# IN 5210

# Process Strategies
# Complexity and Bootstrapping

# A self-reinforcing installed base

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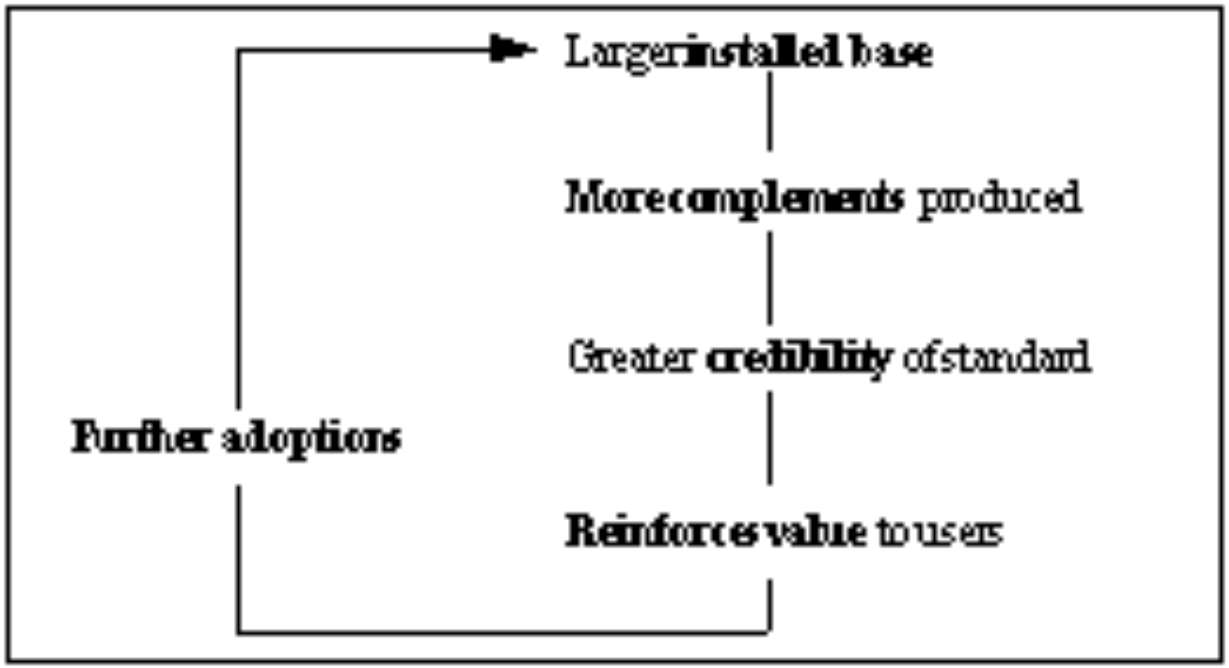

# Design dilemmas

- Take-off
- Lock-in

# ’Multidimensional’ critical mass

- Granovetter’s pedestrians: distribution of individual preferences.
- Diversity of users (motivation, knowledge, style, …)
- Heterogeneity of use areas and of technologies.
- Networks of networks

# ’Bootstrapping’

- Enclocypedia: ’She bootstrapped herself to the top’ – to manage on one’s own
- Lifting yourselves by your hair
- Booting a computer
- Implementing a programming language
- Language learning
- Making a tool/network by means of the tool/network
- ”Deliver a better today, rather than promise a better tomorrow”.
- Late adopters adopt because the others have already
- First adopters must adopt for another reason

# Identifying and arranging preferences

- Multi-dimensional
- Personal, individual
- Use areas and situations
- Technological aspects
- Coordination/governance structures
- Arranging preferences and dimensions (dynamically)

# Bootstrapping Network Technologies

- Select motivated and knowledgeable users
- Simple, non-critical, non-complicated use areas where no large organisational changes are required.
- Select simple, relatively cheap and well supported technical solutions.

- Users first, then functionality/technology

# Individual/personal preferences

- Motivation, attitudes towards technology
- Knowledge about technology

# Aspects of use areas and situations

- Resources
- Benefits of communication within a small network
- Critical/non-critical activities
- Complexity of tasks and work practices
- Organizational changes needed

# Aspects of technology

- “Distance” between users and designers/vendors
- complexity
- costs
- flexibility
- “allied with the future”

# Coordination and governance

- Structures and institutions have to be established (bootstrapped)
- “Standardization bodies”
  - Technology (protocols)
  - Work practices/procedures (protocols)

- (The Internet is an example to learn from in this respect as well)

# Design strategy

- Start with
  - simple, cheap, flexible solution
  - small network of users that may benefit significantly from improved com. with each other only
  - simple practices
  - non-critical practices
  - motivated users
  - knowledgeable users

# Bootstrapping design principles

1. Design initially for usefulness
2. Draw upon existing installed base
3. Expand installed base by persuasive tactics

# Boostrapping algorithm

1. Repeat as long as possible: enrol more users
2. Find and implement more innovative use, go to 1
3. Use solution in more critical cases, go to 1
4. Use solution in more complex cases, go to 1
5. Improve the solution so new tasks can be supported