

# ***Standardization: A double-edged sword?***

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# Why standardize?

*Many good reasons in the wireless industry*

- **Equipment interoperability**

- The first mobile radio systems were proprietary, e.g. an Ericsson radio only talked to another Ericsson radio and only in areas having infrastructure
- Single-source supplier has large monopoly power
- Proprietary technology tends to create smaller and more tightly segmented markets

- **Economies of scale**

- Standard technology enables large scale adoption, which fuels the learning curve

- **Economies of scope**

- Re-use of platform for multiple products – no need for special country-specific technologies

- **Standards create large-scale adoption potential**

- For example 3GPP wireless technologies (GSM/GPRS/EDGE/UMTS) now have 87% of global subscriber market share



# A wireless example: 3GPP technologies

87% of the global wireless market in 2008: GSM/EDGE + UMTS/HSPA



- [Source: 3G Americas, 2008]

# *Standardization can create huge markets*

## *Done carefully, a global standard can be dominant*

- Positive network externalities can be created
  - The more a certain technology is in use, the greater the further adoption potential
- Technology switching costs can be reduced
  - Backward compatibility
- Wireless is a huge industry
  - In 2007, \$602 Bn U.S. in global network operator revenue
  - In 2007, \$97 Bn U.S. in network operator simple free cash-flow

# *A double-edged sword*

## *Large markets create their own limits*

- Over-standardization can severely constrain future innovation space
  - Innovation produces Ricardian economic rents
  - You may lose some of these competency-based rents as the price you pay for creation of large markets
- The large installed base of customers then becomes a constraint in itself

# Should your company participate or not?

## *Maybe, maybe not...*

- Developing standards is expensive and time consuming
- Question:
- *“why don’t we let other companies standardize technology, and just implement the standard after it is published?”*

*If a standard is incidental to your firm's competencies*  
**Non-participation = severe consequences**

1. Industry leadership

- If your company doesn't participate in the development of standards, then your competitors will write your product requirements for you – and they won't make it easy

2. Royalties

- If you did not help develop the technology, then you will pay the contributors to the standard for royalties on their technology

3. Causal ambiguities

- Blind implementation of a standard is many times almost impossible. Standardization is a mutual learning process - if your company failed to develop new competencies incidental to standardization, you'll almost certainly be late to market

## *Summary*

- Lack of standards -> chaos
- Over-standardization -> commoditization
- A balance is needed
- When managed carefully, standardization can be a tool for tremendous value creation



**Thanks**



# Mark Pecen

- Mark Pecen serves as Vice President, Advanced Technology for Research in Motion Limited (RIM), makers of the BlackBerry wireless devices, systems and services. He reports to RIM CEO and founder Mike Lazaridis and is responsible for corporate strategy and economic assessment of advanced wireless technology investments, commercialization of applied research, strategic technology partnerships and customer collaboration on future technology deployment.
- Pecen is the founder of the RIM Wireless and Networking Advanced Research Centre and founder of the RIM CTO Board. Current priorities include development of technologies for the evolution of existing and creation of Next Generation wireless systems. His labs are active in applied information theory, radio channel modeling, cross-layer wireless network design and protocols, mobility management, radio link control, statistical analysis and simulation and end-to-end modeling of wireless systems.
- Prior to joining RIM in 2005, Pecen held the title Distinguished Innovator and Science Advisory Board Associate (SABA) member, representing the top 1% of technology leaders at Motorola, Inc. Since 1988, Pecen has invented a number of technologies adopted in global standards for the Global System for Mobile telecommunication (GSM), General Packet Radio Service (GPRS), Enhanced Data for GSM Evolution (EDGE), Universal Mobile Telecommunication System (UMTS) and various Wireless Local Area Networks (WLAN) standards.
- He serves on the boards of several technology-focused industrial, academic and governmental associations in North America and Europe. He is a regular advisor to various agencies within the Canadian government regarding global regulatory policy matters related to wireless communication.
- Pecen holds more than 70 patents in the areas of mobile communication, networking and computing, and is a graduate of the University of Pennsylvania, Wharton School of Business and the School of Engineering and Applied Sciences.

