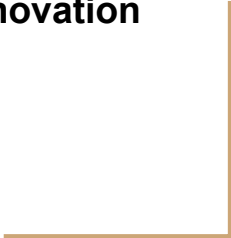


Requirements Engineering

Creativity and Product Innovation



Chris Wells
Remo Schenker

Agenda

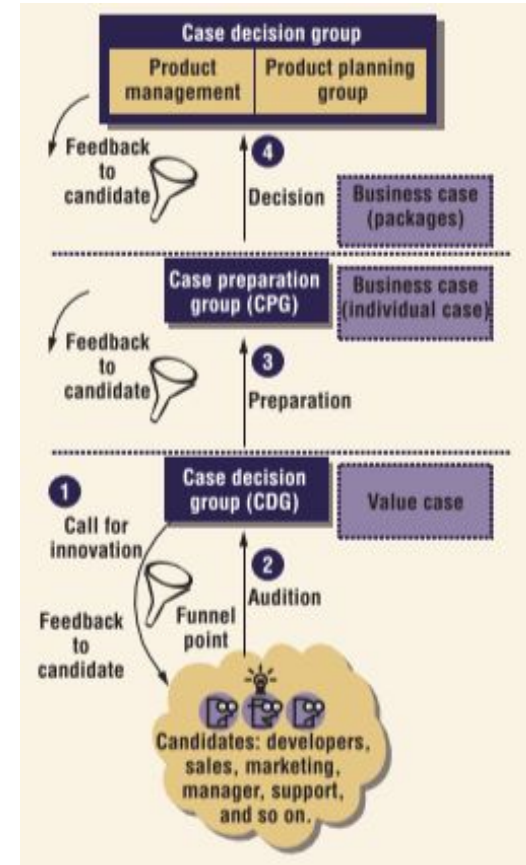
- How does Creativity relate to Requirements Elicitation?
- Star Search - A Lightweight Innovation Process
- RESCUE - Creative Requirements Gathering Process
- Group Discussion of Innovation in Light of Traditional RE

Creativity in Requirements Elicitation

- It is a mind setting that can complement elicitation techniques and approaches
 - E.g. Used in the CORA-2 Workshops (Maiden, Gizikis & Robertson, 2004, p. 70)
 - E.g. Group Work, Brainstorming and Joint Application Development (JAD) (Zowghi & Coulin, 2005, p. 28)
- It forms the basis for Innovation
 - E.g. Work Redesign as Step in the process of Contextual Design (Beyer & Holtzblatt, 1999, p. 39)

How does Star Search work?

- Why is this process needed?
- The Steps of Star Search
 - Call for Innovation by Audition Group (AG)
 - Audition
 - Case Preparation and Screening by Case Preparation Group (CPG)
 - Case Decision by Case Decision Group (CDG)



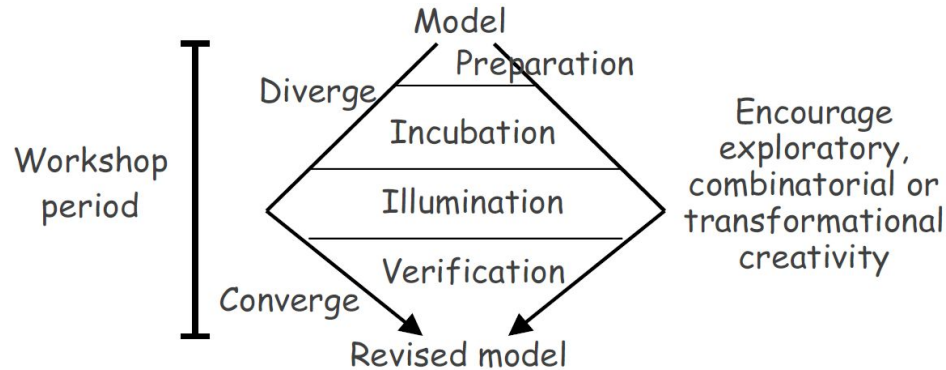
Was it effective?

According to Gorschek et. al (2010, p. 44):

- One site reported that 25% more candidates were auditioned, refined and selected for realization
- One site reported that 5% of candidates make it through the entire process
- Several ideas that passed the screening phase after introducing Star Search even though they were sitting a long time in the idea database beforehand

How does RESCUE work?

Requirements Engineering with Scenarios for User-Centered Engineering utilizes different modelling and analytical processes in parallel to drive the requirements engineering process.



Maiden, N., & Robertson, S. (2005). <https://files.ifj.uzh.ch/rer/teaching/re-ii/hs16/protected/as1/Maiden2005.pdf> [PDF]. IEEE Computer Society.

Was it effective?

RESCUE as an approach was effective in generating new ideas.

Exploratory:

Brainstorming vs. Analogical

Combinatorial:

Storyboards vs. Idea combinations

Transformational:

Constraint removal vs. solution space knowledge

	Workshop	Deliverable type	Number system-wide	Number use case-specific
Brainstorming	1	General new ideas from workshop1	24	24
	1	General new ideas from workshop2	13	0
Constraint removal	1	MSP constraints	26	0
	1	Ideas from MSP constraints	17	1
Analogical	1	Ideas from analogical reasoning with intelligent highway systems	3	8
	2	Ideas from analogical reasoning with software contract negotiation	7	0
Combinatorial	2	Ideas from combinatorial creativity with fusion cooking analogy	4	0
Solution space	3	Ideas from MSP visualisations	0	11
Storyboards	1	Workshop1 storyboards	0	2 story-boards
	2	Workshop2 storyboards	0	6 story-boards
	3	Workshop3 storyboards	1 story-board	0

Group Discussion

- What do you think how Star-Search relates to the mandatory reading?
- What do you think how RESCUE relates to the mandatory reading?

References

Beyer, H. & Holtzblatt, K. (1999) . Contextual design. *interactions* 6(1), 32-42. doi: 10.1145/291224.291229

Gorschek, T., Fricker, S. Palm, K. & Kunsman, S. (2010). A Lightweight Innovation Process for Software-Intensive Product Development. *IEEE Software*, 27(1), 37-45. Doi: 10.1109/MS.2009.164

Maiden, N., Gizikis, A. & Robertson, S. (2004). Provoking Creativity: Imagine What Your Requirements Could Be Lik. *IEEE Software*, 21(5), 68-75. doi: 10.1109/MS.2004.1331305

Maiden, N. & Robertson, S. (2005). Integrating Creativity into Requirements Processes: Experiences with an Air Traffic Management System. In *13th IEEE International Conference on Requirements Engineering* (p. 105-114). doi: 10.1109/RE.2005.34

Zowghi, D. & Coulin, C. (2005). Requirements Elicitation: A Survey of Techniques, Approaches and Tools. A. Aurum & C. Wohlin (Hrsg.) *Engineering and Managing Software Requirements* (19-46). Heidelberg: Springer.