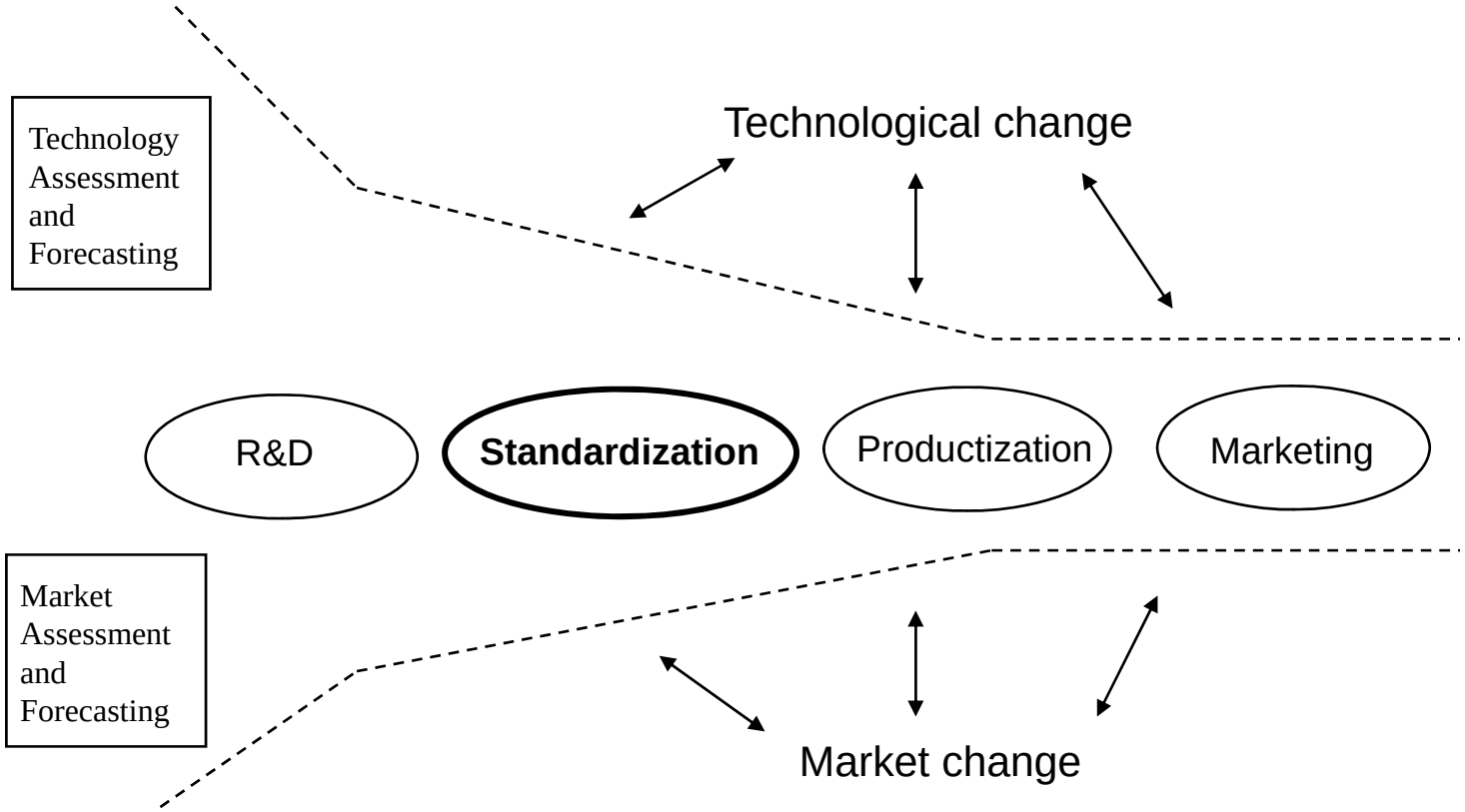
Innovation process



Introduction

- The telecommunications industry has been a sector with a strong regulation of the spectrum, technologies, services and competition
- Regulation has been a tool for governments to control the balance between the national and international companies and their market positions in the country
- National regulative requirements lead in building barriers to entry for foreign competitors
- The role of the national regulation is decreasing owing to the global trend towards a less regulated international trade
- The primary goal is currently benefit the consumers through competition in the supply of products and services

Introduction

- Deregulation consequences and political implications
  monopoly PTT´s -> privatization, new operators -> competition
- It is assumed that a harmonized market enables economies of scale and lowers the price levels of telecommunications products and services
- Achieving critical mass, universal service
- Harmonized global telecommunications market will increase competition in the beginning, but may finally lead to a reduced technological variation and consolidation of the industry
- Regulation can be considered to define the general boundaries of the business, while standardization provides a filtering impact, which reduces the uncertainty by increasing predictability

Introduction

- The start of the standardization process is one of the most important signs of the coming technological change
- By influencing the existence, content, scope and timing of the standards it is possible to have an impact on the companies' ability to successfully exploit this change
- ”Standardization is 80 % policy and 20 % technology”
- A dominant technology emerges out of the competition between the alternative technologies driven by competitors or alliance groups and governmental regulators, each of which has their own goals

Introduction

- The technology competition tends to converge finally into a situation where one technology dominates globally
- The original technological choice has to be sustained, while it is very difficult to switch over to supporting the winning technology later on
- A parallel development of several competing technological alternatives significantly complicate the innovation process and increases costs

Introduction

- Though the standards define a wide set of new services, few of them finally become commercially successful among the the users
- Too long a standardization process may result in the delay of the new technology from the market - phasing
- The complementarities between the technologies should be assessed – telecommunications / Internet
- The usage of market information should be considered more
- Standards should be introduced in an evolutionary way by building complexity as the market uncertainty decreases

Standard setting organizations

- International Telecommunications Union (ITU)
- Instititute of Electric and Electronic Engineers (IEEE)
- Telecommunications Industry Association (TIA)
- European Telecommunications Standards Institute (ETSI)
- The Internet Engineering Task Force (IETF)
- 3rd Generation Partnership Project (3GPP)
- Open Mobile Alliance (OMA)
- Liberty Alliance
- World Wide Web Consortium (W3C)

Cooperation and Compatibility

- Expanded network externalities
- Reduced uncertainty
- Reduced consumer lock-in
- Competition for the market vs in the market
- Competition on price vs features
- Competition to offer proprietary extensions
- Component vs systems competition

Who wins and who loses from standards?

- Consumers
- Complementors
- Incumbents
- Innovators

Informal methods of protection

- Appropriation by secrecy
- Appropriation by first-mover advantage
- Appropriation by complexity
- Appropriation by scale and specialized assets

Formal methods of protection

- Patents
- Designs
- Tramarks
- Copyright
- Licensing
- Pricing IPR

Tactics in standard setting

- Do not automatically participate
- Parallel R&D and patenting
- Look for logrolling opprtunities
- Be creative about cutting deals
- Beware of vague promises
- Search carefully for blocking patents
- Consider building an installed base preemptively

Building alliances – retain relative advantage

- Time-to-market / Edge in development
- Manufacturing cost
- Brand

Building alliances

- Assembling allies
- Interconnection among allies
- Negotiating a truce

Standard war

- When two incompatible technologies struggle to become a de facto standard
- These wars may end in

  - truce (56 k modems)

  - duopoly (video games)

  - fight to death (VCRs)

Classification of standard wars

	Rival Technology	
Your Technology	**Compatible**	**Incompatible**
Compatible	Rival evolutions (DVD vs Divx, 56k modem, Unix)	Evolutions vs revolution (Lotus vs Excel, dBaseIV vs Paradox)
Incompatible	Revolution vs evol	Rival revolutions (Nintendo 64 vs PS, Netscape vs Explorer)

Key Assets in Standards War

- Control over installed base of customers, migration
- IPR
- Ability to innovate
- First mover advantage
- Manufacturing abilities
- Complementary products, interfaces
- Brand

Tactics in standard wars

- Preemption
- Expectations management

After winning

- Staying on your guard
- Commoditizing complementary products
- Competing with your own installed base
- Protecting your position
- Leveraging installed base, geographic expansion
- Staying ahead, proprietary extensions

After losing

- Adapters and interconnection
- Survival pricing
- Legal approaches