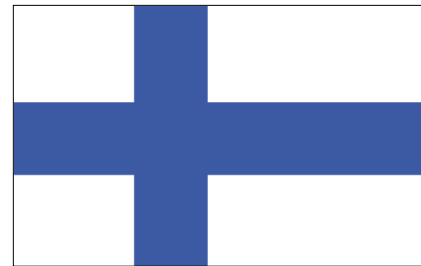


MBA 290G: International Trade and Competition in High Technology

Professor Charles C. Wu



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Media Clips - Mobiles

Choking on your handheld? Cool. Because the world's charging up to a new ring tone. Mobiles have become the 21st century equivalent of the Swiss Army knife.

Major milestone reached - one billionth Nokia mobile phone sold this summer
September 21, 2005



Content

- Case Overview
- Economic Developments in Finland
- Porter's Diamond
- Telekom Cluster Program
- Nokia over Motorola – Why
- Finland – Challenges and Suggestions for Successful Future



Finland and Nokia – Case Overview

Country - Description

- Close ties to it's neighbors: Nordic Region/Europe to the West and Russia to the East
- In the 80's there was a transformation from investment-driven economy (wood/paper/machinery) to innovation driven (supported through "Cluster"-forming)
- Policy was modeled for maximum impact on economy, society and government as it was understood that Finland lost ground

Cluster Telekom – Description

- Case covers policy changes and effects of these changes from the 90's onwards
- Telekom-Cluster forming and how different parts of the value chain supplement each other

Nokia

- Looks into Nokia and why it is so successful (Historic reasons, Good Management, Luck?)
- Looks into Competitors and why was and is Nokia more successful
- What does Nokia and Finland need to do to stay successful



Economic Developments in Finland

1970: Dominated by Finland's natural resources (main exports to Russia, Germany, and Sweden)

40% Pulp and Paper

16% Wood products

23% Engineered metal (e.g. Shipbuilding)

1980s: Perceived losing international economic position

Rising government expenditure → increasing inflationary pressure

Increased spending on R&D

Financial markets liberalized → bank lending easier and access to international capital

1990s: Severe economic crisis

Export markets dried up (dissolving of Soviet Union and reunification of Germany)

Cut government expenditures

Continued to fund R&D

Implemented the Cluster Program

Made venture capital available for start-up companies



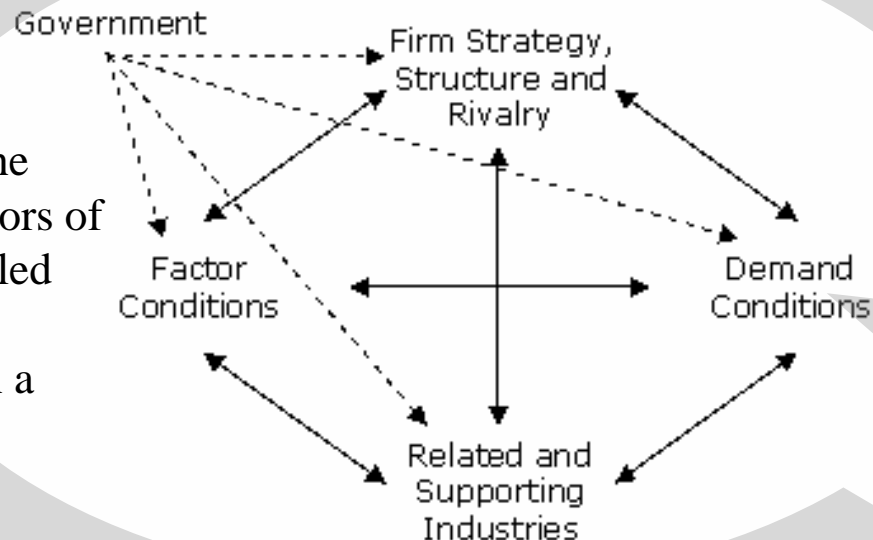
Porter's Diamond I

Porter's Diamond of National Advantage - a framework for country comparative advantages

Firm Strategy, Structure and Rivalry: The conditions in the nation governing how companies are created, organized and managed, as well as the nature of domestic rivalry.

Factor Conditions : The nation's position in factors of production, such as skilled labor or infrastructure, necessary to compete in a given industry.

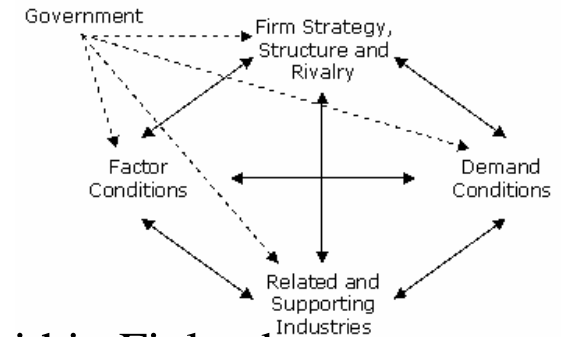
Demand Conditions: The nature of home-market demand for the industry's product or service.



Related and Supporting Industries: The presence or absence in the nation of supplier industries and other related industries that are internationally competitive.



Porter's Diamond II - Cellular Phones



Firm Strategy, Structure and Rivalry: Finland ++

- Historic reasons for highly competitive landscape within Finland
- Strong export-centered commerce experience
- Strong network & links between companies, banks and government
- Regional Development Act- favors intense rivalry

Factor Conditions : Finland +

- Investing Money into Education (1st in Pisa – European school comparison)
- Uniform, market-orientated government

Related and Supporting Industries: Finland +

- Huge R&D spending by government and companies
- Strong Venture Capital, Content provider, Manufacturer network
- Lots of specialized companies due to fragmented market

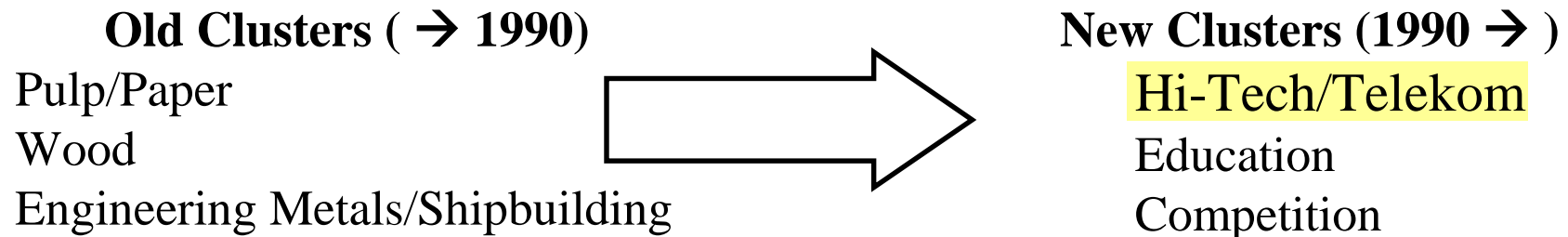
Demand Conditions: Finland +

- Sparsely populated area supports adoption of wireless devices
- 1st world country with resources available to pay for services
- Weather supports phone- over face-to-face conversations



Telekom Cluster Program

**Changes in Technology, Economy, Society lead to a
refocus on more value-adding clusters**



What is the Finnish Cluster Program?

Introduced by the Institute of the Finnish Economy (ETLS) to strengthen Finnish Competitiveness in the 90's

- Combined effort of economic and industrial policies, education, R&D efforts, private and public interactions to be world-class leader in specific content

Specifically: Telekom Cluster

To provide Finland with a strong world-wide competitive advantage through Public-Private Partnerships (Data: Year 2000)

- **4000 Firms** (VC, Software/Hardware-Vendors, Manufacturing, R&D)
- **83.000 Employees, producing 6.9% GDP**

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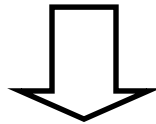
NOKIA
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Finland – Why is telecom so successful ?

Does Nokia need Finland and Finland Nokia?

- Finland Specific
 - No monopoly on any of the value chain parts of telecom, fostered healthy competition between companies...
 - European consumer demand (e.g. roaming,...) kept Finland on edge of technologic development
 - Market-orientated Government with close ties to Industry helped propel technology, legal and export (e.g. M&A business)
 - Excellent education provided necessary work-force
- Worldwide developments
 - Tech-hype in late 90's helped propel technology
 - Mobile services were seen as gateway to economic development
 - Mobile developed to essential good (e.g. 4 bn mobiles sold so far, (source??))



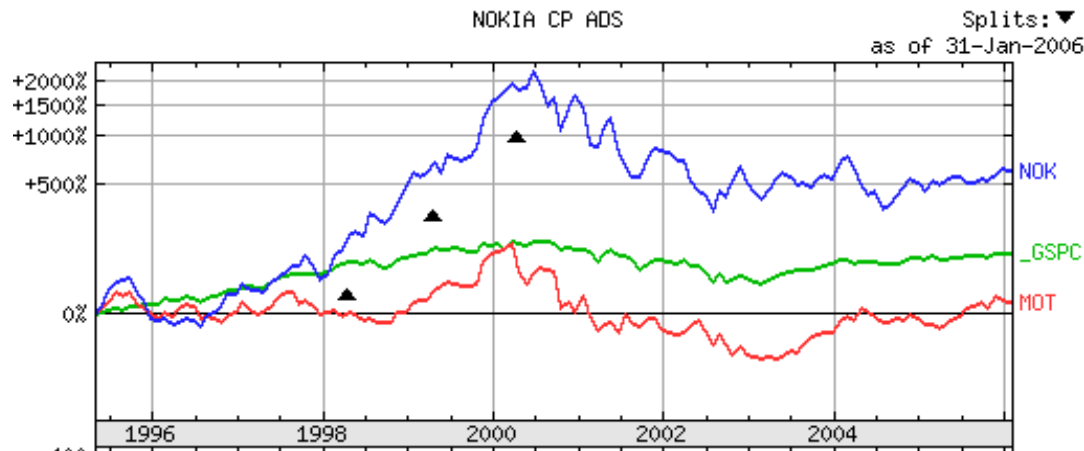
Nokia in 2000 is as large as the next three Mobile Equipment Manufacturer together:
Nokia 31% , Motorola+Ericsson+Samsung 31% = 62% of World-Market

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Nokia over Motorola – Why ?



Nokia

- built a brand around Mobiles as Fashion item's and not tech-gadgets (Nokia 2100 sold 20 million time instead of planned 400,000)
- environment of supportive legislature, economy, strong R&D, strong content delivery industry (games, info, news) in Finland
- formed alliances and was part of successful GSM consortium

Motorola

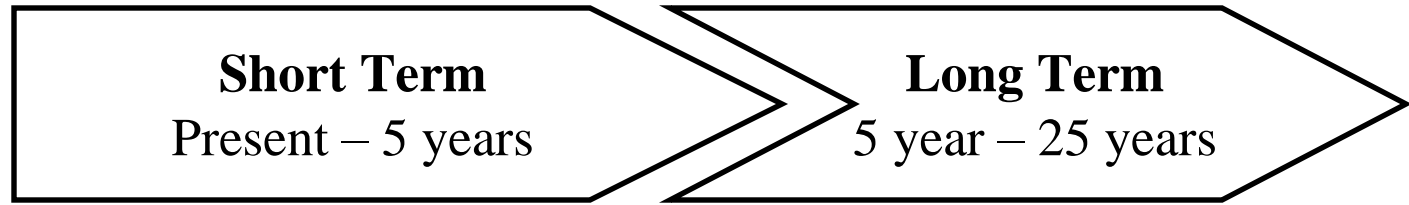
- clung on success of old technology (analog vs. digital) and didn't change
- employed resources for IRIDIUM, which failed
- did not see value of Brand Building

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Finland Challenges / Road to Success



Challenges

- Labor shortages of skilled workers
- Overall Growth Rates in major industries are declining
- Major export markets are weak
- Low-diversified technology concentration with few clusters, e.g. Nokia Market Cap 71%
- Changing socio-economic environment

Road to Success

- Actively support clusters in high-service, low-manufacturing areas
- Concentrate on EU Opportunities in new member states
- Battle rising unemployment-rate through tougher social laws
- Support Entrepreneurship- and Service-Society through
 - education
 - business-friendly laws
 - reduction of social services

