

# Internet Telephony and Regulation

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## Vision

As broadband becomes ubiquitous, most voice calls will migrate to the Internet using free software, on the edges of the Internet, that removes barriers to more natural forms of communication.

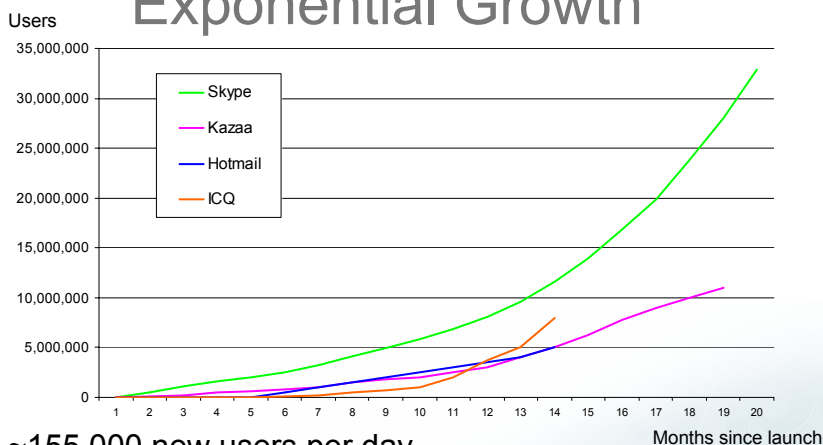
That software is Skype.

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## Exponential Growth



~155 000 new users per day

~33 M registered users, in all countries in the world

~1.2M SkypeOut accounts

~1.5B minutes per month (22% monthly growth)

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# Telecom Transition

## 1. Many Networks Become One

- We used to have vertical solutions, one network per service:
  - PSTN, X.25, Frame Relay, IP, Telex, etc
- The Internet is becoming the one and common carrier for all services
- We have various wireless access technologies to this network (WiFi, 3G, WiMax, ULW, ...)

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## 2. The Phone is Becoming a Computer

- Open OS (Linux, Symbian, Windows Mobile, etc)
- Powerful CPUs
- Connected to the Internet via various radio networks (multi band)
- Easy do install an app, e.g., telephony on the phone

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## 3. Telephony is Becoming an App

- An application that you run on a computer
- Computers have different form factors
  - Desktops, Laptops, PDAs
  - Mobile phones
  - Embedded (everywhere)

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## ...New Game with an App

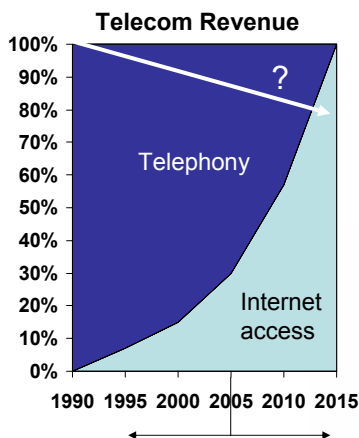
- Economics
  - Zero customer acquisition costs
  - Zero marginal costs per call minute
  - You can't charge for calls anymore
- Distribution
  - Network independent – worldwide market
- Innovation
  - Software development product cycles rather than network infrastructure (10 years+)

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## Carrier Implications



- VoIP is driving broadband sales
- Operating one network is more cost efficient than one network per service
- Examples:
  - BT 21st Century Network
  - TeliaSonera
  - HGC

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# Regulation and VoIP

## The Need for Regulation

- Why do we have regulation at all?
  - To ensure consumers gets decent services where there is a market with dominant players
  - Not to stop innovation and to protect incumbents

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## Should We Regulate VoIP?

- VoIP is voice so lets regulate it – **NO**
- VoIP is a software application, not a network – don't treat it like one
- VoIP is highly competitive on a global basis so the market will ensure consumers get great services (free telephony is a pretty good offer)

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## Regulate the Incumbents

- VoIP is a nascent technology that need to
  - Interconnect to the PSTN
  - Be delivered over third party Internet access
- Those networks are mainly provided by incumbents or second operator in an oligopoly market.
- They have incentive to stop others VoIP
  - Don't let them (not good to restrict consumer choice)

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## PSTN Interconnect

- Make VoIP (SIP) a standard interconnect protocol for incumbents
  - Multiple VoIP providers will be able to easily provide services
  - Switches are coming with SIP interface anyway

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## Numbering

- VoIP customers are nomadic
- They must be able to get **geographical** numbers without any discrimination
- Existing geographical numbers are not fixed – users can have a follow me service
- US is a single market with regards to numbers, don't allow EU to be less competitive

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## Nomadic Numbers Benefit

- Users can connect with their computer/phone anywhere there is an internet access and be reached via their geographical number
  - Subscribers saves money on roaming
  - Callers can call cheap local calls rather than expensive calls to mobile
- If it's a network issue let it be, but don't regulate it (de, at, fr,...)

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## Virtual Numbers Benefit

- We want to make EU a single market
- A business in e.g. Luxembourg can have virtual VoIP numbers in France, Germany, Hong Kong, USA, Sweden, etc
  - this enables the company to be competitive and Europe to act as a single market
  - Don't force users of numbers to have to terminate the call in the geographical area – what good does it do to consumers and the single market?

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## Access Provider Monopoly

- Broadband access is dominated by incumbents
- Wireless access market (3G) is an oligopoly
- They feel threatened by VoIP
- What may they do – block, throttle and threat
- Follow FCC's example and make it illegal for any network provider to block or throttle VoIP (let the consumers have choice)

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## Local Loop Unbundling

- As long as consumers can't get DSL without a phone line there is no real alternative to the incumbents phone service
- Don't allow incumbents to rebalance their tariffs towards their monopoly asset (access line)

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## Summary

- Voice is becoming a software application
- No benefits of regulating VoIP
- Regulators role is to ensure that VoIP can
  - easily interconnect with PSTN
  - Access to numbers and allow virtual numbers and nomadic use
  - Stop network operators to abuse their situation by blocking, not unbundling or rebalancing prices

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