

Nokia IPR Landscape

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Agenda

- Patents and Standards
- Development of Nokia Patent portfolio
- IPR Landscape
- How does Nokia IPR Create value?



Patents and Standards

Patents



Purpose of patent:

- incentive to invent – return on R&D investment
- grants monopoly for a period of time
- worthless if not used
- defensive value:
secures freedom of action, reduces risk
- patent owner chooses if, who and on what terms to license



Implementation patents (non-essentials)

- no licensing commitments = greater freedom
- implementation patent can therefore be commercially very valuable
- majority of patent portfolio
- underpin product differentiation

Standards and patents tradeoff



Why standards?

- interoperability
- publication of technical specification
- developed by standardisation organisations
 - Governmental/commercial bodies
 - De-facto industry standards (e.g. TCP/IP, BT)

Essential patent

- Patent included in a standard
- Standard-compliant equipment must be designed according to the standard using the essential patents even if there were technical and commercial substitutes (“technically essential”)
- Obligation to license to all

ETSI

- responsible for ICT standardization
- 688 members from 55 countries
- Develops wide range of standards and technical documents as Europe’s contribution to world-wide ICT standardization

Standardisation organisations have agreed IPR rules



- **Patents:** promote technical development in standards
- **Basic Patent policy**
 - ETSI and other standards bodies require patent holders to disclose the patents claimed to be essential and to commit to license these patents on Fair, Reasonable and Non-discriminatory terms – so called “FRAND” terms.
- **ETSI IPR Rules:**

OBLIGATIONS

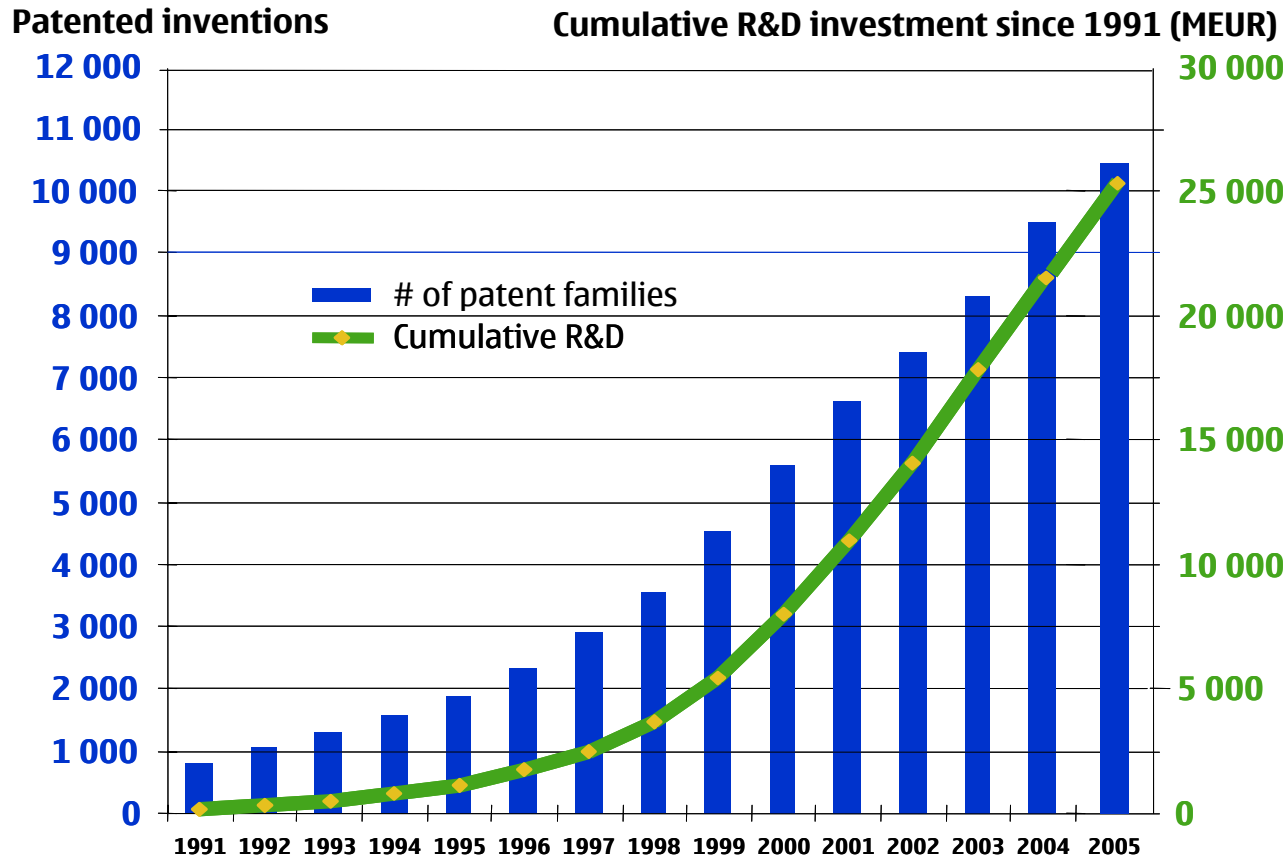
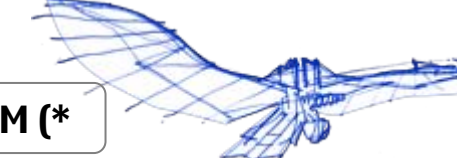
- to inform ETSI about their own and other people’s Essential IPRs (4.1)
- to undertake to grant licences on fair, reasonable and non-discriminatory terms and conditions (6.1)

RIGHTS

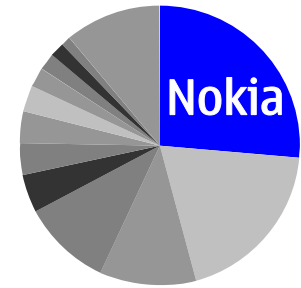
- no obligation to conduct IPR searches (4.2)
- to refuse the inclusion of their IPRs in Standards (8.1 and 8.2)
- obtain licences on fair, reasonable and non-discriminatory terms and conditions (6.1)

Development of Nokia Patent Portfolio

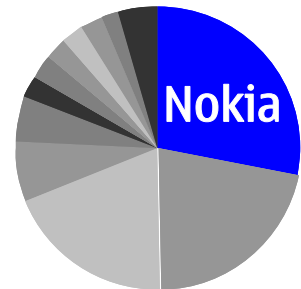
Nokia IPR portfolio and R&D investments



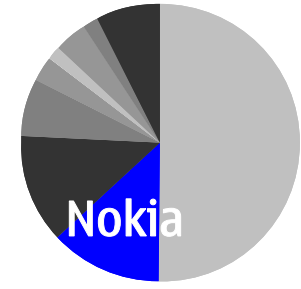
GSM (*)



WCDMA (**)



CDMA2000 (**)



Sources: *) ETSI essential patent declarations **) Goodman-Myers, 2005

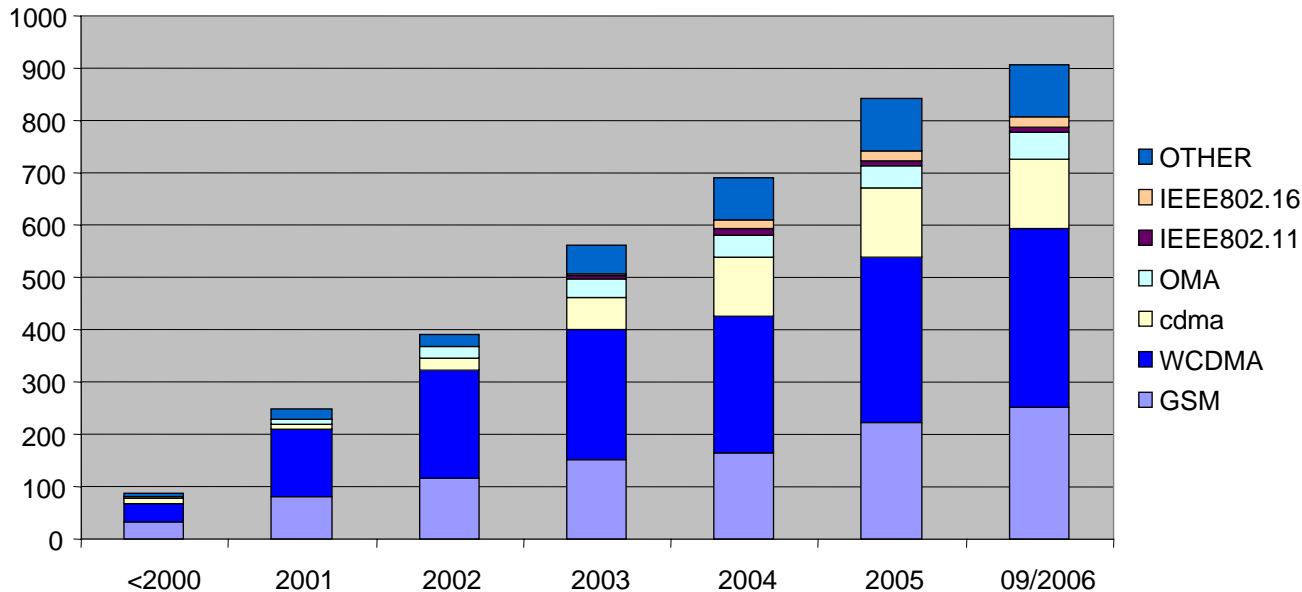
Use of Nokia Patents



Nokia Code	Feature
NC6047	Caller name display
NC6048	Caller specific ringing tune



Two patents used by most phone manufacturers in most of the phones

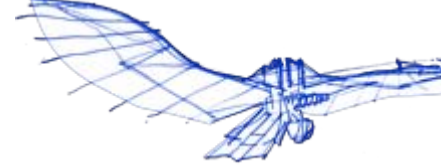


Nokia essential patent declarations in key standards

Source: Nokia declarations

IPR Landscape

IPR ecosystem going forward



- Cellular technology
- Open standardization
- Voice centric terminals
- Growth market
- European & US players
- Few patent owners
- Freedom of action as IPR strategy
- Cross licensing main IPR tool

NOKIA
Connecting People



SIEMENS



Sony Ericsson



QUALCOMM

- Digital convergence
- Feature rich terminals
- Proprietary solutions
- Maturing market
- Asia & other emerging markets & players
- Open source
- Large number of patent owners
- Generation of cash
- Patent pools
- Patent licensing companies



Rambus



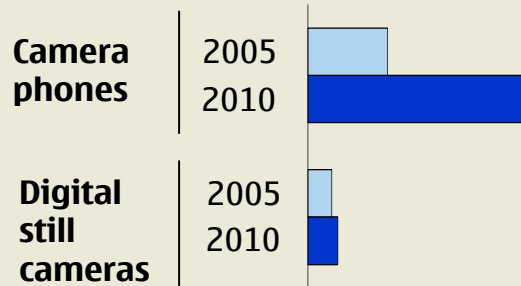
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The highest volume consumer electronics industry - with increased exposure to non-telecom IPR



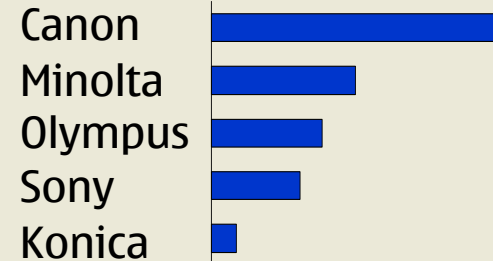
Mobile devices are outgrowing digital still cameras

Camera sales, million units



Old-school camera players retain most of relevant IPR

Granted US patents on cameras

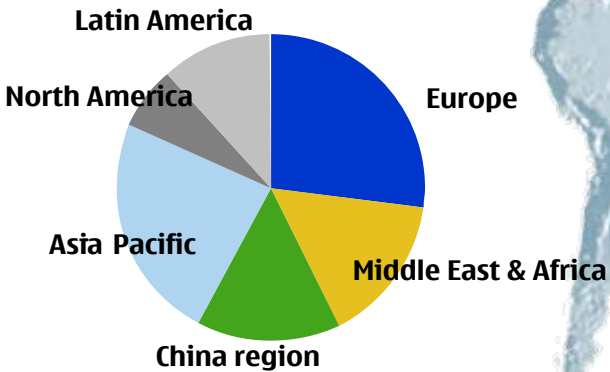
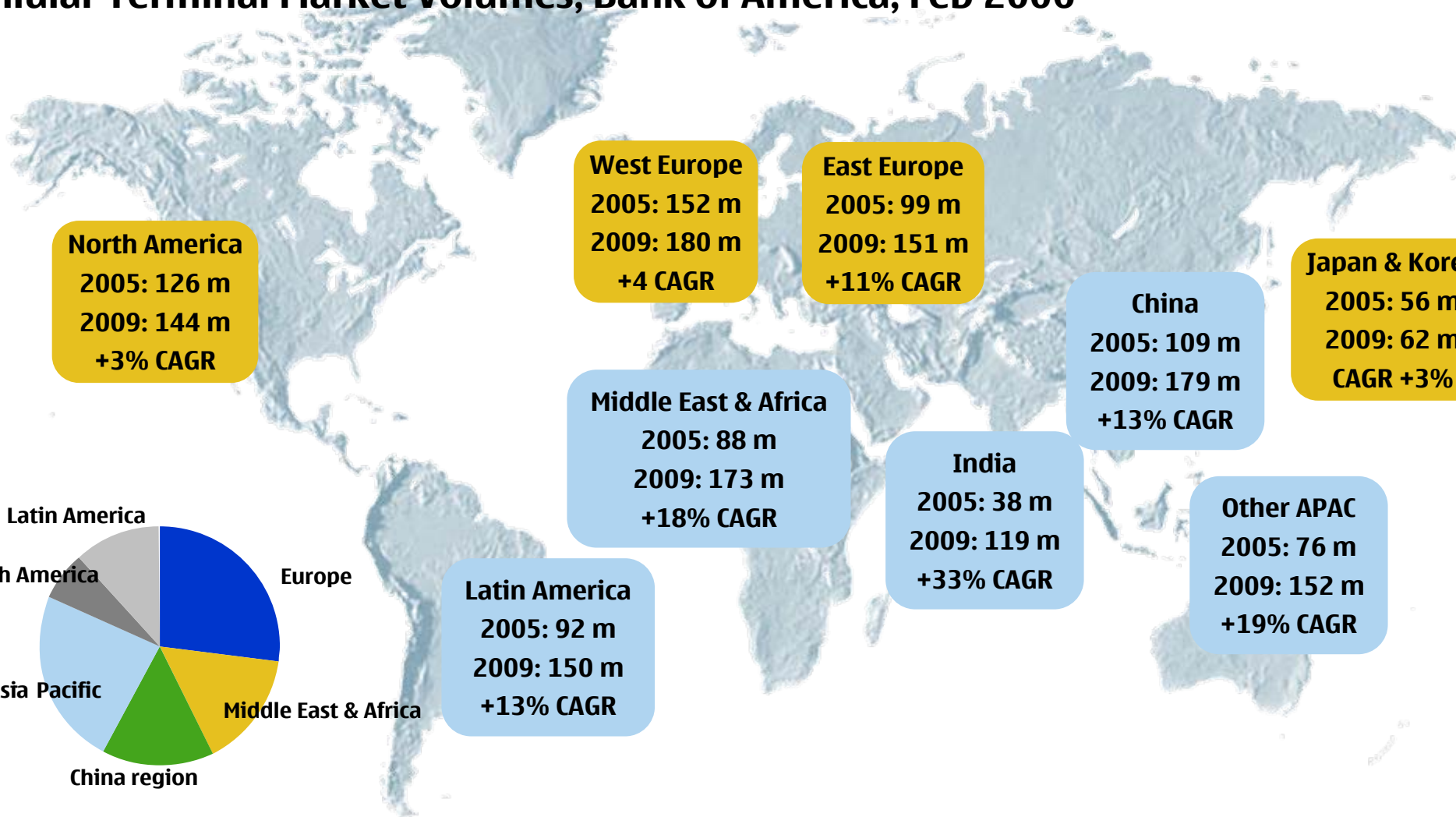


... Television, Navigation, Gaming, Video, Messaging, Fitness ...

Volumes continue to grow - driven by emerging markets



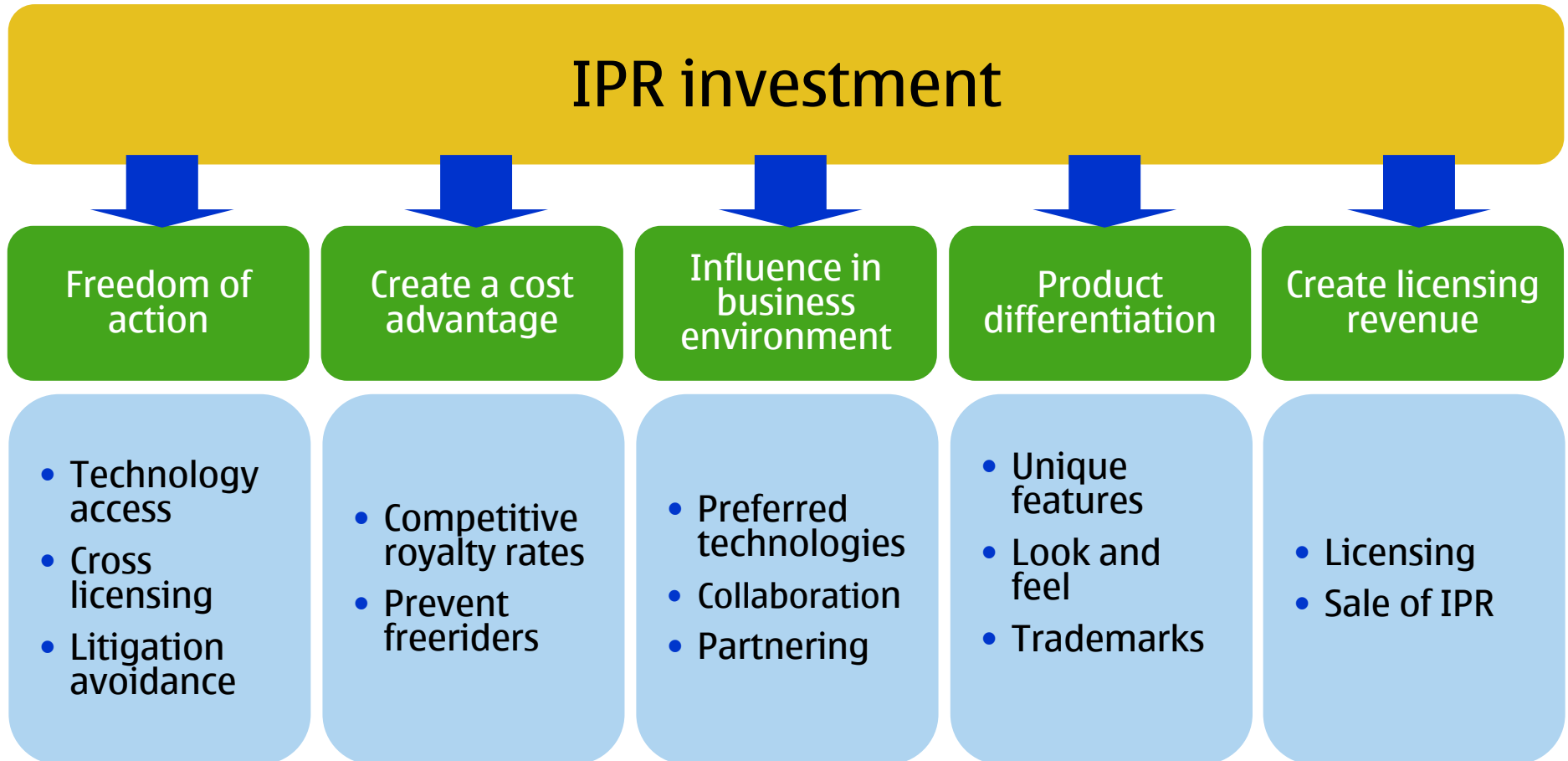
Cellular Terminal Market Volumes, Bank of America, Feb 2006



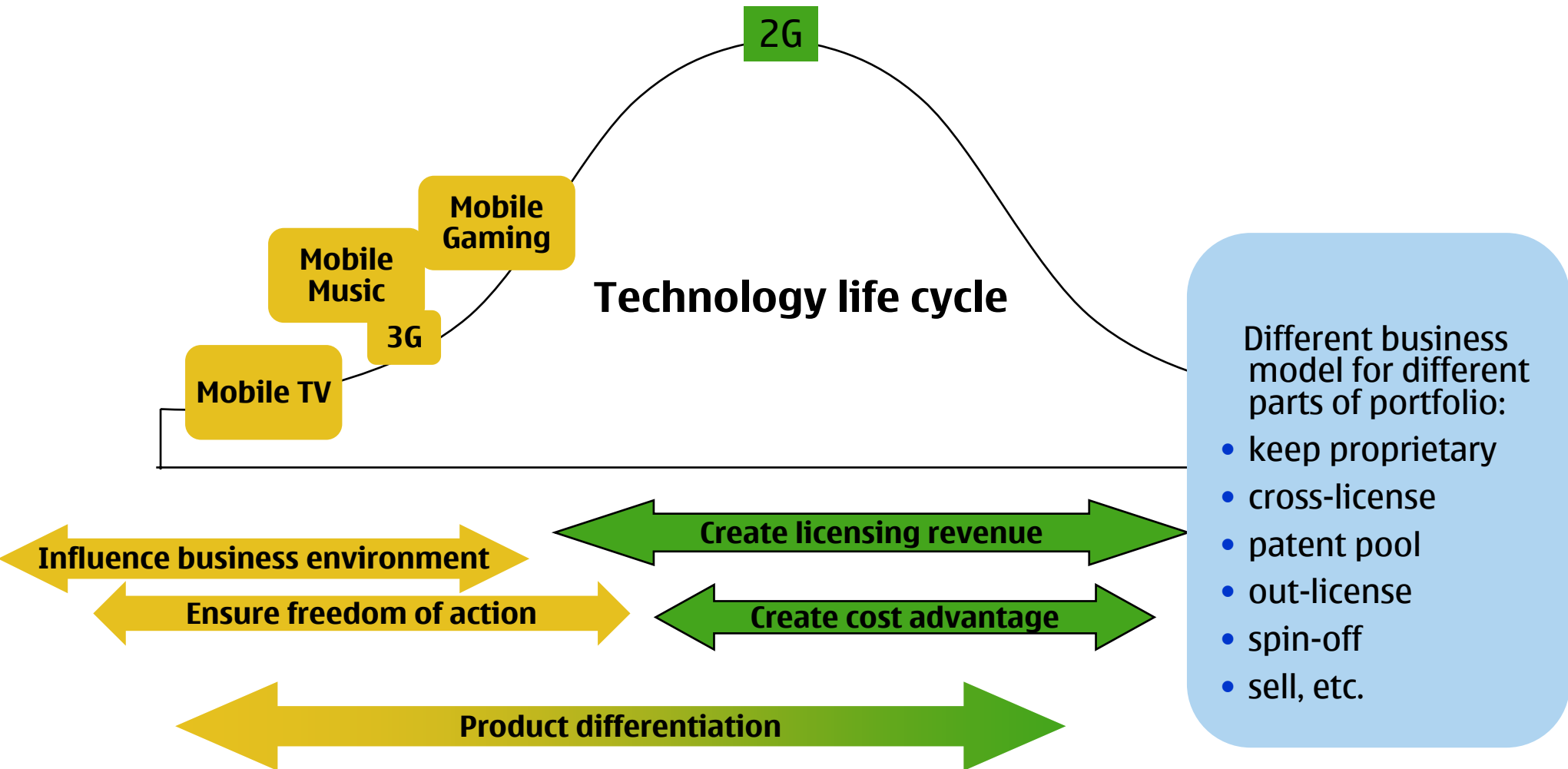
Nokia Regional Volumes 2Q06

How does Nokia IPR create value?

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Creative combinations: Different focus for different technology phases



Innovation thrives from healthy competition



... first the handset layer

Analogue

IS-95

CDMA2000

GSM in 2000

GSM now

WCDMA

Annual volume, Annual growth, Relative profitability (above+/below- average)

... and then the chipset layer

Analogue

IS-95

CDMA2000

GSM in 2000

GSM now

WCDMA

Market share, profit and innovation concentration vs. distribution



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