Case: Nokia-led ICT Industry in Finland and Tampere
Case: Nokia-led ICT Industry in Finland and Tampere

Path creation
New technologies, new competencies

Path exhaustion
Loss of technologies and competencies

Path branching
New functions of technology and competencies
Nokia-led ICT Industry in Finland

In its heyday (2000), Nokia:

• held a 40% share of the world’s mobile phone market
• appr. 4% of Finnish GDP
• 1/3 of R&D expenditure
• appr. 50% of business R&D
• 20% of exports

Finnish manufacturing production volume by industry (€ billions in 2000 prices) (Rouvinen et. al. 2003)
How it all came about

ICT’s success in the 90’s was made possible by...

- evolution of specialized skills
- a result of the mix of technical solutions chosen by the many competing telecom operators (variety) and
- thus Finnish telecommunications engineers became recognized as leading experts in interface technology
- institutions supporting all this
Late 1800’s
(Blomström et al., 2002)

The Telephony Decree of the Finnish Senate (1886)

- **WHAT**: Numerous private operator licenses granted to circumvent Russian telegraph regulations

- **WHY**: To create an obstacle to Russian efforts to nationalise the Finnish telephone system.

**RESULT**

- Finland became one of the few European countries where private operators competed with the state in local operations -> strong local capabilities

- Finnish telecommunications equipment markets were open to foreign suppliers - small multioperator market

- Finland became very early a test market for the latest technology
1920’s

Radio technology ‘lurked in the shadows’ in many Finnish firms well before it had commercial applications

(Ylä-Anttila 2003)
1960’s / 1970’s
(Rouvinen & Ylä-Anttila, 2003)

• A call for tenders by the Finnish army for a battlefield radio spurred companies to capitalize their earlier accumulated expertise (1963)
  
  o Ultimately the army did not have the resources to purchase the system
  
  o the prototypes served as the forerunners of commercial handsets

• The Auto Radio Puhelin (ARP, Car Radio Telephone) network was introduced in 1971
  
  o Finland’s first mobile telephone network
In Tampere

• Professorship in computer sciences in 1965 (University of Tampere)
  o The first in the Nordic Countries
  o Professor and students established Softplan (later merged with Nokia)

• Professor of electronics, digital signal processing in 1977 (Tampere University of Technology)
1970’s / 1980’s

• Telecommunications standardisation in the Nordic and European contexts
  o Finland was an early adopter of NMT in the 1970s (Nordic Mobile Telephone)
  o NMT was open to third country suppliers as well later GSM (Groupe Spécial Mobile).

• Nokia and Ericsson were among the first to adopt GSM, which eventually became almost universally accepted
Market Shares of **Smartphone OSs**

- **Windows**
- **Other**
- **RIM (Blackberry)**
- **Symbian (Nokia)**
- **iOS (Apple)**
- **Android (Google)**

Data: Gartner

Petri Rouvinen, Etla
Nokia admits failure, inks Microsoft deal

KEVIN J. BRIEN

London, Feb. 12: Nokia, the struggling world leader in mobile phones, said yesterday that it would discard its own mobile phone operating system and begin using software made by Microsoft, in an alliance to shore up the halting efforts in smartphones of two market leaders.

The announcement by Stephen Elop, the former Microsoft executive hired by Nokia in September as the company’s first non-Finnish chief executive, was an admission of failure by Nokia, which had helped define the mobile phone age in its infancy.

The alliance is also a gamble, perhaps a last-ditch effort for both Nokia and Microsoft to gain a lasting foothold in the booming market for sophisticated smartphones, where Apple’s iPhone and Google’s Android software are leading the way in technology innovation.

“Nokia is at a critical juncture, where significant change is necessary and inevitable in our journey forward,” Elop, a Canadian who led Microsoft’s business software division before moving to Nokia, said in a statement.
Microsoft wrote off $7.6 billion from Nokia deal, announced 7,800 job cuts

- That's more than the $7.2 billion Microsoft paid for Nokia's phone business year earlier
Negative path dependency
- wrong strategic choices
- lack of the capabilities to face new challenges
- organisational rigidity
- changes in the market and the economic downshift

(Laamanen et al 2016)