Creativity and Innovation in V&V Research #1, SWELL course

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2009-09-23, Gothenburg

Goals

- Overview of the course
- Todays theme: “Popular Science Communication”
- Improve your communication skills towards industry & non-experts

Todays tasks

- Elevator talk
- Hallway talk
- Video recording of Elevator talk

Todays Agenda

- 8:00 - 8:20 Overview of glue course, course plan, schedule
- 8:20 - 8:40 Intro to writing/communicating with “non-academics”
- 8:45 - 9:30 Exercise in popular science writing (Richard)
- 9:30 - 9:45 Intro to your task: “Communicating my project”
- 9:45 - 10:00 Coffee break
- 10:00 - 11:00 Write elevator & hallway talk of your project
- 11:00 - 12:00 Recording video

Creativity & Innovation in V&V

- Acronym: CIV
- Points: 7.5hp (1.5hp/year) - adapted to your project
- Goals:
  - More innovations in and from your V&V research that affects industrial practice
  - More creativity within your project
  - More “adaptation” to industry needs
  - More communication/transfer to industry

V&V
Innovation

Creativity

Communication

Industry
needs

General | V&V & SE | Project

General | V&V & SE | Project

General | V&V & SE | Project

Course foci

- **Creativity** – What is it? Models and theory? Practical methods and tools?
- **Creativity in Research** – Examples of creative results and methods? Find examples in my area.
- **Innovation** – Differences between innovation and creativity, Engineering innovations, Patents, Open Innovation
- **Entrepreneurship** – How to commercialize research Intrapreneurship – Entrepreneurship in large organizations
- **Packaging and presentation of research results** – Communication strategies, Oral presentations, Blogs, Videos, Making complex knowledge understandable, Presenting my research to/in industry

Laws of human communication - 1

It's not what our message does to the listener,
but what the listener does with the message,
that determines our success as communicators

Laws of human communication - 2

Listeners interpret messages in ways which make them feel comfortable and secure.

Laws of human communication - 3

When people's attitudes are attacked,
they are likely to defend those attitudes and,
in the process, to reinforce them.

Laws of human communication - 4

People pay the most attention to messages which are relevant to their own circumstances and point of view.

Laws of human communication - 5

People who feel insecure in a relationship are unlikely to be good listeners.

Laws of human communication - 6

People are more ready to listen to us if we also listen to them.

Laws of human communication - 7

People are more likely to change in response to a combination of new experience and communication than in response to communication alone.

Laws of human communication - 8

People are more likely to support a change which affects them if they are consulted before the change is made.

Laws of human communication - 9

The message in what is said will be interpreted in the light of how, when, where and by whom it is said.

Different from a paper

- Science = theory/hypotheses + empirical data
- Scientific paper: Avoid ambiguity!
  - Prescribed form, impersonal language, concise/specialized language, lacks emotion
- Laymen believes “stories that ring true”

No r sten

Why is science difficult?

- Specialized language - words refers to processes
- Assumes knowledge map
- Meaning of topic taken for granted
- Objects/phenomena far from everyday experience
- Explanation = take someone from what she knows to what she does not yet know

Planning Communication

- Clarify aims
  - Why am I doing this communication?
  - Which category of people do I want to reach?
  - What change do I want to obtain?

My audience

- Clear & persuasive words exist only for a specific audience, not in general
- Who are they?
- What do they already know?
- What do they think about it?

Choose message

- Essential core that must get through
- Single sentence should sum it up
- Brief and clear, NOT generic

Elevator talk

- Q: “So, what do you do?”
- Answer in 30 seconds while elevator goes up
- 150 words!

Elevator talk - advice

- Write as you speak
- Max one technical term
- Analogy or short story to clarify concepts
- Avoid only giving background info
- Why is this work important?
- Practice on people and let them repeat

SWELL Elevator talk

SWELL is a collaboration between Swedish companies and researchers to help create software that works. We educate PhD's which are experts on software quality and can use their knowledge to improve how software is developed and tested.

SWELL Elevator talk 2

We also connect the students with the best researchers abroad and to companies they can help.

This ensures that their education has the right focus and leads to actual improvements.

SWELL Elevator talk 3

What we do is like building a bridge between two sides of a river. Once the bridge is in place people on the two sides can learn from each other and build something better together. Without the bridge people would go on as usual.

SWELL Elevator talk 4

This work is very important because software is everywhere. It runs our cars, calculates our taxes and makes sure we get an ambulance when calling 112.

We must ensure this software really works, so we need more knowledge and experts.
SWELL creates software quality experts that has that knowledge or can create more.

Hallway talk

- Q: “So, what do you do?”
- Answer in 3 minutes while there is a coffee break
- 800 words

Hallway talk - advice

- Resist rewriting a paper for another audience
- Focus on one main piece of research
- Fit your work into sub-discipline
- Define key questions (and why they are important)
- Discuss anticipated outcomes from research

Pointers

- The info in these slides are based on:
  - G. Carrada, “Communicating Science - A scientist’s survival kit”, European Commision, 2006
  - C. Gale, “The Elevator Talk”, ACM Interactions, pp. 64-65, May/June 2006
  - C. Gale, “Transitioning to the Hallway Talk”, ACM Interactions, pp. 60, Nov/Dec 2006