution on the legacy intelligent network layer to offer PSTN services  
- Especially in the mobile area used for VPN                                                                                                                             |              |
| IP enabled PBX | Fixed                   | ✓                   |                  | - Enables existing circuit-switched PBX with addition of new hardware interfaces and generic software to upgrade to support IP telephony options                                                                |              |
| IP PBX         | Fixed                   | ✓                   |                  | - IP based PBX solution, where sub-station is connected via IP/SIP to the branch exchange  
- Cross linking and integration of different sites via IP possible                                                                                                        |              |
|                | Mobile                  |                     |                  |                                                                                                                                                                                                             |              |
| Hosted IP PBX  | Fixed                   | ✓                   |                  | - IP-PBX located offsite in the carrier's data center and dedicated to a single client  
- Administration can be split between carrier and customer, carrier is responsible for maintenance                                                                         |              |
|                | Mobile                  | ✓                   |                  |                                                                                                                                                                                                             |              |
| IP Centrex     | Fixed                   | ✓                   |                  | - At operator-side centralized IP-PBX, where customer can order a flexible number of sub-stations and features  
- The customer does not operate and maintain the system and the carrier can service multiple clients – "managed services"                                   |              |
|                | Mobile                  | ✓                   |                  |                                                                                                                                                                                                             |              |
Future-proof telephony solutions for enterprises

MIGRATION PATH

Unified communication through
- Converged voice/data service

Cost savings through
- “Pay as you grow”

Service Outsourcing of ICT
- Transfer of technical responsibility
- Focus on core competences

PBX at the enterprise premises
- Initial investment
- Capacity limitation
- Technology commitment

Mobile VPN service
- Service independent from fixed
- Own tariff model

Internet connection
- Internet services

ICT enabled enterprises concentrate on their core competence
Offering „managed services“ for enterprises

> Enterprises got charged from:
  - Purchase / lease PBX from the full service provider / system integrator
  - Fixed line call minutes charged from the fixed line / full service provider
  - Mobile access (e.g. VPN service) charged from the mobile operator
  - Broadband access charged from the fixed line / full service provider

> „broadband takes it all“ through:
  - Leverage xDSL broadband access
  - One fully integrated enterprise communication network
  - Offering a convergent Voice/Data service to SMEs
  - Extend the customer base
  - Additionally capturing fixed line call minutes
  - Ready for Technology change and substitution process

> „mobile takes it all“ through:
  - One fully integrated enterprise communication network
  - Offering a convergent mPBX service to SMEs
  - Extend the customer base
  - Additionally capturing fixed line call minutes
  - Leverage UMTS broadband access
  - Ready for Technology change and substitution process

Increase ARPU through managed services portfolio
Enterprise telephony solutions to be expected 2010


Telecom trend: managed services
High potential for operators to increase business

> **Mobile operators**
  - IP Centrex / NG mPBX offers opportunity to capture business voice segment
  - Mobile operators attack fixed voice business market

> **Alternative operators**
  - Enlarge their business client base
  - Attack tariff revenues of incumbents

> **Incumbent operators**
  - Slowly migrating as they cannibalize existing TDM business services
  - Secure their tariff and minute revenues

> **Global players**
  - Servicing business clients on global scale

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Enlarge footprint through portfolio extension for enterprises
There is a new revenue generator in the world: MissisSIPPi

Carrier VoIP Services
Solution Portfolio
Future-proof telephony solutions for enterprises

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ICT enabled enterprises concentrate on their core competence
Next Generation ICT Services with MissisSIPpi

- Residential VoIP
- IP Centrex
- VoIP Routing
- NG Mobile PBX
- Special Projects IP PBX
- Basis
Mississippi – Architecture Overview

IN System

Services

SCP

Mobile / Fixed Network

HLR

GGSN

PLMN

PSTN

Access:
BSS, UTRAN, WiMax, WLAN
PRI, BRA, POTS

Devices:
GSM/UMTS Mobiles, PDA, SCO
Local Breakout, Gateways

Application Server

Provisioning/Network Mgmt.
Fast Service Enabling

Monitoring/Alarming, Backup
Alarm & Backup Mgmt

Conferencing, IM to SMS
Flexible Billing Format
Billing Mediation

Media Server

Voicemail, Early Media
Plug & Play PBX Service
Content Storage

Installation Platform

„One Click“ Installation
H2, H3 Support
Lawful Interception

IP Centrex

Mobile PBX

Residential

Services

SCP

IMS

S-CSCF

HSS

I-CSCF

P-CSCF

MRF

Access:
UTRAN, WiMax, WLAN, MGW

Transport:
SIP Mobiles, SCO, CTI, Soft Clients

Broadband

Session Border Controller

Access:
xDSL, Cable, Broadband

Devices:
SIP Phones, Soft Clients, SCO, CTI
Software Components

> IP Centrex
  - Centralized Routing
  - User Registrar & Presence
  - Centralized Feature control

> Feature Server
  - Powerful J2EE SIP Application server for fast and easy service development

> Content Server - Plug & Play
  - Centralized storage for voicemail, announcements and client configurations

> Provisioning
  - Easy to use, Web based, centralized management of all relevant components
  - Multi Client capability and role based security concept, Customer Self Service
  - Easy integration through standardized XML interfaces

> Installation platform
  - Fully automated, easy to use, web based rollout and configuration of ALL soft clients

> Billing Mediation
  - Mediation of Call Data Logs into IPDRs
  - Integration in existing billing system

> Backup and Alarming
  - Easy integration in existing umbrella management
Interworking Platforms

> Gateways to the PSTN network
  - Industry leading Audiocodes Mediant with OT SW (for SS7)
    - Mediant 2000 up to Mediant 8000 (up to 16,128 concurrent channels per Mediant 8000)
    - E1 or STM1 interfaces
    - State of the Art codec support (including T.38 for FAX)
    - Carrier Grade

> Media Server – Audiocodes
  - Voicemail, Announcements, Conference Rooms, Early Media
    - IP Media 2000 up to IP Media 8000
    - Supports all industry standard Voice Codes with transcoding in real time!
    - Carrier Grade

> Session Border Controller – Jasomi/Ditech Communications
  - Network boarder, Security, solves NAT/FW problems
    - Carrier Grade
    - Real Media Path Optimization for Voice rtp traffic
**Clients**

- **SIP Phones and IADs**
  - With Zero touch configuration
  - To be announced
  - With centralized web based configuration

- **CTI Client**
  - Dial from Outlook and Lotus Notes
  - “instant dialing from any application”
  - “one click” installation & upgrade

- **Business Soft Client**
  - Feature rich easy to use SIPPS clients
  - “one click” installation & upgrade

- **SIP Call Operator**
  - Company address book
  - Presence Information
  - Support of Call Queues
  - IM, SMS, EMAIL
  - Log On/Log Off
  - Call recording
  - Drag&Drop call transfer
Featureset

- Calling Line Identification Restriction (CLIR), Calling Line Identification Presentation (CLIP)
- Speed Dial, Redial, Recall
- Direct Dialing Incoming (DDI), Direct Dialing Outgoing (DDO)
- Call Forwarding Unconditional (CFU), Call Forwarding Busy (CFB), Call Forwarding No Reply (CFNR), Call Forwarding Selective (CFSE), Call Forwarding Timeout (CFTO), Call Forwarding UnRegistered (CFUR)
- Voice Messaging / Voice Mail
- Conference Call
- User Groups
- ACD extensions
- Outgoing / Incoming Calling Plan
- Alternate Numbers (alias)
- Client Matter Code (CMC)
- Skip Feature on Loop
- Unattended Transfer, Attended Transfer
- Call Waiting (CW), Call Hold (CH)
- Manager / Secretary Team Feature
- Parallel Ringing (PRNG)
- Call Completion No Reply (CCNR), Call Completion Busy (CCBS), Call Back Number (CBNR)
- Call Park, Call Pickup
- Music on Hold
- Early Media
- Night Mode
- Instant Messaging, SMS, Email
- Presence
- Call Queuing
- Pickup Call Queuing
- Conferencing Bridge
- …

> Others:
- Easy to use Web based Provisioning
- Zero touch client configuration
- „One Click“ web based installation of soft clients
Executive Summary

> Multiple Segments
  - Is attractive for providers and ISPs
  - It also addressed to the highly promising mobile market

> Features
  - Full set of features to fulfill customers demands

> Future Proof
  - future proof product based on IP and SIP
  - Based on existing Broadband Data Infrastructure
  - Kapsch Development Framework

> advantages
  - offers an end-to-end SIP-based solution
  - ICT optimization via IP Centrex/mobile PBX
  - high scalable centralized hosting platform

> Branding & References
  - Kapsch has a remarkable reputation in ICT optimization
  - Existing customer base

Future proofen platform for managed services
Reference customers (excerpt)

> TELE2 / UTA
  - Operator profile: Biggest Altnet in Austria, accelerate Broadband penetration through unbundling
  - Primary customer profile: residential with legacy telephony service, offering broadband
  - Mississippi deployment: “managed business voice service” over broadband

> UPC / INODE
  - Operator profile: Biggest Altnet/Cable provider in Austria, accelerate Broadband penetration through unbundling
  - Primary customer profile: residential offering broadband
  - Mississippi deployment: “managed business voice service” over broadband pipe

> KIELNET
  - Operator profile: Altnet provider in Germany, accelerate Broadband penetration through unbundling
  - Primary customer profile: residential legacy telephony service, offering broadband
  - Mississippi deployment: substitution of legacy telephony system based on residential voice service over broadband

> T- MOBILE AUSTRIA
  - Operator profile: largest mobile Altnet provider in Austria
  - Primary customer profile: residential legacy telephony service, offering broadband
  - Mississippi deployment: substitute legacy PBX telephony system based on NG mobile PBX solution
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All-IP VoIP Management

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