Elisa Communications Capital Market Day

Radiolinja

February 7-8, 2001
Kuusamo
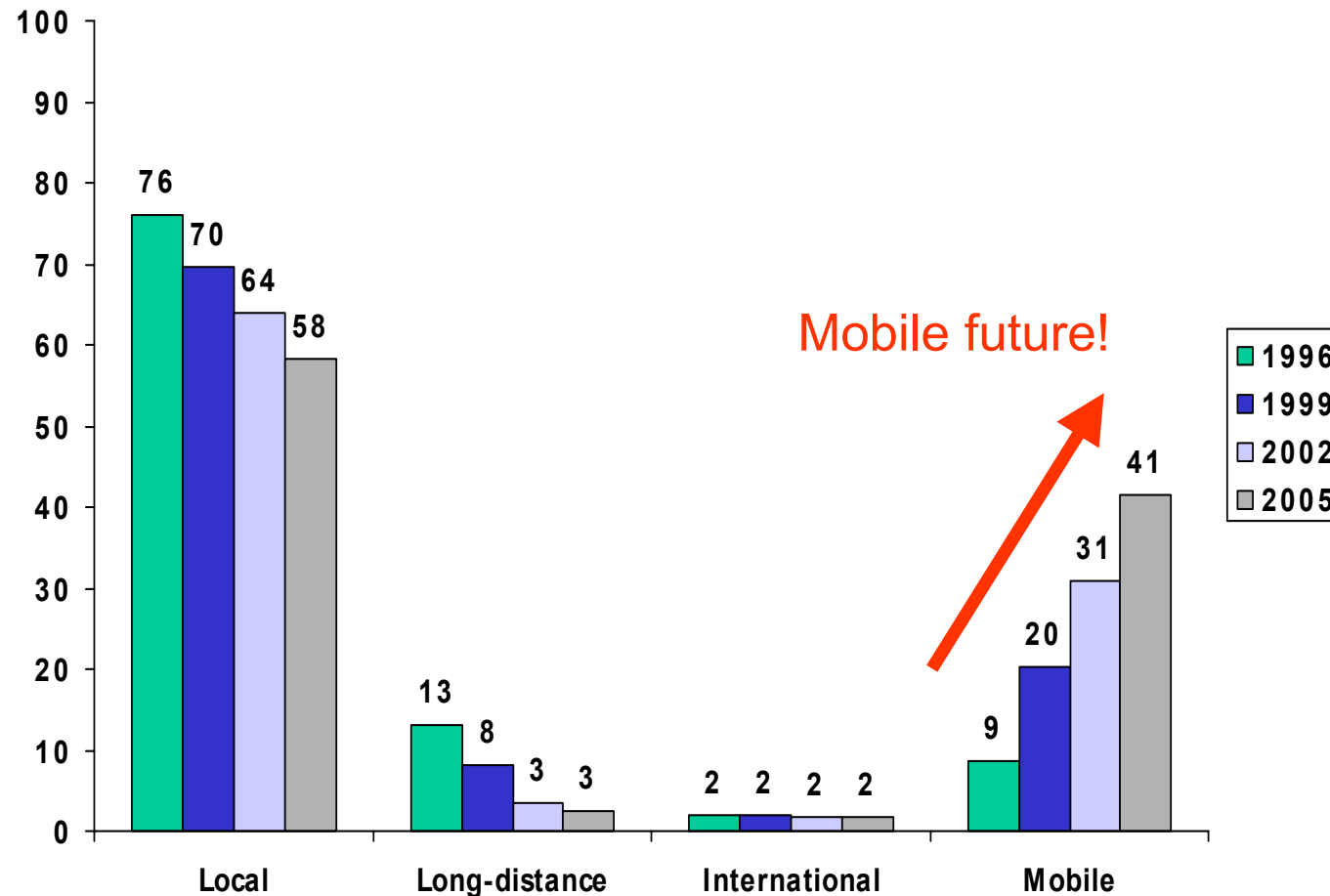
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Some trends in
Finnish mobile business

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Mobile traffic is increasing rapidly

Usage of networks - minutes (%)

Mobile future!

Legend:
- ■ 1996
- ■ 1999
- □ 2002
- ■ 2005

Chart data:

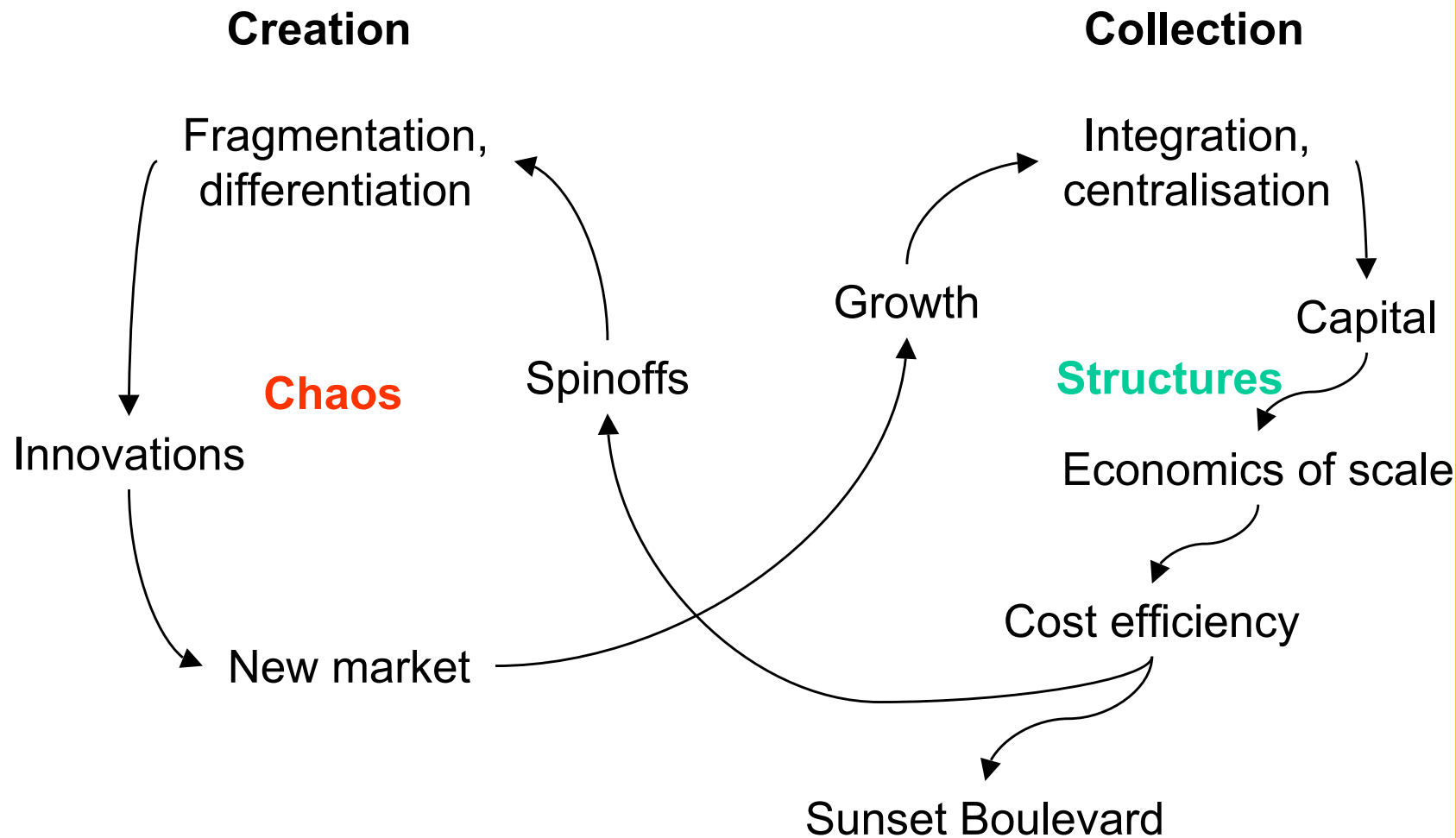|	1996	1999	2002	2005
Local	76	70	64	58
Long-distance	13	8	3	3
International	2	2	2	2
Mobile	9	20	31	41

Source: Ministry of Transport and Telecommunications

Competition is increasing and market structure is changing

**1999-2000
2+G comp.**

- 2 MNO
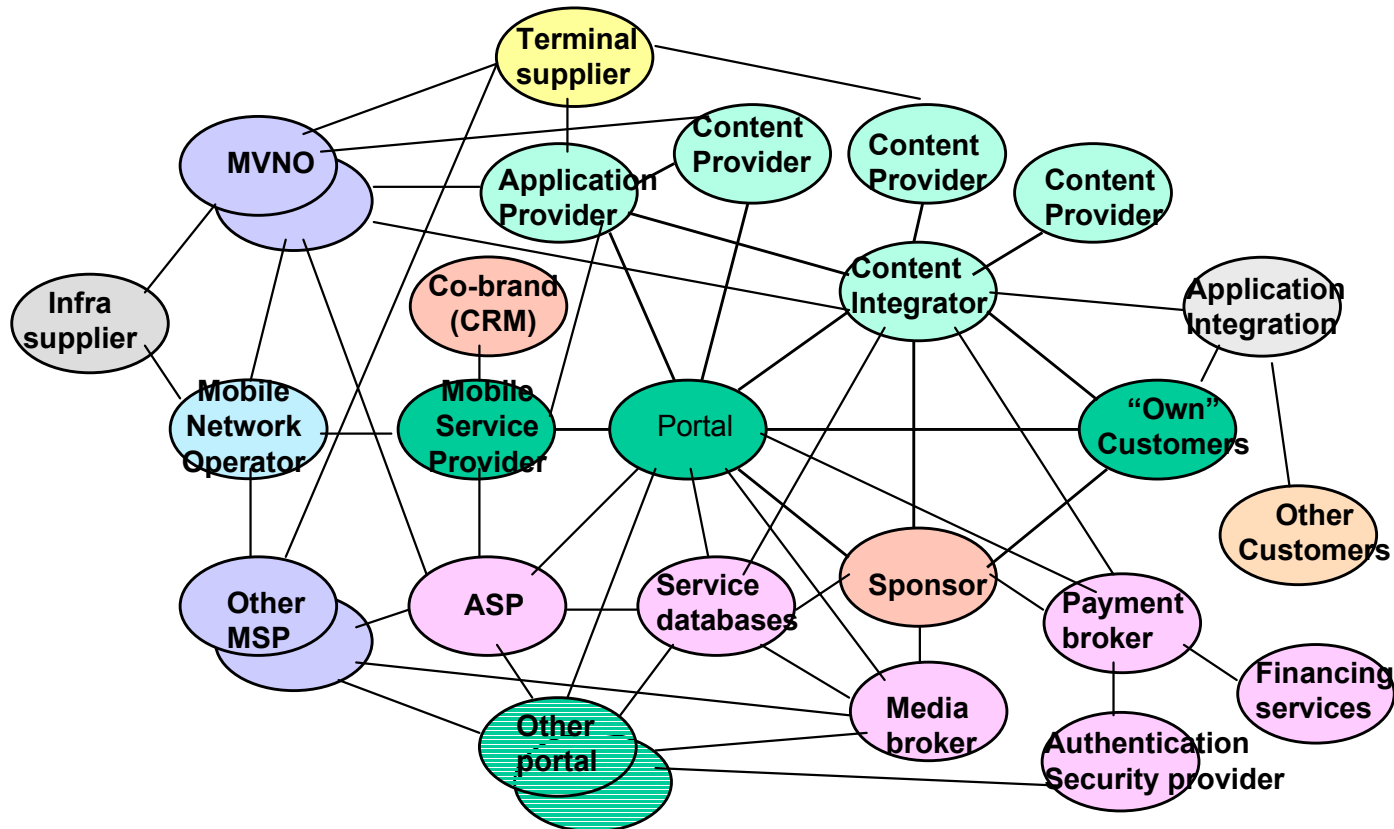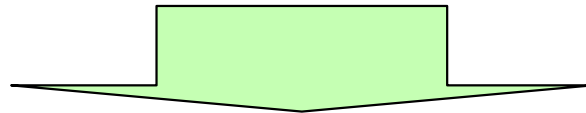- n city
- 5 MSP
- 1+n LSP

**banks,
ISP's,
media houses,
IT-houses?**

**1997-1998
2G comp.**

- 2 MNO
- n city
- 3 MSP
- 1+n LSP

dna
2G

Telia

RL

Sonera

RSLCOM
Saunalahti

2G+3G   Telia

RL

Sonera

RSLCOM
Saunalahti

**2001-2002
2,5G comp.**

- 3 MNO
- 1 city
- 6+ 1-4 MSP
- maybe MVNO

**2002 =>
3G comp.**

- 4 MNO
- nat.roaming?
- many MSP
- few MVNO

Finnet Telia

RL

Sonera

RSLCOM
Saunalahti

**=> 1997
2G duopoly**

- 2 MNO-SP

Finnet Telia

RL

Sonera

RSLCOM

RL

Sonera

Business life cycles

Creation   **Collection**

Fragmentation,   Integration,
differentiation   centralisation

                                                Growth

Chaos   Spinoffs   **Structures**   Capital

Innovations   Economics of scale

New market   Cost efficiency

                                                Sunset Boulevard

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Value chain is changing to value network(s)

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Business evolution

Growth business   Mature business

Market creation

Technology   *Services*   *Customership*

Functionality   Solutions   Lifestyle
Features   Applications   Processes

One-size-fits-all   Generic segmentation   One-to-one-segment
Mass market   Mass Customisation   Niche market
                                              Differentiation

Standard defines the service   Operator defines the service   Customer defines the service

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Migration from 2-2,5G towards 3G

Basic assumptions

- New culture has to be created now, well before 3G
- Corporate segment will be the first adaptor (GPRS, 3G)
- GPRS will enable most of 3G services
- Existing Internet based services will be the first killer apps (banking, news, email, calendar…)
- Lifecycle of new services is shortening
- Terminal availability and user interfaces will be crucial factors for development
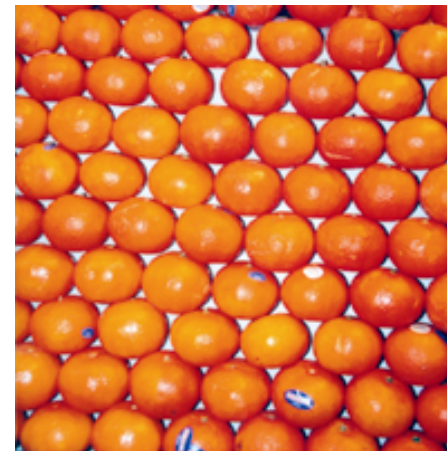
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GPRS is part of evolution

- Critical success factors
  - pricing should be sensible and predictable
  - wide range of "easy" services
  - right terminal pricing
- GPRS-terminal delay is major threat
  - for launching network services!
    - Radiolinja will launch services when there is a relevant market (terminals available)
- GPRS will be part of 3G
  - 3G as an urban coverage
  - GPRS as a rural coverage
- Assumption: in 4-5 years data volumes will exceed voice

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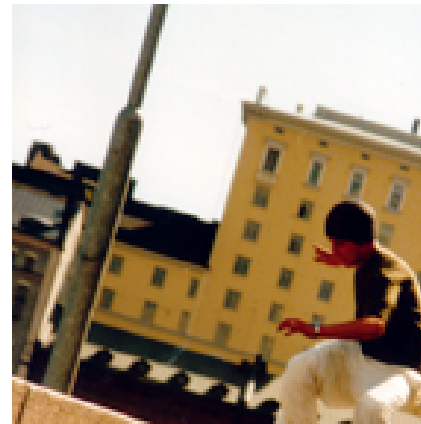
Speed handicap disappears with new technology (?)

- Back to reality...
  - GSM: 9,6..14,4 kbit/s
  - HSCSD: 14,4..56 kbit/s (like modem)
    - theoretical maximum 115 kbit/s, but requires whole capacity for one user…
  - GPRS: 20..40=>80kbit/s (like ISDN)
    - theoretical maximum 115 or even 176 kbit/s, but requires whole capacity and perfect radio environment for one user…
  - EDGE: 100..200 kbit/s (like double ISDN)
    - theoretical maximum 384 kbit/s, but requires whole capacity and perfect radio environment for one user…
  - 3G: 144..384 kbit/s (like low ADSL or triple ISDN)
    - theoretical maximum 2.000 kbit/s, but requires whole capacity and laboratory environment for one user…

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Radiolinja's approach

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Radiolinja

Vision

- A leading provider of wireless communication services in Finland and the Baltic countries, including both business and entertainment
- Competent value added service provider on selected foreign niche markets

Mission

- Radiolinja creates a wireless lifestyle and Mobile Society

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Our business environment is changing

- Basic market growth (subscriptions) is slowing down due to market saturation and price erosion.

- Competition is increasing due to many new market players.

- Mobile telecommunication is facing heavy changes in market structures - media, it and telecommunication are truly converging.

- New business concept and non traditional alliances are formed.

  - Sales channels are under a big change - operators need to control distribution channel with ownership.

  - E-commerce is challenging traditional distribution channels and new value added services, data and content, request new sales competence differentated by products and also by customer segments.

  - Infrastructure finance costs (leasing) are increasing according to traffic volumes

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Core business areas

- Service provider business
    - Residential customers
        - We focus on customer intimacy (strengthening customership, segmentation and loyalty, high quality contact center services, mobile portal services, simplified pricing concepts)
        - We investigate new business concepts like mobile advertising and location based services
    - Business customers
        - We focus on customer intimacy (key account concept, regional organisation)
        - We are seeking new growth from
            - enterprise applications integration (extending ERP, CRM, SCM, legacy systems etc. on mobile)
            - putting new focus on SME customers (deeper segmentation, new products, new sales/distribution concepts)
    - Focus is on customership - not on technology. You must know your customers and learn their needs!

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Core business areas

- Mobile network operator business
  - MVNO, ESP and SP services
    - We focus on getting new customers to our domestic network
    - We are investigating international opportunities for new business (e.g. with Elisa in Germany)
  - New MNO business
    - We are seeking new mobile operator business opportunities from carefully selected markets (primarily in Baltic countries: Lithuania, Latvia)

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Towards
customer specific brands

- We aim to produce long-lasting competitive edge through the concept of customer relationship management. The first brand customer concept - DJ Esko - sells, markets and develops products and services for youngsters and pioneers.
- Promises made in communications are redeemed in every action, in every contact between the customer and Radiolinja.
- Emotional leadership: Radiolinja - enhanced quality

New business areas

- Mobile portal services
  - mobile internet
- Content services
- M-commerce
- Telematics, localization

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DJ Esko 1.0 service pack for pioneers

Wireless lifestyle, Mobile society- examples

- Radiolinja has launched the DJ Esko 1.0 service pack for pioneers and mobile telephone users that are young at heart.

  - WAP-like menu and services

  - personal Internet connection

  - saldo account reminder

  - Ilmari e-mail service

  - comprehensive range of text message services

    - weather

    - dictionary and topical services

    - game and other leisure services

DJ Esko

JLa   18

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New emerging business areas

- Market has to be created
  - Mobile portal services
    - We provide Mobile portal platform -concept and mobile internet access (through WAP, GSM LAN, GPRS, 3G)
  - Content Services
    - We focus on 3 main areas
      - Lifestyle services (e.g. church, fitness)
      - Entertainment (e.g. mobile games)
      - Information (e.g. localised communities)
  - Telematics, location services
    - We focus on 3 main areas
      - Telemetry (machine-to-machine services)
      - Location based services (navigation, information push, enquiries, billing, advertising)
      - Locationing (fleet management, tracking)
  - M-commerce
    - We are developing authentication/security services (e.g. PKI, WIM) and mobile payment services (e.g. EMV)

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New emerging business areas

- Strong potential for global markets
  - New innovations and concepts will provide business opportunities even for a global marketplace

- Demand for high quality partner network
  - Success in new business areas will be based on partnering. There will be strong emphasis on creating strategic partner network.

- Radiolinja's "Gee-Lab" provides future technology piloting environment for innovators and partners
  - Open environment emulating 3G (and even beyond 3G) infrastructure and platforms for testing potential services and applications
  - Lowering barrier for potential partners to develop and test new killer apps

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Mobile portal platform

Wireless lifestyle, Mobile society- examples

- Radiolinja has developed open Mobile portal platform concept for portal providers willing to extend portal services to mobile users. Concept can be tailored from a specific service element to full turnkey solution.

  - Authentication services
  - Location based services
  - Billing services
  - Payment services
  - Transaction clearing for content providers
  - SMS and WAP application platforms
  - Contact center services

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Summary

- Yes, there is change(s) going on
    - convergence, migration to 3G, competition, maturing of mobile communications market
- Radiolinja is ready for new technologies
    - GPRS will be launched parallel to major terminal launches
    - 3G will be rolled out 2002 according to plans
- Radiolinja is ready for business transformation
    - Business structure is trimmed for competition
    - Core business models are fitted for maturing market
    - Radiolinja is seeking new growth from new business areas where market has to be created and global opportunities are to be discovered
- Customership is more important than technology
    - New technology is not allowed to make customers' life more difficult (user interface, pricing, services etc.)

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Supplementary material

Radiolinja's approach - some examples

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A mobile remote for your home

- Radiolinja, together with ABB Control Oy, introduced the e-Näpsä! service, which enables wireless remote control of home's electrical systems through a WAP phone.

  - At its simplest e-Näpsä! consists of an electrical distribution center and an integrated internet connection and WAP phone.

  - The system can be attached to web cameras, which deliver a desired view outside or inside the house through internet.

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Faster first aid with locationing

- Radiolinja, together with Finnish Red Cross, piloted locationing services, which enable field co-ordination of first aid paramedic units.

  - Enables faster direction of first aid to emergency spots

  - First aid personnel can be monitored at a map screen, which increases safety and enhance resource planning

  - GSM based locationing gives accuracy of 100 to 400 meters in urban area, GPS based locationing gives accuracy of 10 meters

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Safe electronic payment

- Radiolinja is developing a verification service relating to safe electronic payment together with the National Population Register Centre.

    - The service will provide Radiolinja's mobile phone subscribers with personal electronic identification verifiers.

    - Through the service, Radiolinja will be supporting the development of mobile e-commerce and will be offering its customers secure mobile telephone transactions with both commercial and public services.

    - The service will be introduced in early 2001.

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A world of mobile games at your service!

- Radiolinja's customers will soon be able to enjoy SMS-based mobile phone games developed by the Finnish company Riot Entertainment on the basis of various movie themes.

- The games are international - it is easy for players in different countries to play together.
- The first games of the new Radiolinja Game World are Titan AE and X-Men.
- Radiolinja Game World is constantly renewed.

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WAP phone as a teaching aid

- Radiolinja and CODEONLINE Oy, a developer of wireless applications for practical and entertainment use, have together implemented a pilot project in which the WAP phone was used as a teaching aid in elementary school.

- The pilot utilized technology that enables the making and publishing of questionnaires, and analyzing the feedback and results in real time using any chosen wireless or wired access terminal.
- The pilot aims at developing practical mobile technology that would promote co-operation and interactive learning regardless of time and place.

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Fun and entertainment: # WAP Golf Counter

- Radiolinja has developed a WAP Golf Counter that has been tested in Radiolinja's own golf tournament.

- You can access the counter by entering a given address on your WAP. On the startup screen, the counter asks for the player's name. When you have entered your name, you are transferred to the next screen. There you find CHOOSE COURSE, which is automatically set to correspond the course in use, and STEP ON THE COURSE, where you enter your handicap.

  - After this, the counter calculates your slope with the tee of your choice. Choose a tee and you can access the counter. The counter prints the number of the hole and a figure based on your par indicating the number of swings you need to get 2 bogies. When you have gone through all 18 holes, the counter will calculate your overall result.

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About basic market indicators

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What is penetration?

- Number of subscriptions devided by national population?
    - usually related (only) to personal services
    - basic assumption: subscriber = person
    - all types of subscriptions are divided by population, what does it tell about markets?

- How about e.g. Telematics and EAI ?
    - There is no human "users"… "user" may be computer, measurement device, machine, vehicle, monitoring system, payment/charging device etc.
    - how to define penetration in these markets..?
        - Example: 1 Mio personal users vs. 0,5 Mio personal users and 0,5 Mio telematic appliances - is the penetration comparable?

- There is demand for different penetration!
    - Penetration of personal mobile services (="traditional")
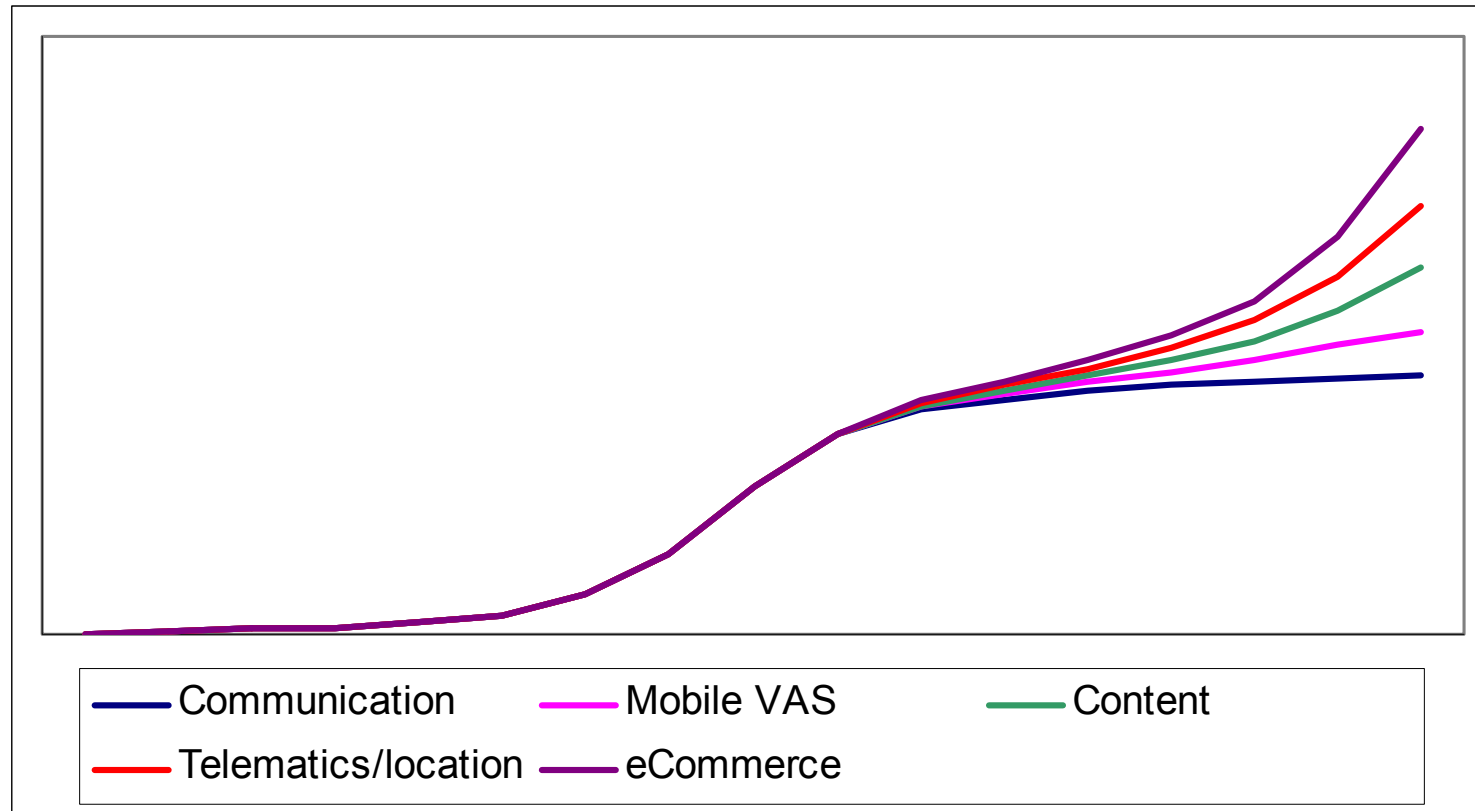   - Separate penetrations defined for different types of markets

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Development trend for business growth and penetration
"Traditional definition"

Mobile

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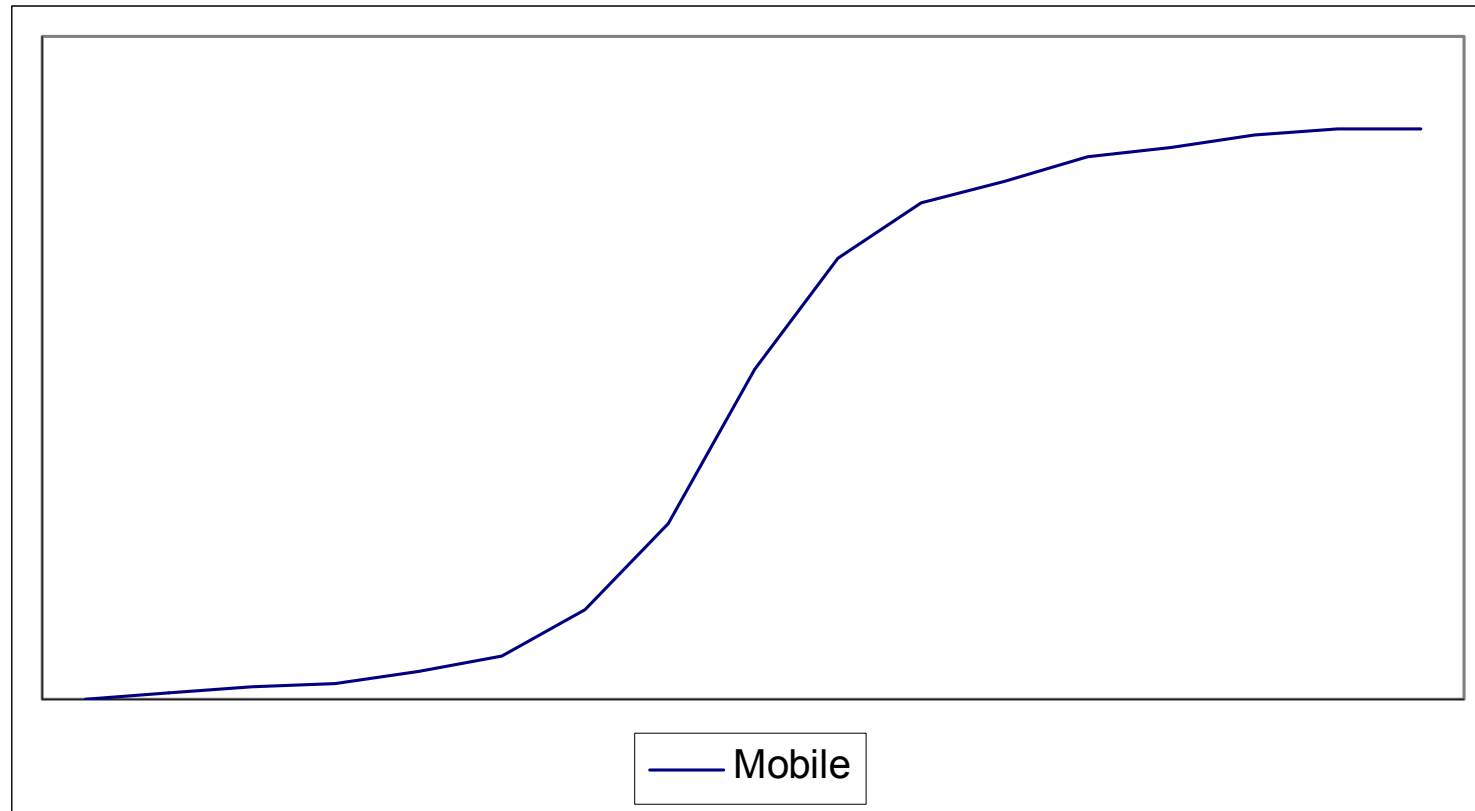
Development trend for business growth and penetration
Example only

Legend:
- Communication
- Mobile VAS
- Content
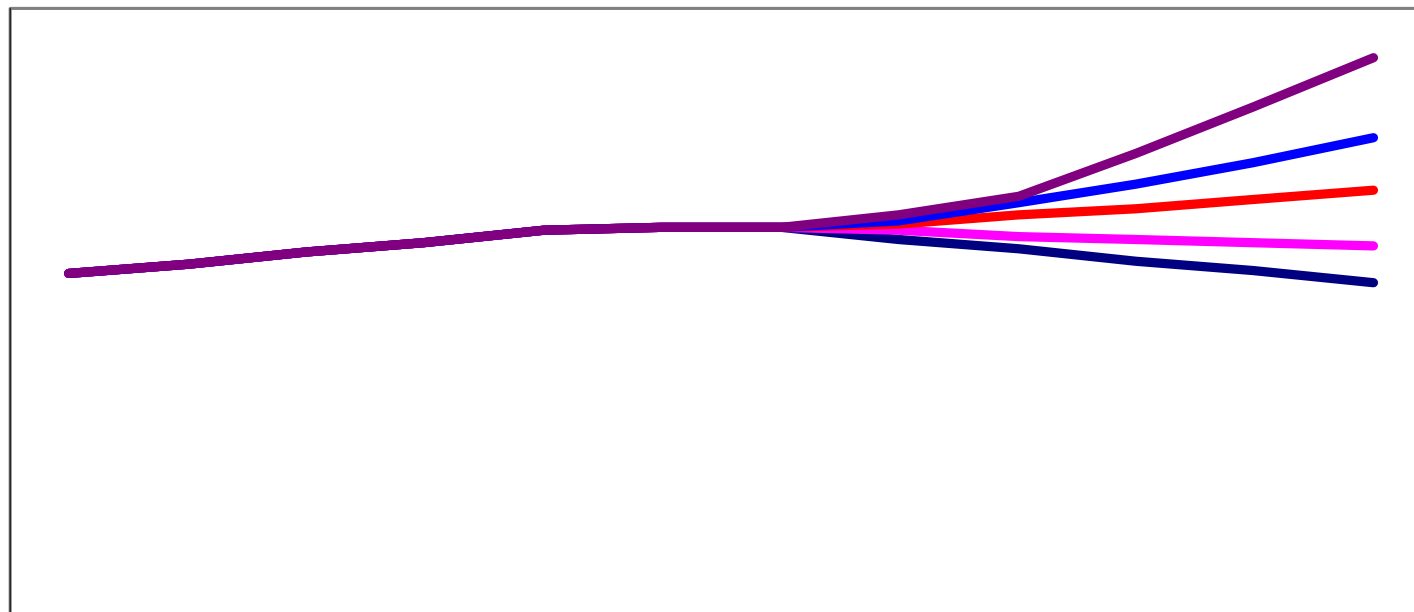- Telematics/location
- eCommerce

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What is ARPU?

- Average Revenue Per *User*
  - usually related (only) to personal services
  - user = person
  - all types of revenues are divided by people, what does it tell about nature of business?

- How about e.g. Telematics and EAI ?
  - There is no human "user"… "user" may be computer, measurement device, machine, vehicle, monitoring system, payment/charging device etc.
  - totally different revenue profile - with large deviation!

- There is demand for different ARPU's!
  - Averege revenue per **user**
  - Average revenue per **unit**

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Development trend for ARPU
Example only

Legend:
- Communication
- Mobile VAS
- Content
- Telematics/location
- eCommerce

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