Overview

- User Innovation
- Lead User Theory
- Lead User Method
- Example...
User Requirements

"Had I asked customers, all they would have said is that they need a faster horse"

- Henry Ford

User innovation vs requirement engineering

- “Classical” requirement engineering
  
  ![Diagram](requirements_diagram.png)

- “User Innovation”
  
  ![Diagram](innovation_diagram.png)
Lead User Theory

The curve illustrates the shape of a market trend. *Lead users have needs that are well ahead of the trend; over time, more and more people feel the same need.*

“These [lead users] are so impatient—so much in need of the next big thing that they’ve already made it themselves.” - Hippel

Lead Users

Two "Lead User components":

1) "They are ahead of an important marketplace trend"
2) They have "high expected [commercial] benefits" from innovation

- Lead users are shown to have a greater degree of "breakthrought" innovations (Lilien, 2002)
Sticky Information

- “Sticky information” is information that is costly to transfer from one person to another.

- Effects on innovation:
  - Location of innovation
  - Iterativeness of the process
  - Partitioning of work

Lead user innovation method

1. LAY THE FOUNDATION
   Identify target markets and the kinds of innovations that will benefit your customers and your company. This gets key stakeholders on board early.

2. DETERMINE THE TRENDS
   Interview people with a broad view of emerging technologies and leading-edge applications in the area you’re exploring.

3. IDENTIFY LEAD USERS
   Network to identify and learn from users at the leading edge of your target and related markets. Identify innovations and ideas that might contribute to breakthrough products; assess their business potential and fit with company interests.

4. DEVELOP THE BREAKTHROUGHS
   Host a lead user workshop. Invite several lead users, product developers, marketers, technical and manufacturing people from your company.

5. CHANGE STRATEGY
   While progressing through the lead user process, watch for the need for strategic change.
"A Test of Lead User Theory" (Franke, von Hippel et al.)

A study of kite-surfers innovations.

Method:
1. Translate the two lead user components ("ahead of trend" and "high expected benefits") into measurable variables
2. Select users based on variables
3. Validate/examine the innovations that these users have done to their equipment

Measurement 1 – "Ahead of trend"

Measured by the *skill of the surfer*

- High Level Jumps
  - Combinations of all jumps
  - Advanced jumps
  - Professional
- Top Level
- Advanced Level
- Intermediate Level
  - Simple jumps with foot
- Beginner Level
  - Simple jumps with foot
  - Beginner Level
### Measurement 2 – ”High benefit”

**Measured by the degree of equipment problems**

- **HBE 1:** While kite surfing, I am often confronted with problems which can not be solved by kite surfing equipment available on the market.
- **HBE 2:** The equipment available in kite surfing stores is sufficient for my need(9)
- **HBE 3:** I am dissatisfied with some pieces of commercially available equipment.
- **HBE 4:** I have already had problems with my equipment which could not be solved with the manufacturer’s conventional offerings.
- **HBE 5:** In my opinion, there are still unresolved problems with kite surfing equipment.
- **HBE 6:** I am constantly searching for improved kite surfing equipment(10)
- **HBE 7:** I have needs related to kite surfing which are not covered by the products currently offered on the market.
- **HBE 8:** I often get irritated about the lack of sophistication in certain pieces of kite surfing equipment.

- removed from result, due to “low factor loading”/”low item to total correlation”

### Result - Lead user component effects

[Diagram showing scatter plot with high and low expected benefit on the x-axis and trend position on the y-axis. Legend: Innovating users (with size indicating attractiveness of innovation), Non-innovating users.]

Legend:
- Innovating users (with size indicating attractiveness of innovation)
- Non-innovating users
When to use Lead User Theory

- Customers are increasingly asking for customized products.
- You and your customers need many iterations before you find a solution.
- You or your competitors use high-quality computer-based simulation. (Provide “kits” that allow customers to design their own products.)

[Thomke & Hippel, 2002]