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# Residential Solutions

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Presentation Of  
SIP Residential Solutions

**Bogdan – Andrei Iancu**

[openser.org](http://openser.org)

[bogdan.iancu@voice-system.ro](mailto:bogdan.iancu@voice-system.ro)

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## What is VoIP?

- usage of IP infrastructure for voice communication
- covers both signaling and media

## Benefits:

- single infrastructure (IP-based)
- reduces calling costs
- easy integration with other IP-based services
- mobility and no-borders
- advanced and programmable services

**Composed services:** audio, video, IM & presence

**Targets:** residential, business, carrier grades

## Why?

- for ITSPs ⇒ new business case
- for ISPs ⇒ add-on service
- revenues:
  - low call cost by shortcutting telcos
  - as part of more complex and attractive services

## When?

- depends of how it is presented:
  - as service : is the service required on the market?
  - a way to cut costs : can the cost difference trigger the migration ?
- depends of the available IP infrastructure:
  - can the IP infrastructure sustain VoIP traffic?
  - does is reach the potential customers?

## How?

- technology and solutions are available
- no need for own infrastructure (but it might be a bonus)
- how to set up the platform?
  - hosted services
  - getting own platform



# Residential Solutions (II)

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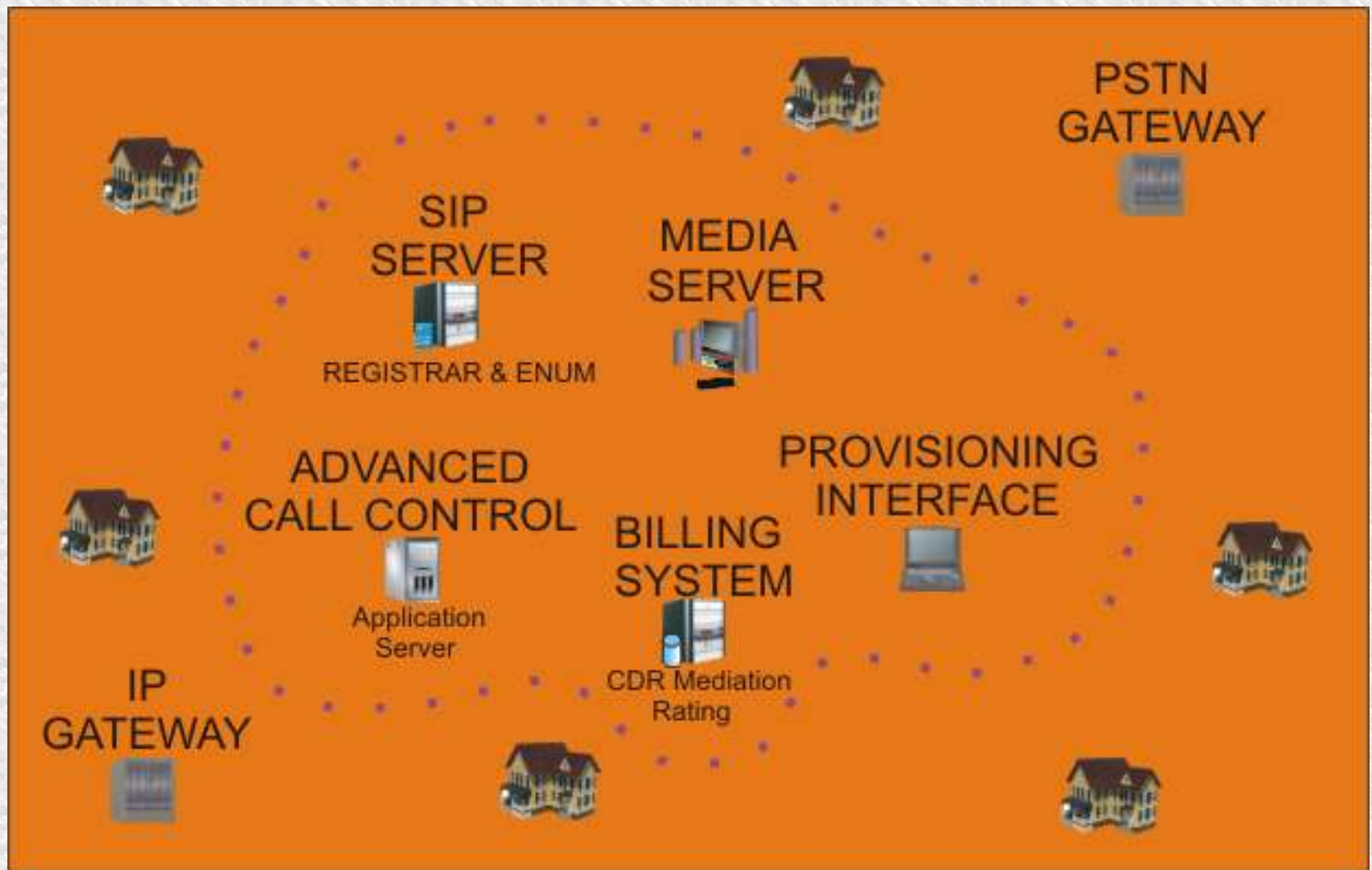
**End-user presence** makes it more challenging as model and technology:

- market presentation
- performance and security
- advanced end-user services

The model depends of the **local culture**:

- which is the targeted benefit
- what services should be deployed
- more packages to address more customers

# Residential Platform



## **Infrastructure:**

- Nat traversal (more than 70% in Europe)
- QoS – available bandwidth and delays

## **Devices to be used (be RFC compliant!):**

- software – free and brandable (XLite, Kphone)
- hardware phones – more expensive, duplicates phones
- hardware ATA – reasonable price, merge with PSTN line



## **Provided help:**

- from subscription to payment time
- customized advisory

## **Available support:**

- prompt and reliable
- efficient troubleshooting

## Dialing:

- aliases
- speeddial
- virtual PBX
- ENUM

## Call control:

- call forward :
  - permanent
  - on not available
  - on no response
  - on busy
- incoming call filtering (white/black lists)
- outgoing call baring

# User Perspective – Services (II)

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## **Privacy:**

- caller -ID support
- anonymous support
  - in VoIP network
  - in non-VoIP interconnected networks (like PSTN)

## **Media Services:**

- voicemail
- conference
- announcement

## **Instant Messaging and Presence**

# User Perspective - Interfaces

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Allows **access to user account** configuration.

**Multiple language and timezone** support.

Hide the complexity under an **intuitive layer**.

Basic configuration should be available via:

- WEB: http/https
- IVR
- dialed numbers

# User Perspective – Interfaces (II)

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## Interface components:

- subscription & package selection
- service provisioning
  - possibility to manage all available services
  - transparent information
    - permissions and ACLs
    - call history and records
  - on-line help/hints
- integration with payment services



## **Integration:**

- web
- database (choose proper DB back-end)

## **Interconnection:**

- PSTN: rented from wholesale provider or own one
- messaging: SMS, IM (Jabber, Yahoo, ICQ, AIM)
- inter SIP domains: keep it open!

## **High-Availability:**

- get as close as possible to the five nines (99.999%)
- SIP Server failover (detection and switching)
- gateways redundancy and database replication

## **Management Interface:**

- service and subscriber management
- statistics and monitoring

# Provider Perspective - Security

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**Open System** ⇒ needs more protection from outside intrusions

**Complex services** ⇒ more protection due vulnerability

## **Security concerns:**

- SPAM protection: authenticate and overcheck your users to maintain domain credibility and void stalling calls or user impersonation
- Gateways protection: strict control and permissions over payable services

# Provider Perspective – Security (II)

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## More security concerns:

- CDR protection: be sure to force and validate the information stored in CDRs
- DOS attack protection: be able to identify and combat malicious or accidental floods
- Secure routing: use TLS for signaling and encrypted RTP for media

# Provider Perspective - Billing

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**CDR mediation** in context of advanced services (like CF).

**Rating plan** flexibility and complexity.

## **PostPaid:**

- easier and affordable
- hot-spots: CDR generation and rating
- off-line processing versus no real-time cost control

## **PrePaid:**

- complex and more expensive
- hot-spots: real-time call control and CDR rating
- intensive real-time processing versus real-time cost control



## **For geographical distributed population:**

- a proxy serves a population group and routes between groups
- better load balancing and low time for service response
- groups can operate also individually
- local dialing plan will be required

## **For redundancy/efficiency configuration:**

- a farm of synchronized proxies serve the whole population
- low time for service response
- each proxy may sustain the entire service for whole population

## For distributed resources:

- resources may be gateways, media servers, media relays
- multiple gateways may require dynamic routing (particular case is Least Cost Routing - LCR)
- QoS may be affected by long media path  $\Rightarrow$  place local media servers and NAT relays

# Distributed platform - showcase





- **VoIP is happening** – technology and infrastructure
- **attractive** as low costs and value-added services
- **infrastructure** is no more an issue
- brings new power via **global and mobility aspects**
- it addresses to **different population via different targets**
- ready to offer a **secure and integrated environment**
- all **satellite services** are in place
- **distributed and global solutions** are available