

Assignment 1, Theme C: Creativity and Product Innovation

University Zürich, Fall 2011
Requirements Engineering II

Group 3:
Andrei Andriesi
Michael Blöchlinger
Kevin Caluser [presenting]
Andrei Cojocariu
Kristin Kruse [presenting]

Why is this topic important for us as Requirements Engineers?

- 1) If you as a company do not make product innovation, you will be out of market pretty soon!
- 2) Requirements do not just lie around. Creativity methods help people find out what they want!

Outline

1. Terminology
2. Elicitation meets Creativity & Product Innovation
3. Where to get creativity?
4. Organizational requirements for creativity
5. Realization of ideas

Terminology

Elicitation

Requirements elicitation is the **PRACTICE** of obtaining requirements from stakeholders.

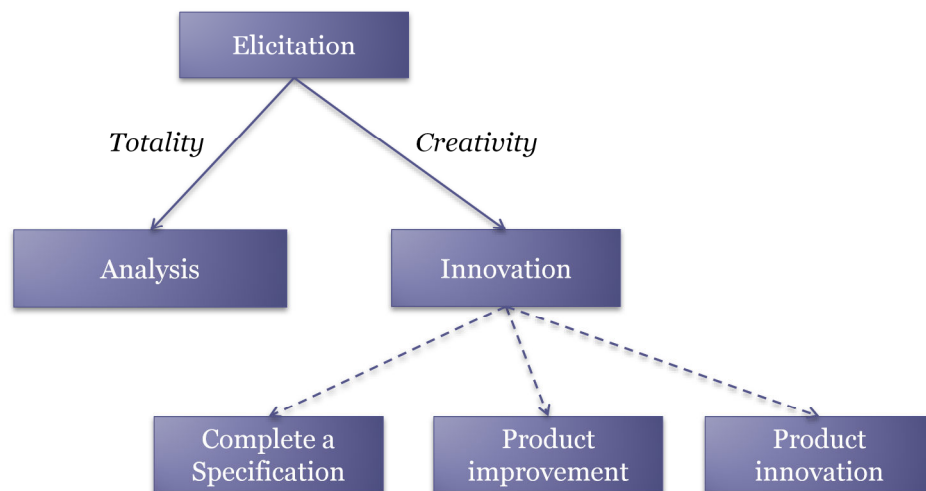
Creativity

“Creativity is the **ABILITY** to produce work that is both novel and appropriate.” (Steinberg)

Innovation

Innovation is a **RESULT** that is both novel and appropriate.

Elicitation meets Creativity & Product Innovation



ANALYSIS

figure out the current situation using...

- ...Interviews
- ...Reading existing documents
- ...Questionnaires
- ...Workplace visits

INNOVATION

Complete a specification

- Use creativity methods to find missing details in a requirements specification

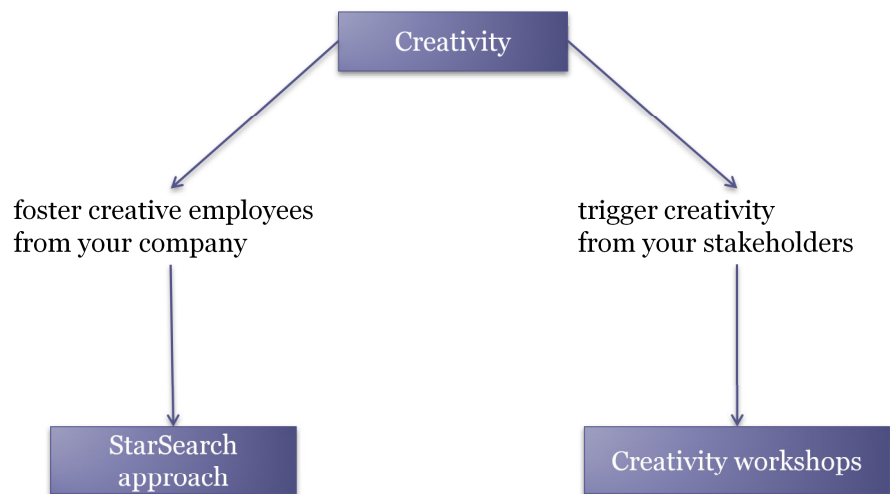
Product innovation

- New system → build new products that solve existing problems

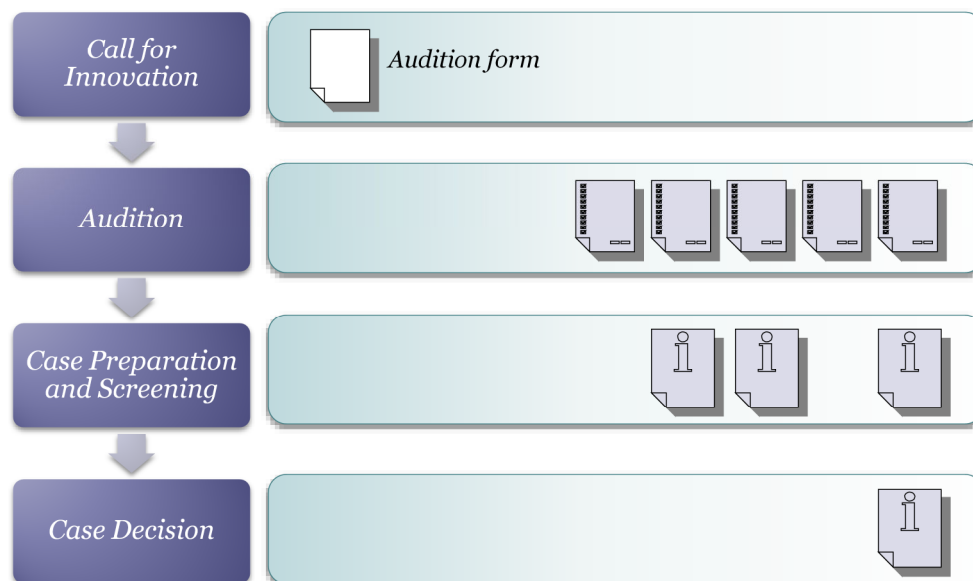
Product improvement

- improve existing products

Where to get creativity?



StarSearch: foster creative employees



Requirements Engineering II, Assignment 1: Creativity and Product Innovation

31.10.2011

Situations:

- Product innovation
- general improvements (products, workflows, etc.)

Setting:

- Having innovative products is an economical precondition for long-term growth. A company needs to actively seek for innovation.
- Creating an innovation-friendly environment within a company

Step 1: Call for Innovation

- send out call for innovation to employees
- employees fill out audition form / prepare slides

Step 2: Audition

- creative employee present ideas to audition group (AG)
- AG helps employee to refine / improve idea (or AG decides to dismiss idea)

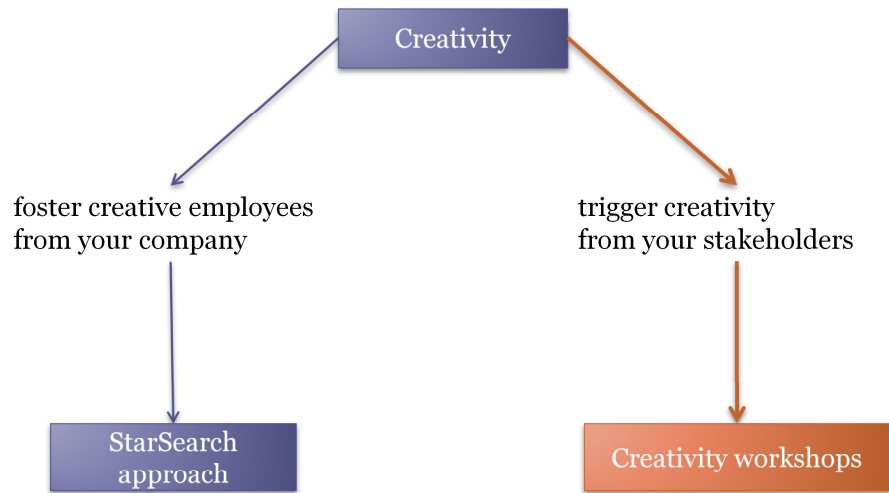
Step 3: Case Preparation and Screening

- employee and case preparation group (CPG) create a business case (ROI, etc.)
- additional experts get involved (estimations, feasibility checks, risk analysis)

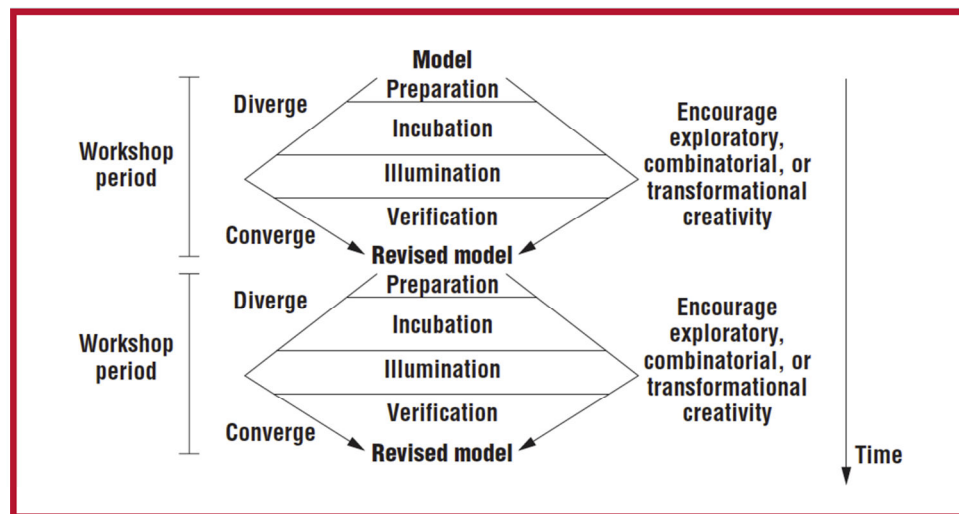
Step 4: Case Decision

- case decision group (CDG) prioritizes ideas and decides upon realization of a case

Where to get creativity?



Creativity workshops as elicitation method



(based on elements of Osborn's Creative Problem Solving Model)

Requirements Engineering II, Assignment 1: Creativity and Product Innovation

31.10.2011

Setting: you are developing a product and want to elicit requirements from your stakeholders → perform a creativity workshop

when to make a creative elicitation workshop? → system boundaries and system goals are set

Tools

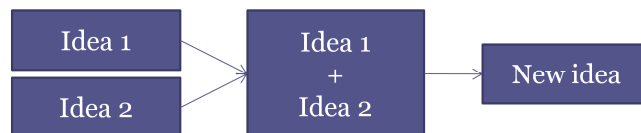
- use case modelling
- scenario-driven walkthroughs
- storyboarding
- **diverge:** collecting a huge amount of ideas
- **converge:** focus on a fewer amount of ideas, elaborate these ideas
- **Preparation:** setting up the workshop, creating models that should be discussed during workshop
- **Incubation:** phase before an idea pops into people's head. What you can do:
 - having presentations of other domain's experts (e.g. biology, music, theatre, etc)
 - make people listen to music, showing random pictures, etc.
- **Illumination:** phase, in which people come up with ideas!
- **Verification:** ideas are being revised

Creativity workshops as elicitation method

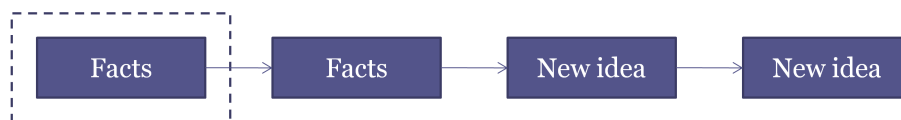
- Exploratory creativity:



- Combinatorial creativity:



- Transformational creativity:



Exploratory creativity:

- brainstorming
- analogical reasoning: look at problems/solutions of other domains (e.g. nature) and find analogies for your domain

Combinatorial creativity:

- Combine different ideas and form new ones (unforeseen combinations can create new requirements)
- e.g. use storyboards

Transformational creativity:

- Participants should become aware of constraints
- Participants should think about new ideas that work when these constraints are being dropped

Organizational requirements for creativity

StarSearch approach

- Build tradition of innovation
- Trust
- Reward people
- External moderator
- Discharge participants of other task

Creativity workshops

- Find right moment
- Find engaged stakeholders
- Make workshop flexible
- Leave time between workshops
- Deal with conflicts

**THESE ARE NECESSARY, BUT NOT
SUFFICIENT CONDITIONS!**

StarSearch

- **Trust:** people need to feel that their contribution is taken seriously: repeat a Star Search often! Remain committed, although at the beginning not many people do participate!
- **Reward people:** give incentives for employees to participate
- **Fair, democratic processes:** The state of the process should be transparent to all people involved. No one should feel deceived.
- **External moderator:** have an unbiased instance at the first sessions
- **Discharge participants of other tasks:** being creative should not lead to an additional amount of work!
- A **tradition of innovation** can only emerge if a lot of innovations calls are being made and participants see that it is worth taking part!

Creativity workshops

- Find **right moment:** find right moment for the workshop within the RE process. Best: after defining system boundaries and before use cases and key design concepts are created
- Find **engaged stakeholders:** finding the right people is crucial for success! people need to engage themselves into the workshop.
- **Flexibility of workshop:** don't put focus on process but on the ideas!
- **Leave time between workshops:** people need time to think about their ideas, talk to colleagues about them...
- **Deal with conflicts:** human beings are difficult. they might have fears regarding the project. make a comfy atmosphere. let them let off steam.

Realization of ideas requires a...

champion*

* a champion is an influential person who engages itself into realizing the idea!

Conclusion

- It is crucial for a company to have innovation in terms of a long-term economical growth!
- Fostering creative employees vs. creativity workshops
- Organizational requirements are important for success
- None of the approaches is completely elaborated.