Opening of The Day

Jorma Ollila
Chairman & CEO
Nokia

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Agenda

- Economic & Industry Environment

- Market behavior during transition

- Industry Trends

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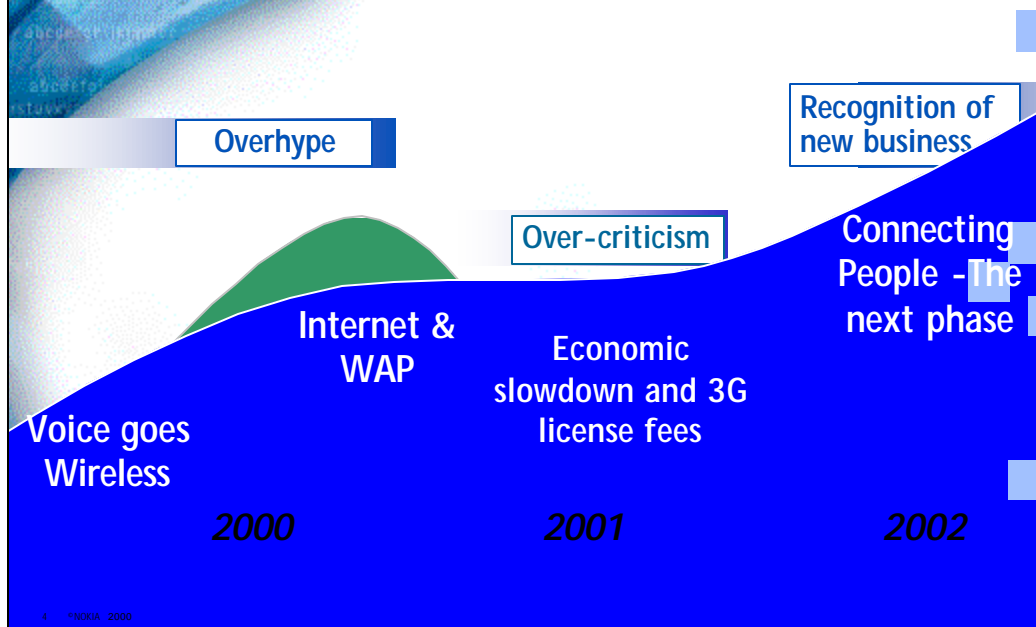
Changing Economic and Industry Environment

- Economic environment
- Digitalization of Content

There are specific issues that the communications industry is facing:

- New industry structures
- Extent of 3G investments
- Timing & usage of new Services

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Market Behavior During a Transition

Overhype

Recognition of new business

Over-criticism

Connecting People -The next phase

Internet & WAP

Economic slowdown and 3G license fees

Voice goes Wireless

2000

2001

2002

Industry trends

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Is the Business Model Changing?

What is Nokia's business model in the future?

- Software
- Hardware
- Services

Analysing software and hardware separately is not relevant

- One needs to combine software with hardware or
- Offer software as a service

> Nokia continues creating value from *combining hardware with software* - and offer superior 'Total Products' and solutions to Consumers and Operators

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Mobile Phones business model is evolving
- PC business model is not the right reference

- **Fact:** Mobile Phones are becoming intelligent devices with a lot of value added coming from software

- **False assumption:** PC type of business model is directly applicable:

  - Low value added from hardware
  - All value created in separate software & application layers

PC Industry Business model

Dominant Software Vendor

Low Value added Hardware

Dominant component Vendor

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Mobile Phones business model is evolving
- PC business model is not the right reference

- Open mobile architecture initiative
- Nokia's Mobile Software Strategy:
  - Licensing of source code
  - Terminal client & Server offering
- Total Product Concepts (end-to-end)
- Differentiation on multiple layers
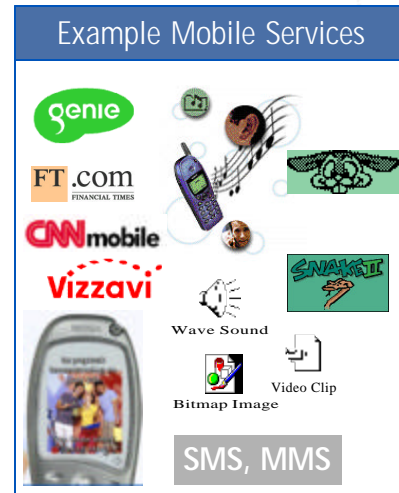- Open competition in component chipsets

Value Added remains within the mobile operator & vendor domain
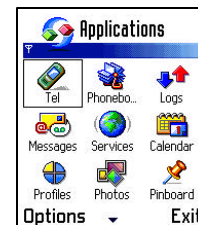
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New Mobile Services are emerging as we speak

- Open Mobile Architecture enabling non-fragmented global Service Platforms
- Technology enablers in place
- Operator billing capability & business model
- Host of attractive services to be launched
  - multimedia messaging, infotainment, games, business services, etc

Example Mobile Services

genie

FT .com
FINANCIAL TIMES

CNN mobile

Vizzavi

Wave Sound

Video Clip

Bitmap Image

SMS, MMS

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When will 3G become mass market?

- 3G handset availability - chipset maturity
- 3G infrastructure maturity - standardization
- Services availability
- Speeds offered by 3G
- Operator cash flow constraits
- Wait-and-see mode by operators

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3G infrastructure rollout is reality today –
3G services will emerge in H1-2003

- Nokia dual mode 3G phones in volumes in H2-2002
- 3G rollout takes time and it will happen gradually
- 3G WCDMA brings cost efficiency
- 3G is only incremental addition to operator existing Capex
- Drive for increased ARPU
- Competitive dynamics accelerate rollout

*Assuming high data usage

Cost of capacity*

GPRS   EDGE   WCDMA
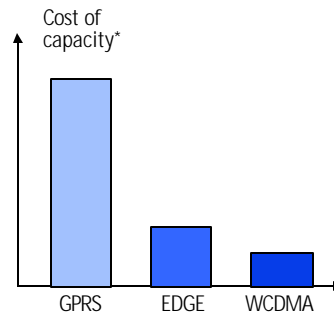
Nokia plans to deliver approximately 100 000 WCDMA carriers during 2002

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Complexity is increasing –
Mobile Phones are not a commodity

Perception:
- Technology advances are slowing down
- Product differences are disappearing
- Competitors are catching up
- Phone on a chip
- Technology outlicensing

A Phone is a Phone is a Phone is a Ph..

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Complexity is increasing –
Mobile Phones are not a commodity

Reality:
- New era of innovation in mobile terminals
- Accelerating technology advancements
- Diverging product categories
- Increasing role of software
- Importance of continuous product renewal

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CONNECTING PEOPLE

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