Western Norway University of Applied Sciences

Virtual Reality, Simulation and Serious Games for Emergency Management Training

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15. February 2018

Future Research Challenges
15 - 16 February 2018 / Budapest, Hungary

Førde

Sogndal

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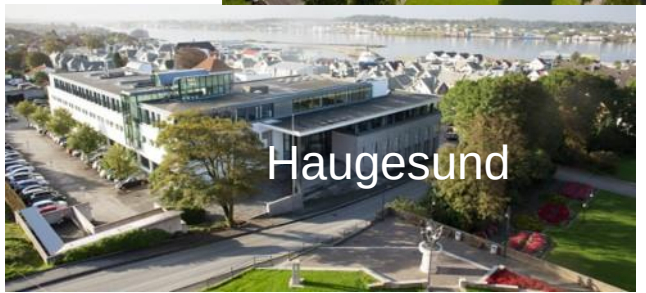
Haugesund



Western Norway University of Applied Sciences

Has (in Norway):

- the largest teacher training program education
- the largest range of bachelor programs in engineering
- Most modern facilities for simulation-based education within health care (SimArena)
  - Health technologies
  - 40+ simulator rooms

Facts:

- 16,000 students
  - BSc
  - MSc
  - PhD
    - ICT Engineering
    - Responsible Innovation
    - …
- 1,800 employees

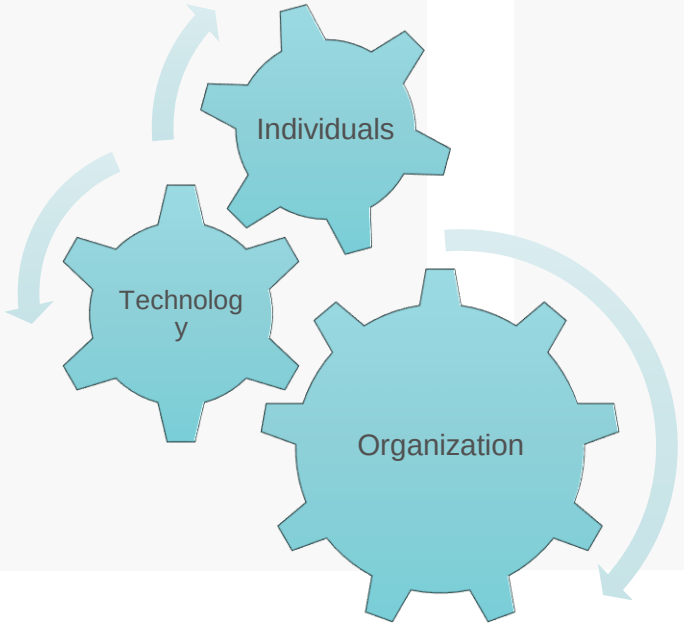
My background

Work:

Sweden

- Ericsson AB
- Chalmers University,
- Uppsala University,
- Skövde University

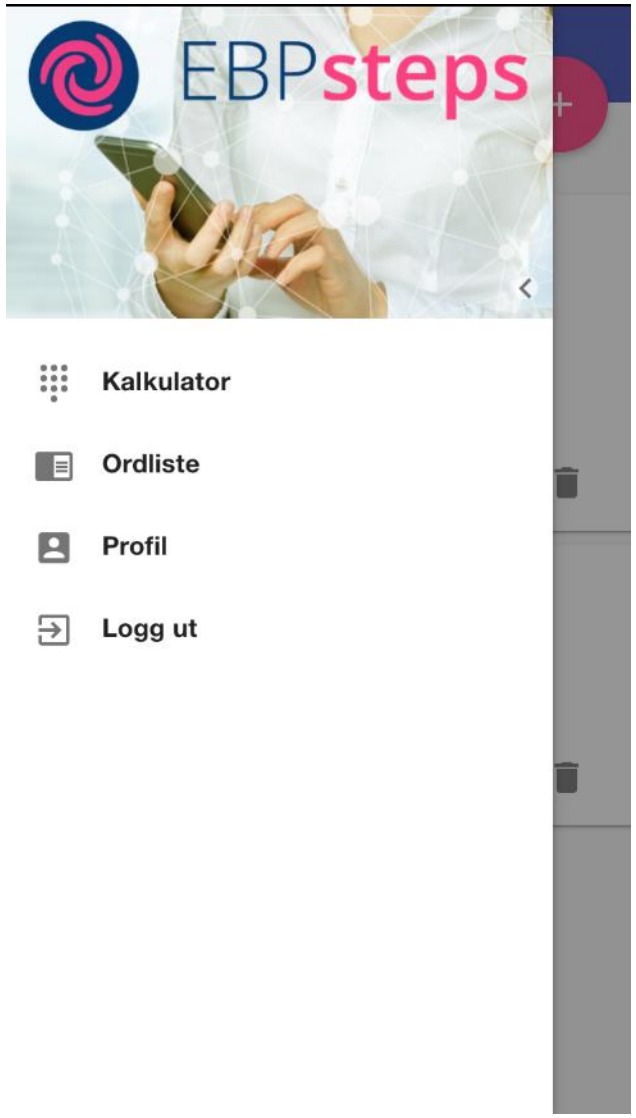
Norway

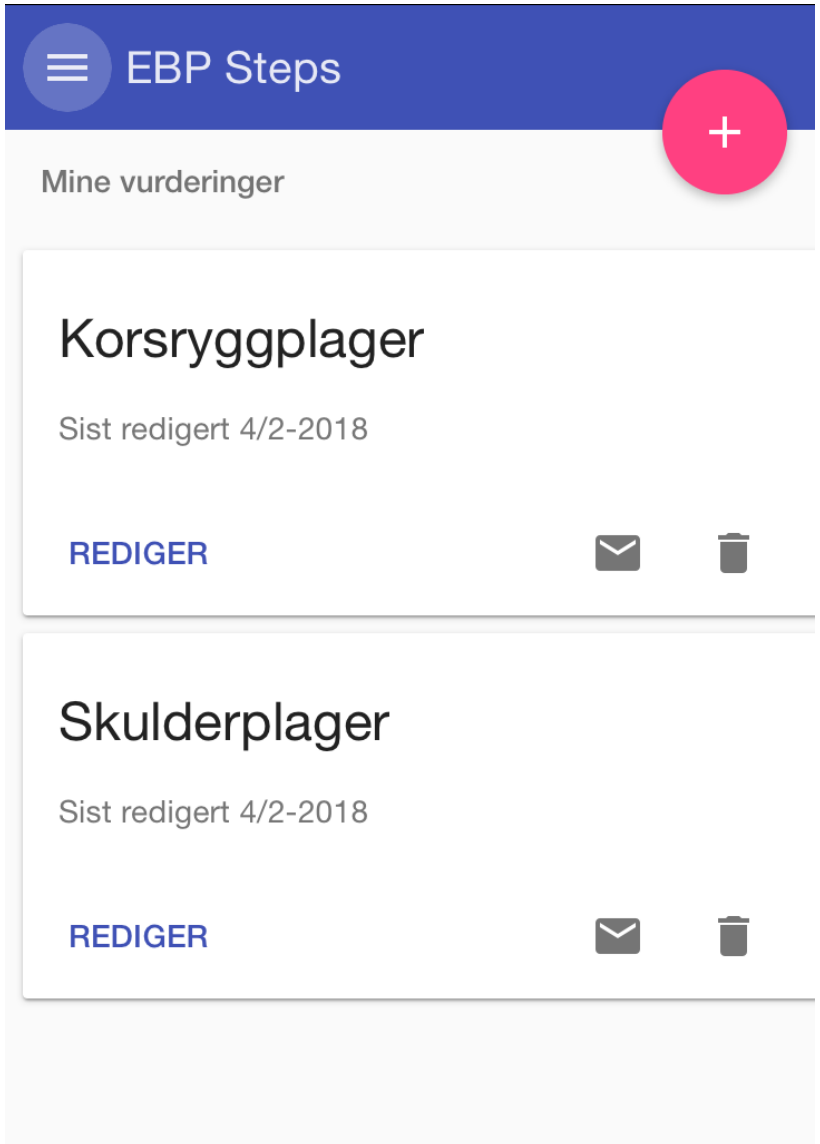


- Research
- Usability / UxD / Interaction Design
- Technology in Organizations (TA)
  - Technologies
    - Virtual / augmented reality
    - Simulation and Serious games
  - Areas:
    - Emergency management
    - Health technologies

Developing new technologies for health: Eye tracking

Developing new technologies for health: EBP steps





Training prehospital care: from getting the alarm call …





Time

Call

Driving — Assistance

Communication — Finding place — Other people

At the place — Environment — E. effects

In the ambulance — Loading — Instruments — Tools — Communication care

Debriefing — Living the patient

24 nurses

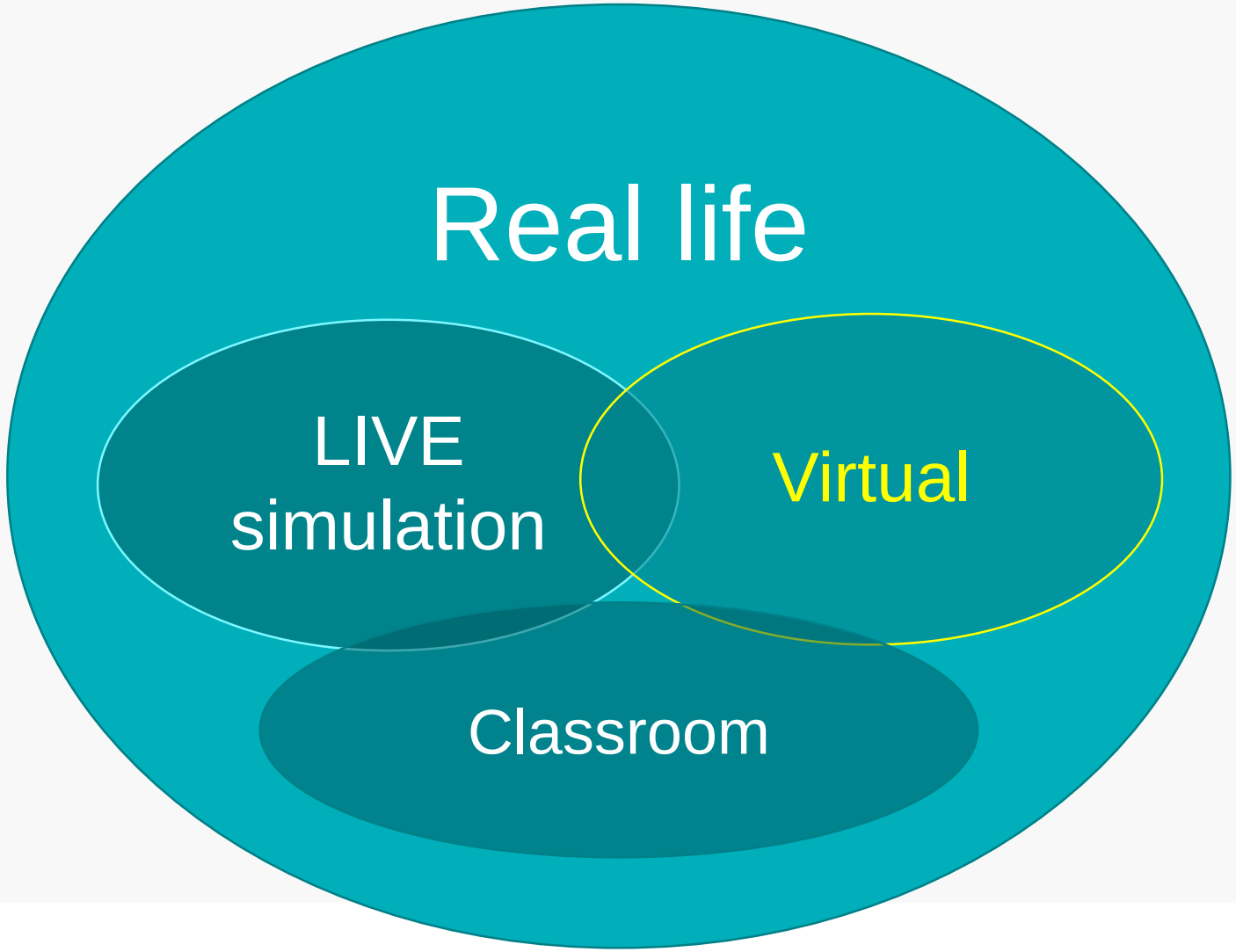
Simulation rich during the timeline

Virtual Reality, Simulation and Serious Games Supporting Training for Emergency Management

- New value creation
- Collective change by large scale adoption
- Interorganizational collaboration
- Potential change to the community (paradigm shift)

What is a virtual training?

How do the ‘virtual’ complete ’other’ training?



If virtual reality simulation and serious games are allowing to train the impossible:
Why they are not used?

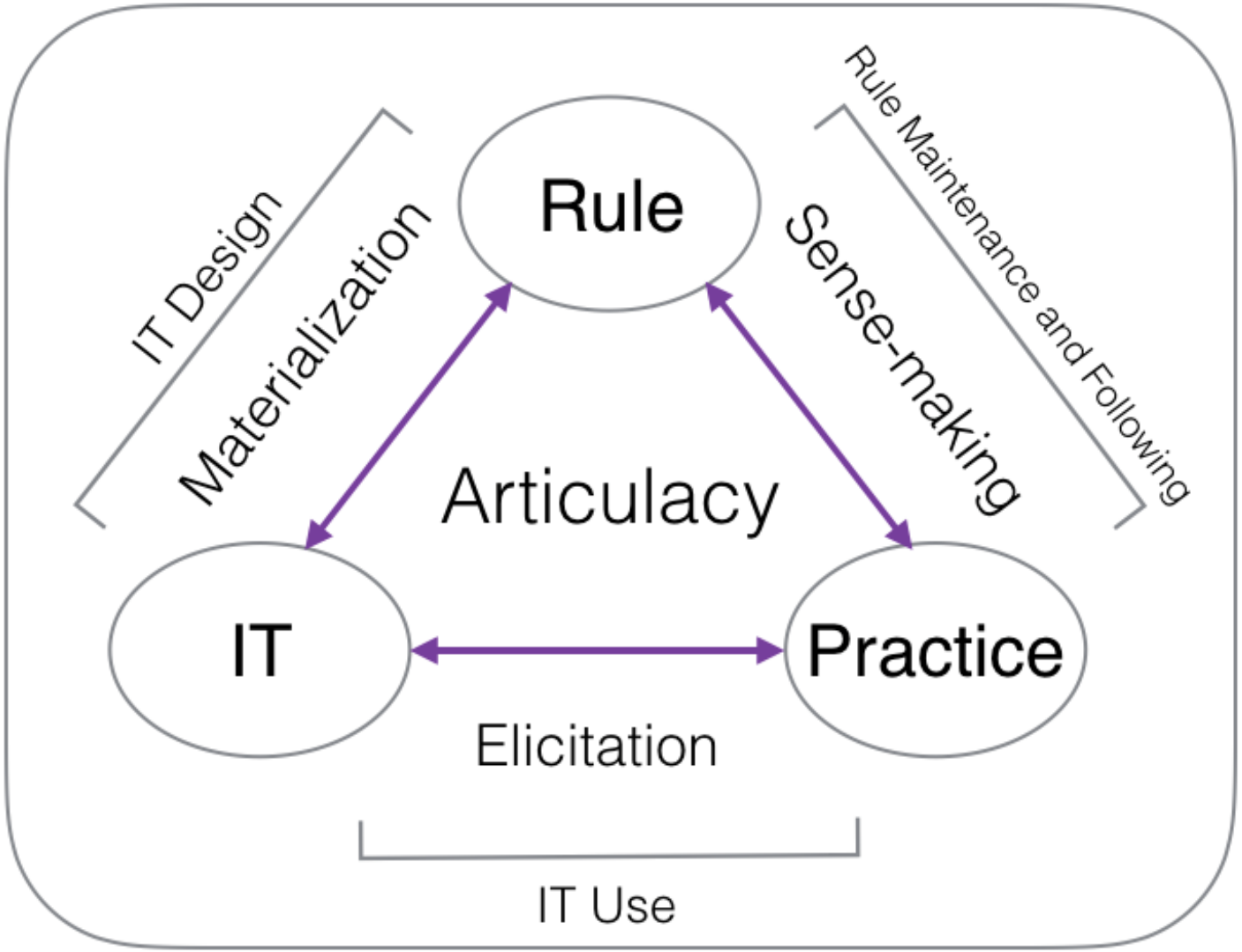
Adoption models

- **Davis, 1986**: Technology Acceptance Model (TAM) … introduced 'perceived usefulness' and ''perceived ease of use'
- **Venkatesh and Davis …. Several versions (TAM2, UTAUT)**

- **Orlikowsky, 2007: SG as concept of socio-material practice** artifacts in social practices become more significant than the IT artifacts itself in molding the rule based regulation
- **Bijker and Pinch, 1993** Also according to Social Construction of Technology (SCOT) model: How we construct meanings for IT artifacts

- **Fomin** & (2016) the "closure" on IT use and meaning, however, leaves space for "interpretive flexibility"
-

IT-based regulation in organization



(Fomin, V. 2016)

Challenges and future work:
Value creation for using the ‘virtual’ better

- Accuracy … define contextual training
  - Data from international databases -> training in real environment
- Realism of the ‘virtual’ … for creating values
- The role of instructors

- To meet users and developers (co-design)
- New methods for training and integrating virtuaare necessary
- Education has to be open and consider

  Technical and organizational changes

  New rules are to handle needed

Questions?

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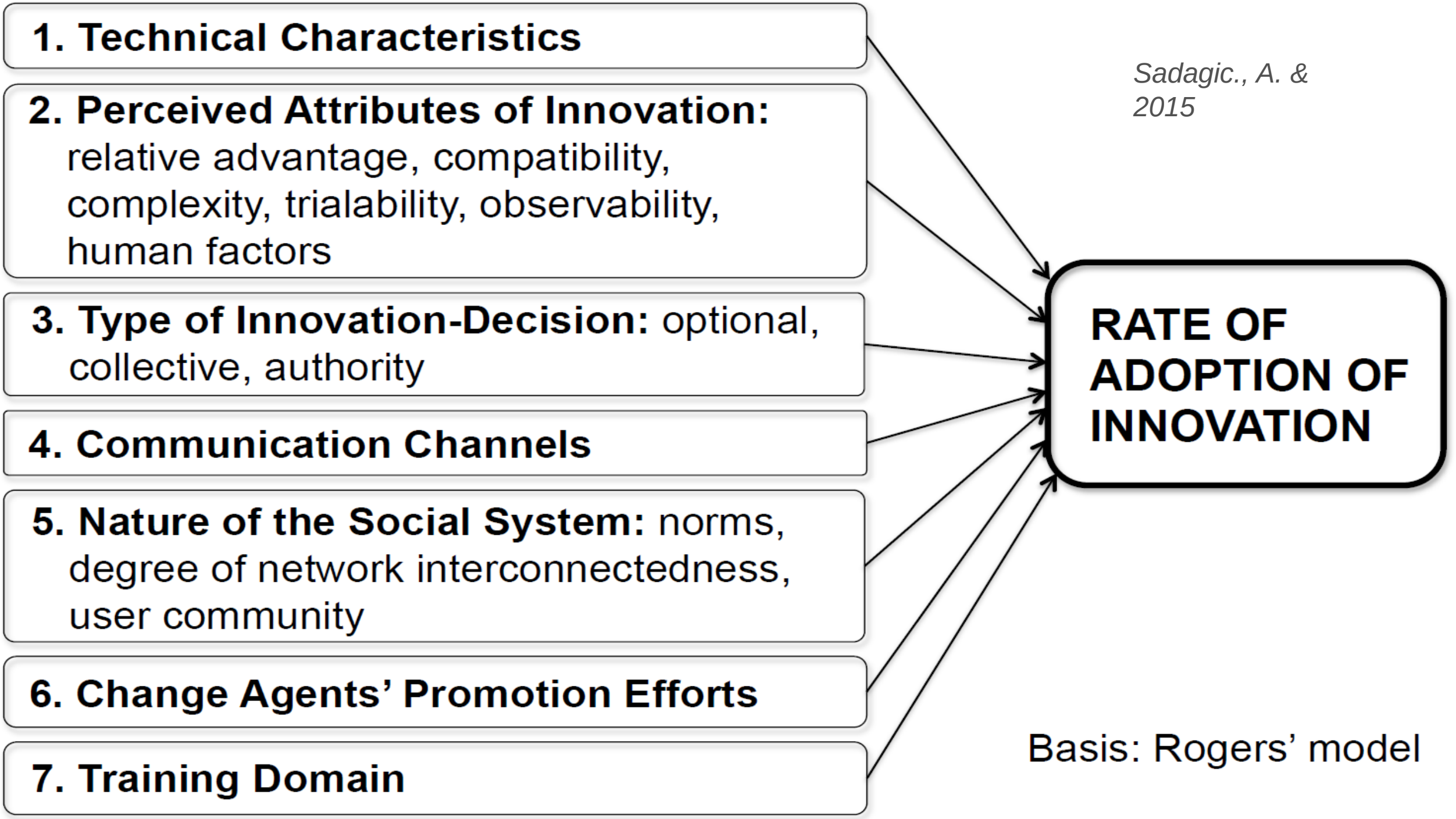
1. Technical Characteristics
2. Perceived Attributes of Innovation: relative advantage, compatibility, complexity, trialability, observability, human factors
3. Type of Innovation-Decision: optional, collective, authority
4. Communication Channels
5. Nature of the Social System: norms, degree of network interconnectedness, user community
6. Change Agents' Promotion Efforts
7. Training Domain
RATE OF ADOPTION OF INNOVATION
Sadagic., A. & 2015
Basis: Rogers' model