Development of IT-Standards

--Types of Standardization Processes--

Kai Reimers

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Questions

- How can different types of standardization processes be distinguished?

- From a managerial perspective, what are the main issues for each type of standardization process?

So Far Considered …

- Market-based standardization processes
  - Positive network externalities
  - → Network tipping, excess inertia, insufficient friction

- Committee-based standardization processes
  - Committees as devices for conflict resolution
  - → Hybrids better than pure committees; committees better than "bandwagons"

Extending the Scheme

- Un-sponsored (market-based) standardization processes
  - No firm takes purposeful action

- Sponsored (market-based) standardization processes
  - Firms take purposeful actions on markets

- Standards-setting in voluntary standards organizations
  - Firms take purposeful actions in committees

- Government intervention
  - Firms fail to take action *or* firms engage in anti-competitive action *or* action taken by firms is insufficient

Issues in Un-sponsored Standardization Processes

- Lock-in and path dependency
  - QWERTY
    - Inferior technologies may become dominant
  - How to coordinate the move to a new standard/technology?
    - Critical masses, bandwagons
    - Does better communication help? => Role of preferences

- Stranding existing users; hampering future users
  - Similar to lock-in situations
    - Excess inertia and excess momentum

Issues in Sponsored Standardization Processes

- Penetration pricing
  - Windows of opportunities in early phases
  - Similar in nature: Inviting second sources, giving away licences
- Raising/creating switching costs
  - Can be anticipated and thus neutralized
- Asymmetric measures
  - Making products compatible through converters/adapters
  - Increasing rivals' costs through interface design
  - Unilaterally (and frequently) changing interfaces
- Product pre-announcements
- Influence of market structure
  - Buyers vs. sellers as sponsors
  - Vertical integration ("bundling" of components)

Issues in Voluntary Standards Setting Organizations

- Joint product development vs. conflict resolution

- Composition of interests matters

- Importance of anticipatory standards
  - Issue of innovation
  - Issue of user participation

- What are the incentives for firms to participate? => lack of theoretical models

- Concept of positive network externalities not helpful

Issues in Government Intervention

- Motives for governments
  - security, health, etc. => standards as public goods
  - network externalities => Market failure
- The costs of government intervention
  - governments are ignorant about technological possibilities/opportunities
  - governments are prone to be influenced by lobbying (rent seeking)
- IPRs
  - patenting interfaces or software?
  - Open Source as an alternative?
- Protectionism in international standardization
- Legitimacy of standardization processes when standards take on mandatory character

Classifying Standardization Problems

Preferences for standards

	High	Low
Low	*Coordination game* *=> dice* *- main problem:* *coordination failure*	*Standardization Failure* *=> un-sponsored* *- main problem:* *inferior technology*
High	*Battle of the systems* *=> Sponsored* *- main problem:* *Anti-competitive beh.*	*Competing coalitions* *=> Voluntary organizations* *- main problem:* *Fragmentation*

Vested interests

Open Issues

- How can a firm "control" a standard?
  - Lock-in should also prevent a firm from changing standards

- If standards are public or collective goods, why are there so many voluntary standardization organizations?

- If lock-in/excess inertia (or excess momentum) is a real problem, why not let government overcome it?

- If lock-in is a real possibility, should not patents related to standards be allowed?

References

- David, Paul A.; Greenstein, Shane M. (1990): The Economics of Compatibility Standards: An Introduction to Recent Research. In: Economics of Innovation and New Technology, Vol.1, pp. 3-41.