

A photograph of a person in a grey long-sleeved shirt and dark pants playing ping pong on an outdoor table. The person is holding a red paddle and is in the middle of a stroke. The table is blue with a white net. The background is a light-colored wall.

Value-driven technology management

NOKIA

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Executive Vice President
Technology Platforms & Nokia Design

Outline

1
Thinness done
right

2
Shift towards
commercial
technology

3
Increased
investments in
software

4
Touch UI for
mass volumes

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Thinness done **right**



Essentials for creating slim products

- Market understanding & portfolio planning
- Technology
- Implementation capability

Developments & Future Goals

- Battery-next-to-engine architecture – implemented
- ~20% reduction in size of next generation chipsets in 2008
- Introducing double-sided 3G engine in 2008
- Continuous size reduction of technology modules

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Chipset strategy: Investing in **modem technology** and focusing on broader **leverage** of external **innovation**

STRATEGY DRIVERS

- Market requirements diversifying
- Horizontalization of chipset supply increasing, capital intensity increasing
- World class multimode modem assets remaining in the hands of few, and carrying a lot of value

1. Invest in modem technology leadership

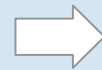
2. Move from in-house chipset design to commercial supply

Expected financial impact

In-house chipset R&D



Variable costs



Licensing revenues



Adaptation layer brings **scale advantages**

S30

S40

S60

Linux

Hardware-software adaptation layer and specified interfaces

Scale advantages

- Multiple suppliers ensuring supply, flexibility, quality and cost
- Component re-use across device portfolio
- Cumulative investment for adding new components reduced

External Innovation

- Flexible utilization of market specific solutions
- Key innovations fast to wide product range
- Long term relationship and growth strategy with leading suppliers

Chipset

Camera

Display

Audio

GPS

Other

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Software strategy

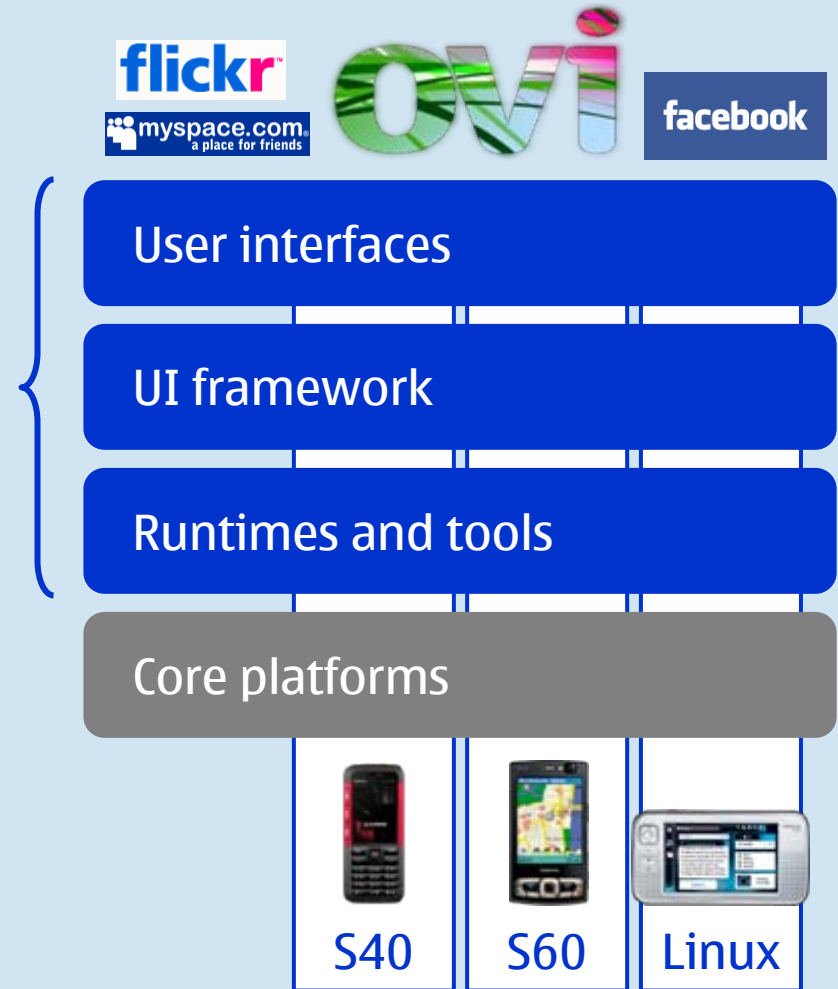
– leverage **higher abstraction level** in software development

1. Simplified development environment for Nokia and 3rd parties

- Rapid Web 2.0 development
- High development productivity
- Volume platform for services

2. Leverage open source innovation

3. Enable broad portfolio of products



Software strategy

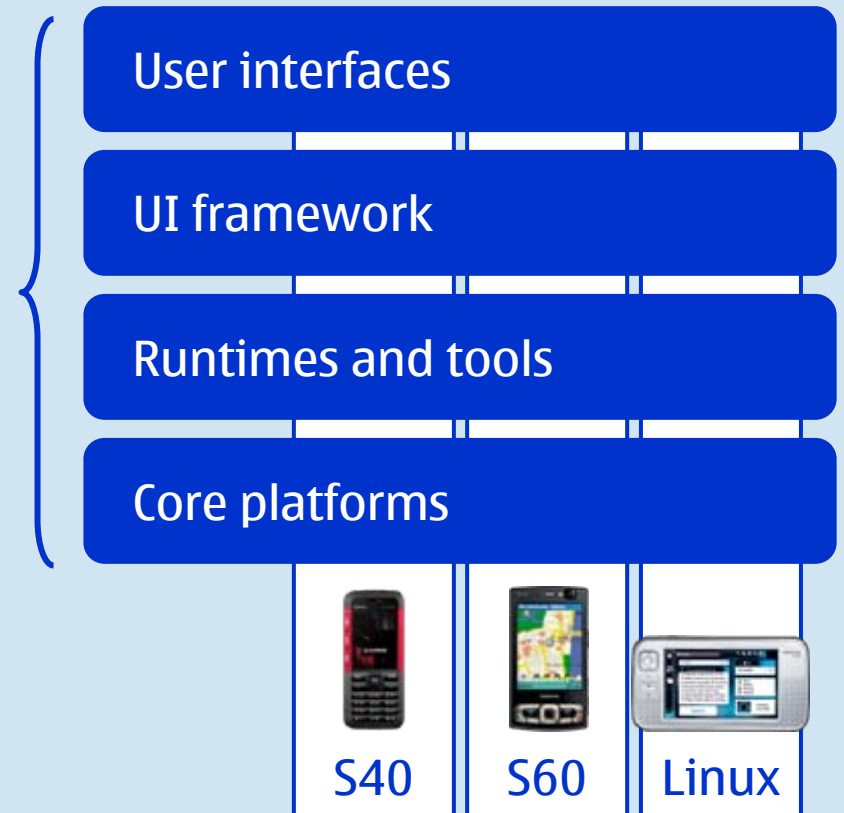
– leverage **open innovation**

1. Simplified development environment for Nokia and 3rd parties

2. Leverage open source innovation

- Innovation accelerators
 - Web application environment
 - Application development tools
- Scale benefits
 - Common multimedia platform
 - Common SW code libraries

3. Enable broad portfolio of products



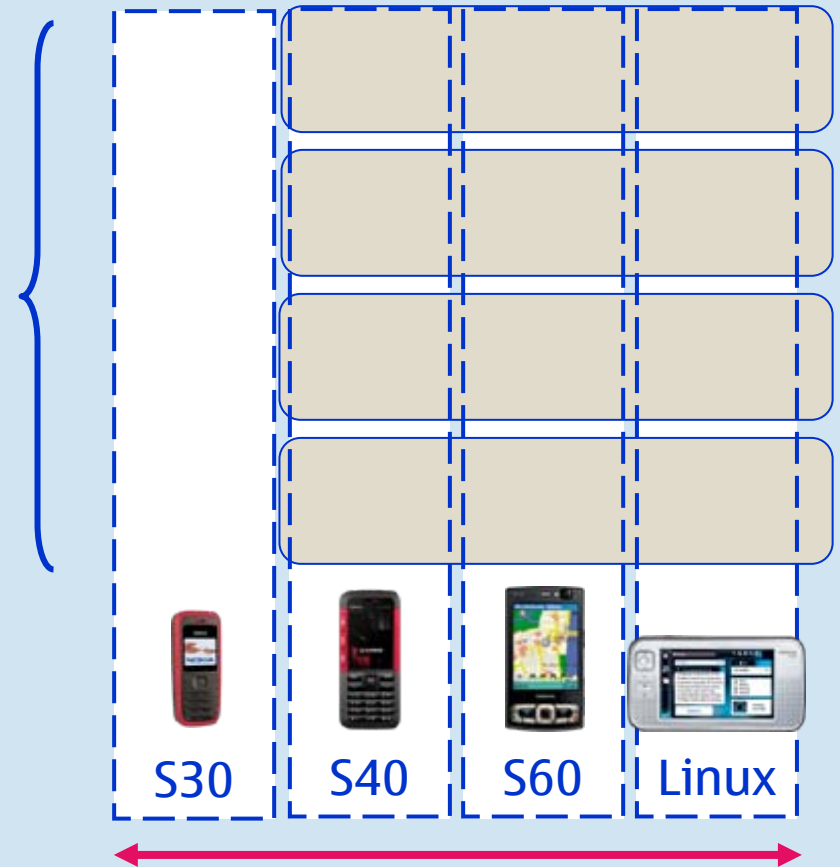
Software strategy

– optimize for **consumer needs** through multiple core platforms

1. Simplified development environment for Nokia and 3rd parties
2. Leverage open source innovation both in layers becoming commodity and innovation layers

3. Enable broad portfolio of products

- Support multiple core platforms for diverging needs of different consumers
- Balance product features with product cost



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Aligned technology selections for wide portfolio of touch-enabled devices

Touch UI

Application enablers

- Touch-enabled applications
- Running non-touch applications
- Developer APIs, documentation and services

User Interface Design

- Personalization
- Design and usability
- Functionality scaling
- Performance
- Input methods

Hardware modules

- Display technology
- Audio & tactile feedback
- Sensors

Software and hardware architecture

Complete touch-based user experience to mass volumes

Flexible - with or without keyboards

Intuitive - finger and/or stylus

Familiar - fast adoption

Multilingual - including Asian languages

Responsive - tactile feedback

Compatible - backward compatibility



Value-driven technology management

- Thinness is platformized
- Best feature/size fit
- Further improvements planned

1

2

- Continued modem technology leadership
- Multivendor commercial chipset supply
- Neutral financial impact estimate

3

4

- Web 2.0 cross-platform SW layer in progress
- Increasing utilization of open source
- Several core SW platforms to serve segmented consumer needs

- Touch UI being platformized
- Wide and diverse portfolio of touch-enabled devices planned



Thank you.

NOKIA
Connecting People