



2017 MAI 25

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Immersive Process Systems

Benefits and future directions

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Human cognition is strongly embodied

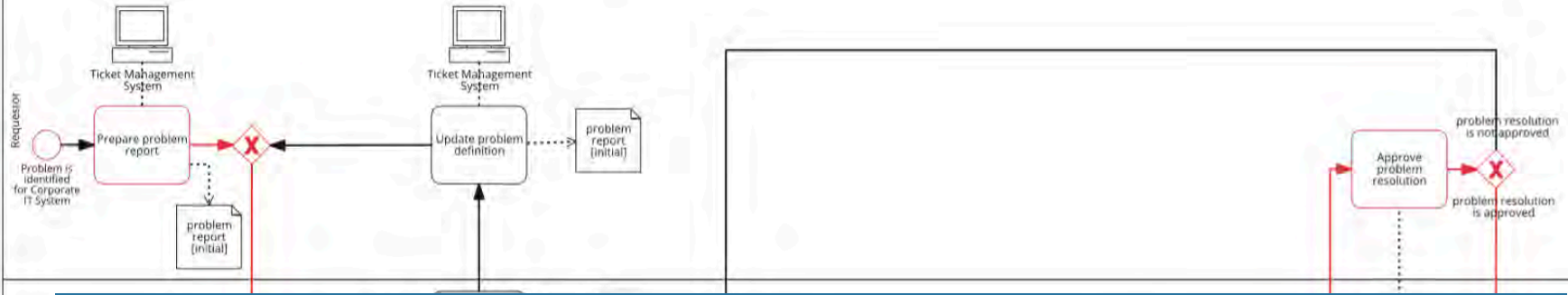




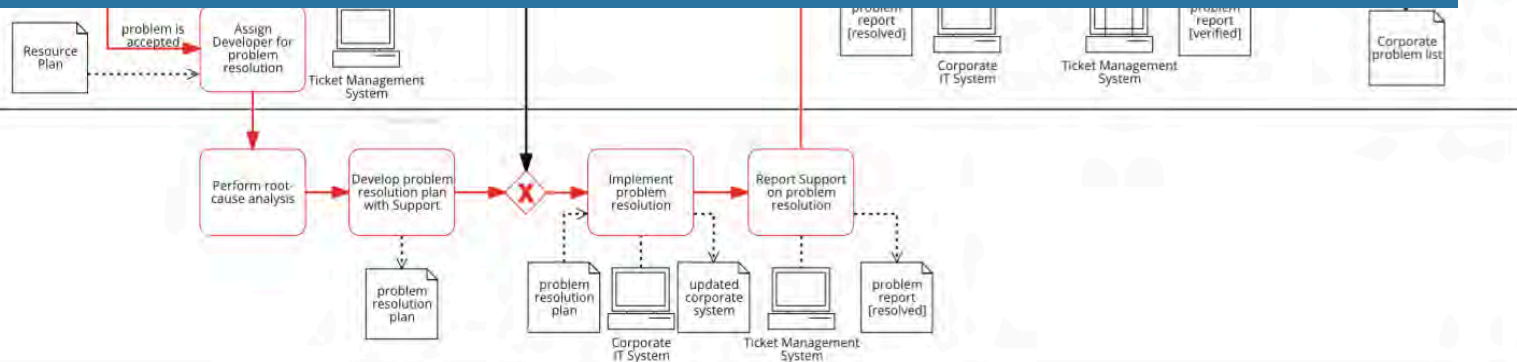
WRESTLEMANIA VII







Business processes involving humans are contextualised when enacted





Immersive embodied business process tools

Case Study #1 - Process Elicitation


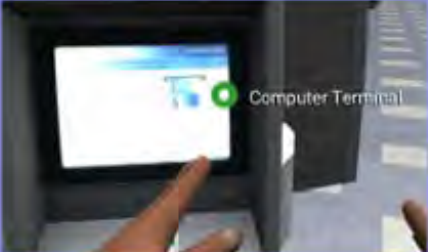



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Case Study #1 – Virtual Reality Role-play for Process Elicitation

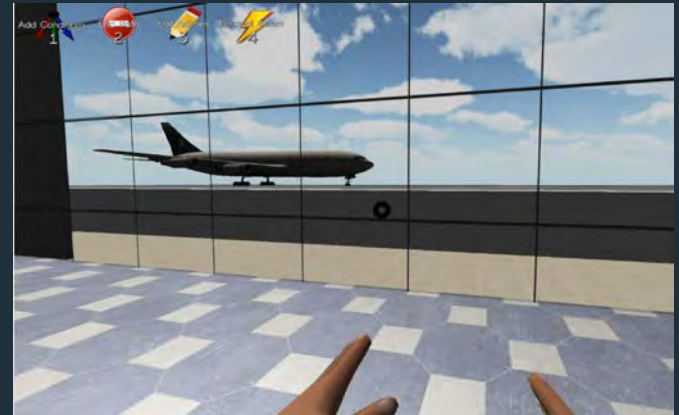
3D Virtual World Objects				
Natural Language	Passenger uses Computer Terminal to print Check-In Information			
S-BPM Components	Subject		Object	Predicate

Embodied Process Systems/Tools

Experiment #1 – 2D vs 3D Virtual World

VS

- 64 people randomly assigned A/B
- Naïve modellers
- Experienced travellers
- Moderate virtual world experience
- Appropriate proxies for domain stakeholders



Desktop vs Virtual Reality



VS



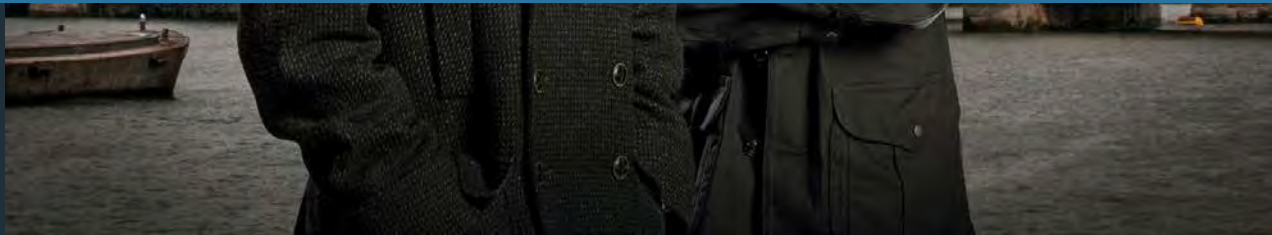
Elicitation Experimental Results [1-3]

- H1: Desktop virtual world specify larger number of task steps - **confirmed**
- H2: Create fewer erroneous task sequences in virtual world - **confirmed**
- H3: Desktop virtual world will use a more consistent set of words to describe tasks – **confirmed**
- H4: Virtual Reality immersion elicits more activities in greater detail – **confirmed**

Case Study #2 – Process Palace



Mnemonic Training Reshapes Brain Networks to Support Superior Memory, Dresler, Martin et al. Neuron, 93 (5), 1227-1235



Experiment #2 – 2D vs Process Palace

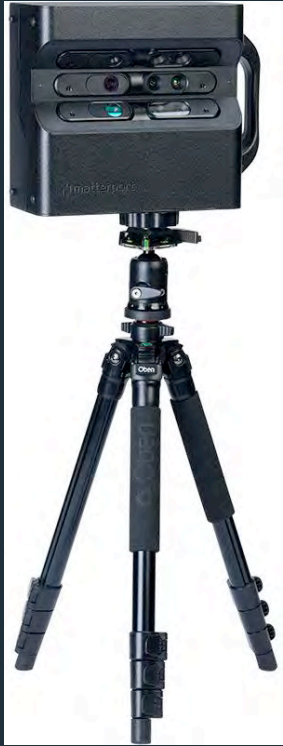
- 40 people randomly assigned A/B
- Vrije Uni. and Rostock Uni. Students
- Naïve modellers
- Appropriate proxies for process trainees

VS



Elicitation Experimental Results [4]

- **H1:** Virtual world participants recalled more information about the process - confirmed
- **H2:** Virtual world participants were more accurate in their recall - confirmed
- **H3:** Virtual world participants were faster in answering questionnaire - confirmed
- **H4:** Virtual world participants did not show greater understanding of process concepts – not confirmed

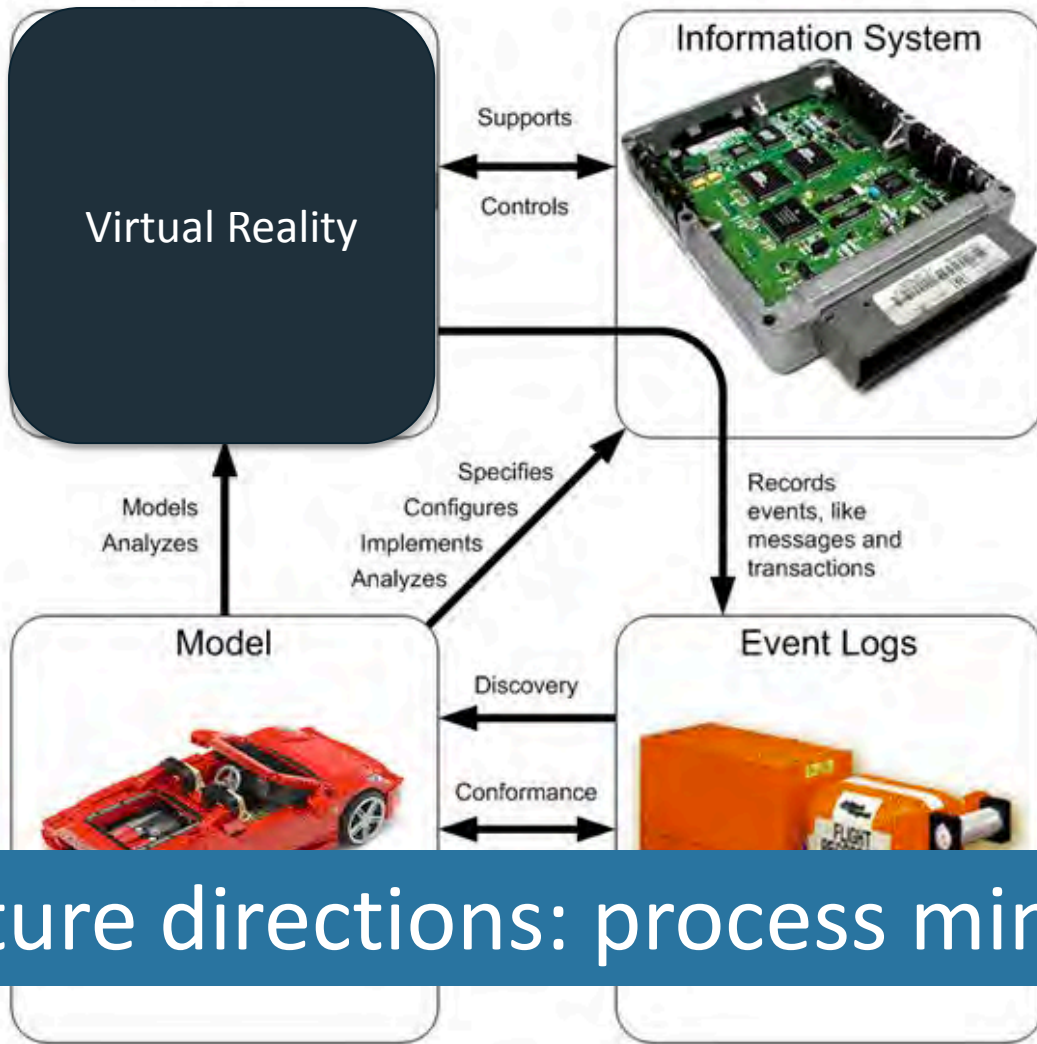


Future directions: Matterport

<https://www.youtube.com/watch?v=9IRtihBOj3M>



Future directions: HoloLens and
collaboration



Future directions: process mining

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Questions?

#BPMConferencePortugal2017

References

1. Harman, J., Brown, R. and Johnson, D., (2017) Improved Memory Recall in Virtual Reality: New Experimental Results and Insights, Interact, Mumbai, 2017 (accepted).
2. Joel Harman, Ross Brown, and Daniel Johnson. (2016). The role of immersion during situated memory recall within virtual worlds. In *Proceedings of the 28th Australian Conference on Computer-Human Interaction (OzCHI '16)*. ACM, New York, NY, USA, 1-10. DOI: <https://doi.org/10.1145/3010915.3010945>
3. Harman, Joel, Brown, Ross A., Johnson, Daniel, Rinderle-Ma, Stefanie, Kannengiesser, Udo (2016) Augmenting process elicitation with visual priming: An empirical exploration of user behaviour and modelling outcomes, *Information Systems*, 62, pp. 242-255.
4. Aysolmaz, Banu, Brown, Ross A., Bruza, Peter D., & Reijers, Hajo A. (2016) A 3D visualization approach for process training in office environments. In *On the Move to Meaningful Internet Systems: OTM 2016 Conferences: Confederated International Conferences: CoopIS, C&TC, and ODBASE 2016, Proceedings (Lecture Notes in Computer Science, Volume 10033)*, Springer, Rhodes, Greece, pp. 418-436.