



# ”User Innovation”

- Vinnova projekt SamMet

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V2.0

## Overview

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



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## User Requirements

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

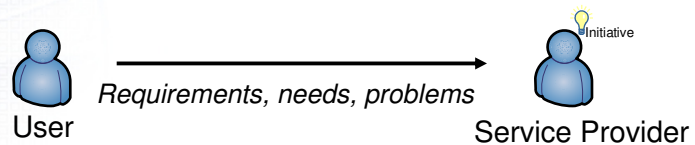
- Henry Ford



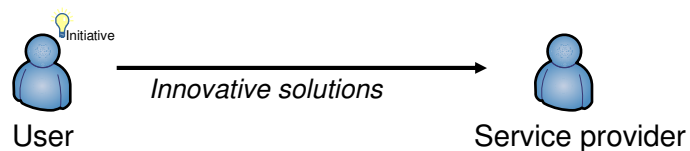
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## User innovation vs requirement engineering

- “Classical” requirement engineering



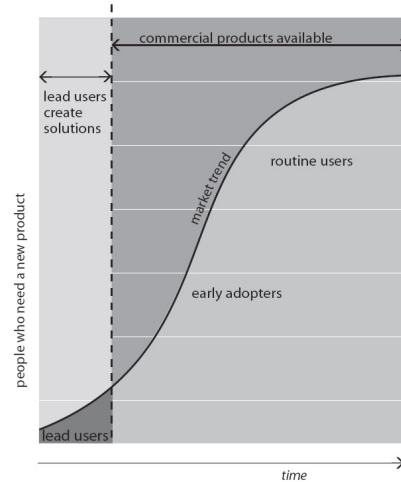
- “User Innovation”



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## Lead User Theory

[Hippel, 1999]



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

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## 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 "breakthrough" innovations (Lilien, 2002)

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## Sticky Information

[Hippel, 1994]

- “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



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## Lead user innovation method

[Hippel, "Creating Breakthroughs at 3M", 1999]

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.



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## ”A Test of Lead User Theory” (Franke, von Hippel et al.)

A study of *kite-surfers* innovations.

Method:

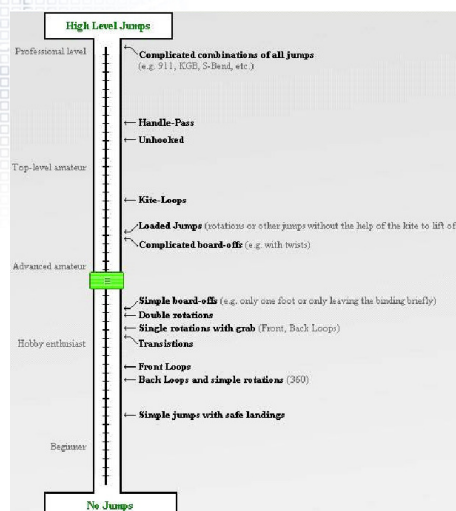
1. Translate the two lead user components (“*ahead of trend*” and “*high expected benefits*”) into measurable variables
2. Select users based on variables
3. Validate/examine the innovations that these users have done to their equipment



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## Measurement 1 – ”Ahead of trend”

Measured by the *skill of the surfer*



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## Measurement 2 – "High benefit"

### Measured by the *degree of equipment problems*

High benefit expected (HBE)

(n=30)

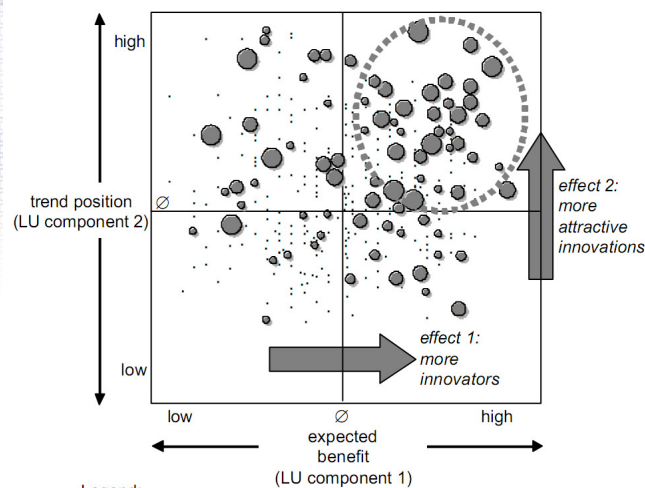
- HBE 1: While kite surfing, I am often confronted with problems which can not be solved by kite surfing equipment available on the market.
- HBE 2: The equipment available in kite surfing stores is sufficient for my needs. <sup>(b)</sup>
- HBE 3: I am dissatisfied with some pieces of commercially available 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. <sup>(b)</sup>
- 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"

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## Result - Lead user component effects



Legend:

- Innovating users (with size indicating attractiveness of innovation)
- Non-innovating users

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## When to use Lead User Theory

[Thomke & Hippel, 2002]

- 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.)

