

18th European Conference on Knowledge Management
7./8.9.2017, Universitat Internacional de Catalunya, Barcelona, Spain

**The Importance of Space in Knowledge Sharing Online:
The QUBE Approach**



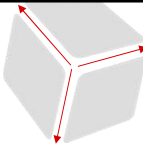
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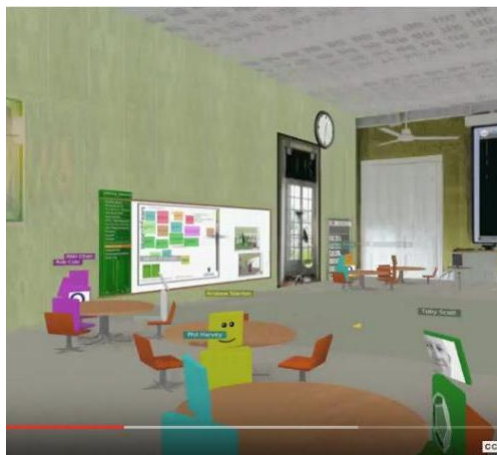
- **Eddie Obeng:** Prof., Founder and Learning Director of Pentacle (The Virtual Business School, UK) and Professor at the School of Entrepreneurship and Innovation, Henley Business School (UK). Eddie is a British organisational theorist, educator and author.
- **Willi Bernhard:** Dipl. El. Ing. HTL/FH. Since 1984, he has been engineer, lecturer and researcher in industrial and academic organisations in the domains of Telecommunication, eLearning, Modelling & Simulation, Business-Creativity & Idea management, eCollaboration, Technology Enhanced Learning as well as Simulation- & Game Based Training and Complexity Management.
- **Nicole Bittel:** Master of Arts, University of Zürich. Her research focuses on the topics of organizational and educational storytelling, e-collaboration, knowledge management and e-learning as well as on methodological skills in (applied) research and management.
- **Victoria Mirata:** Master degree in Work Psychology, English and German, University of Frankfurt am Main. Her main research interests are in the domain of work & organizational psychology and include e.g. motivation, creativity at work, recruitment & selection process of employees, human resource management and team development.

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Agenda

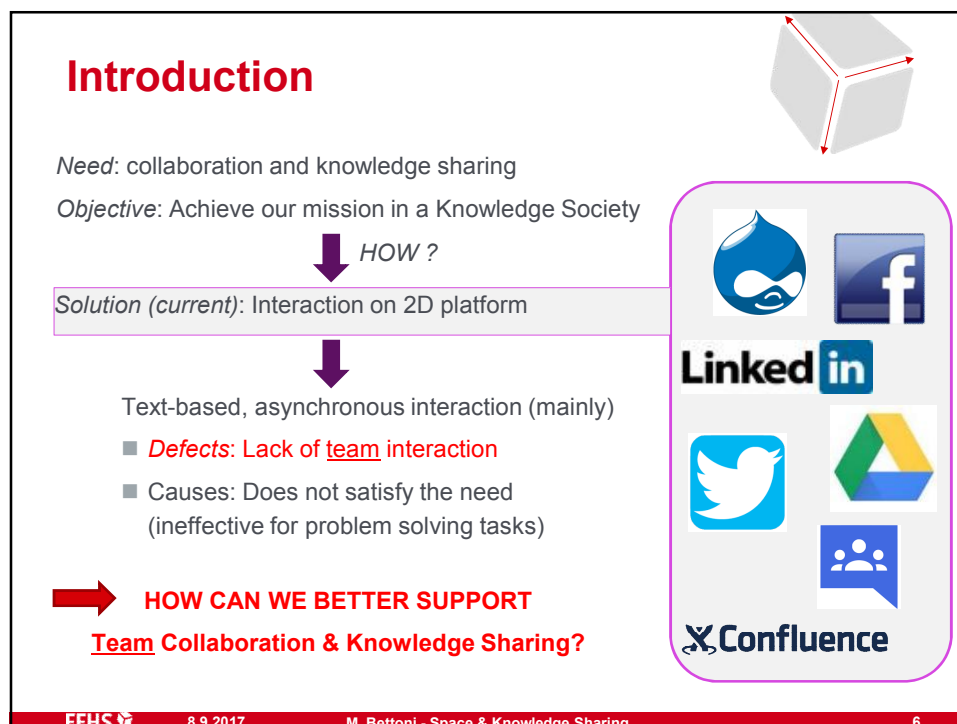
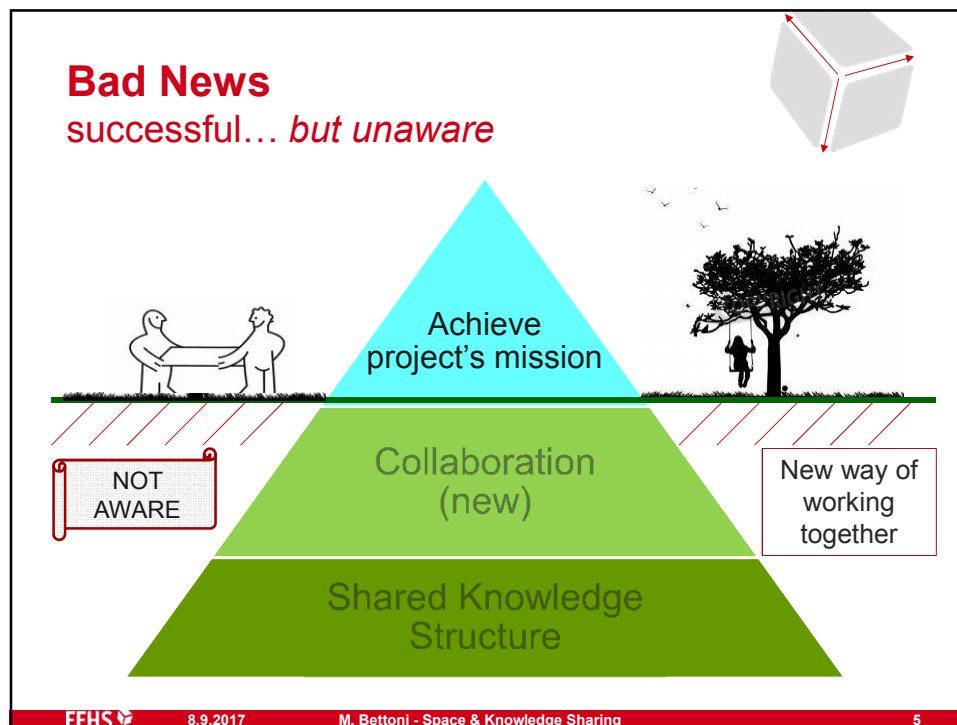
1. Introduction
2. Collaboration & Knowledge Sharing
3. Space and Knowledge
4. QUBE, a 3D System
5. Conclusion



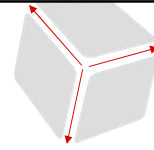
Good News

Paradigm shift of «collaboration»...





Clarifying Collaboration by distinguishing interactions ...



Cooperation

- task is **split** into pieces
- each person is **responsible** for one piece



Collaboration (1)

- task remains a **unit** (everyone works on the whole task)
- each person is **responsible** for the whole



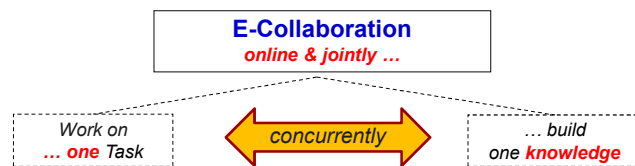
- participants construct and maintain a **shared knowledge structure** as a basis for accomplishing their task

(1) Roschelle & Teasley, 1995

NEW
practice

Concept of E-Collaboration

adapted from Roschelle & Teasley (1995)

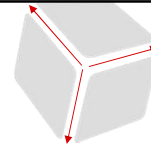


E-Collaboration: Interact online to work on a single, shared task. Concurrently, as a basis for this, construct and maintain a shared knowledge structure (SKS). Do this with the support of participative leadership and E-Tools.



Bettoni, Bittel, Bernhard & Mirata (2016)
eSF – An E-Collaboration System for Knowledge Workers.
In: A. Kok & H. Lee (eds.) Cultural, Behavioral, and Social Considerations in Electronic Collaboration. IGI Global, USA
<http://www.igi-global.com/book/cultural-behavioral-social-considerations-electronic/134811>

Space is essential for Collaboration



2D Platforms:

- Lack of team interaction / users *cannot interact in their usual, natural way*

3D Platforms:

- More intense interaction, easier collaboration

WHY?

- Understand essence of 3D => take advantage from 3D opportunity

Essence of 3D:

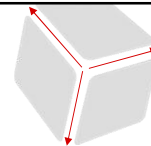
- "Space is a necessary a priori mental construct, which underlies all outer perceptions (*Anschauungen*)" - Kant 1787, CpR, B38.
- Claim: **Space is present in every thought**
- Evidence: visual thinking, muscular thinking, mirror neurons, method of loci, visual metaphors & figurative language



Hypothesis:

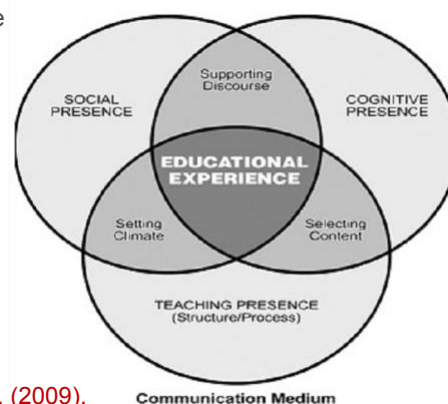
- Space is essential for collaboration: Spatial clues make interaction more intense and collaboration easier

Presence Model of Online Learning Community of Inquiry (CoI)

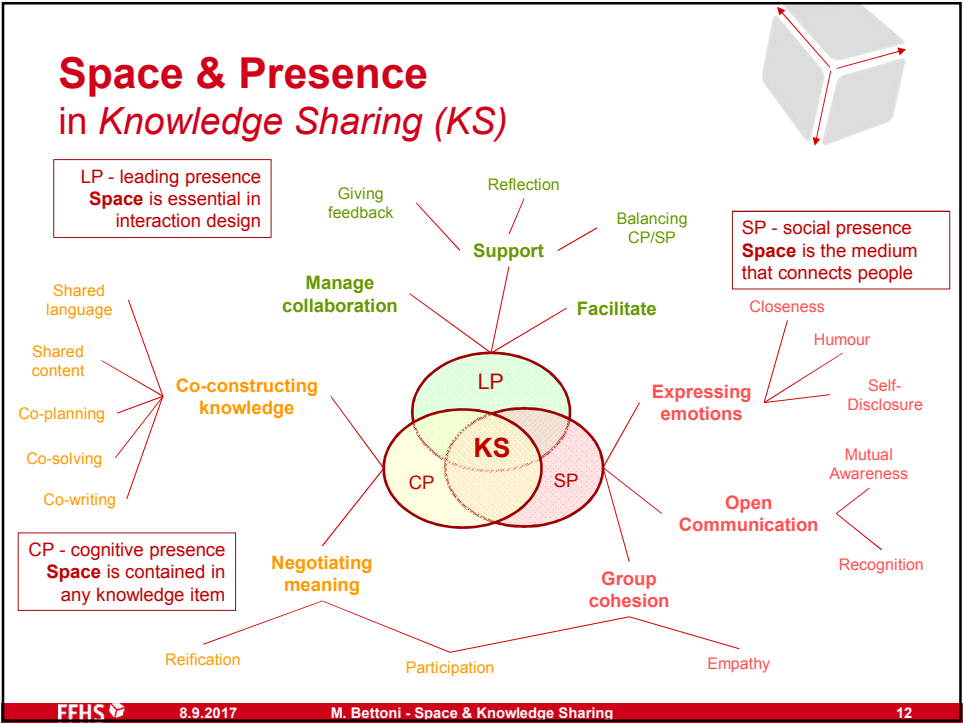
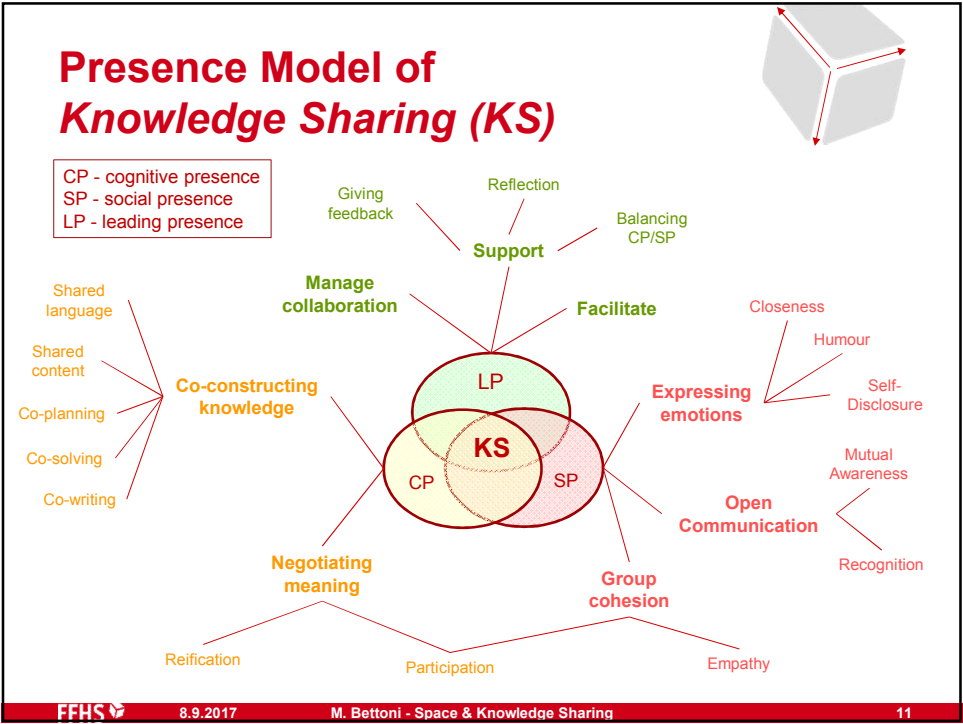


- views the online educational experience as arising from the interaction of three presences

- cognitive presence
- social presence
- teaching presence.

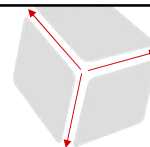


by Swan, Garrison, & Richardson, J. (2009).



3D System QUBE

<http://qube.cc/>



Three elements

1. **Learning support:** users collaborate in space
2. **Doing oriented:** real world scenarios (cases) & real world methods
3. **Technology enabled:** avatar 3D environment

Individual avatar

- Simple box figure, enough to foster identification

Real world methods

- PET: Performance Enhancing Tools
- Design how to accomplish a task / a step in a task

Interact in space

- Meet at a panel, write sticky notes, attach them to a panel, point to objects in space, sit at tables, gather in circle, etc.

<https://www.youtube.com/watch?v=fQY5CrQZ8Ns>



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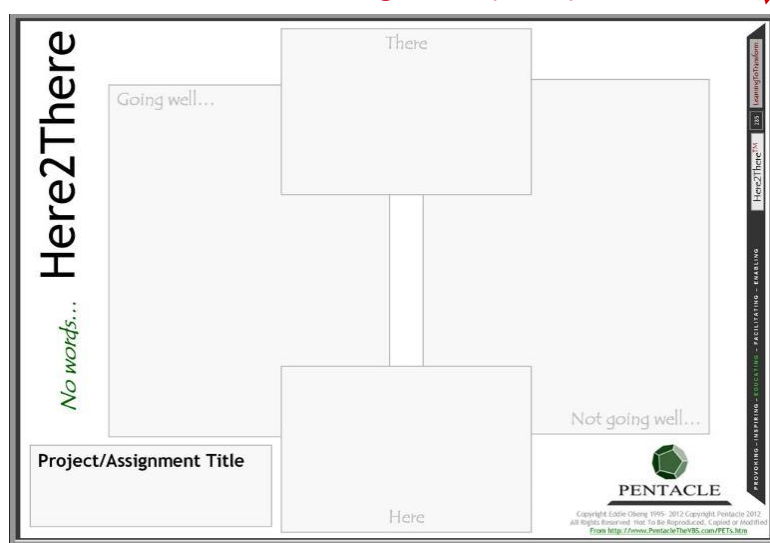
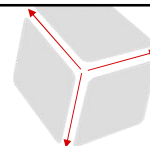
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Interaction Design

Performance Enhancing Tool (PET)



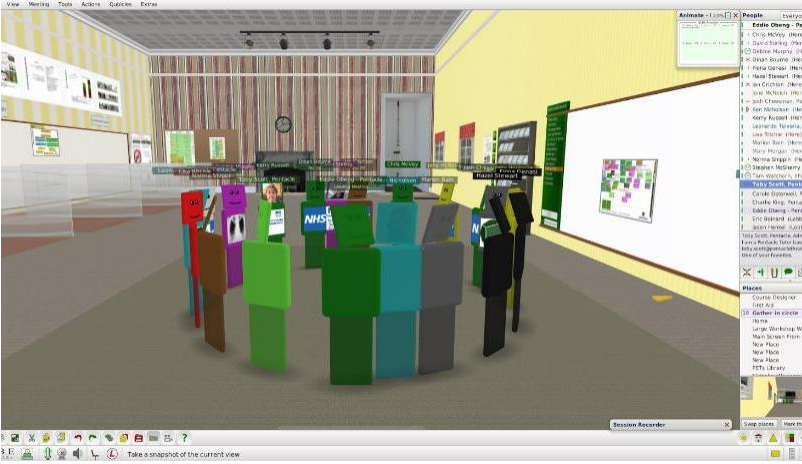
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3D System «QUBE» - Pentacle (GB)

Plenum



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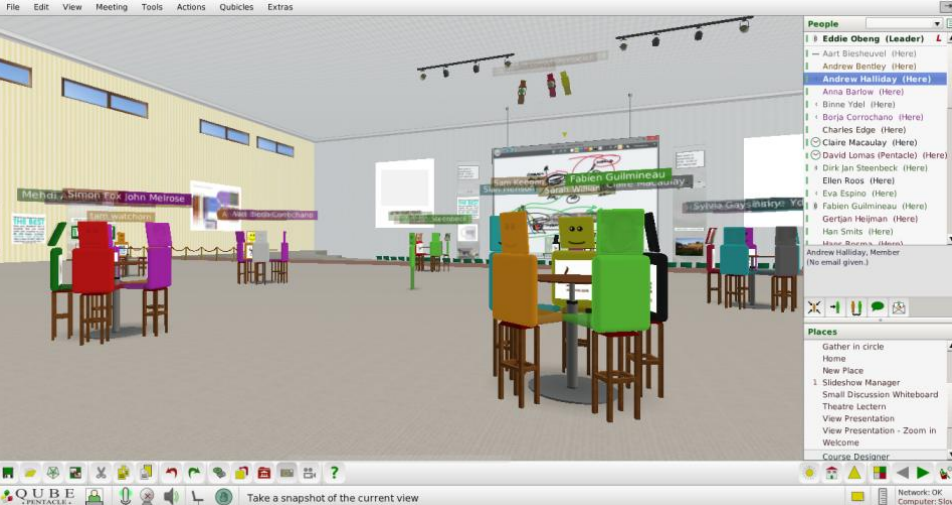
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3D System «QUBE» - Pentacle (GB)

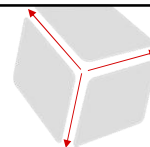
Breakout session



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3D System «QUBE» - Pentacle (GB) Webinar



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Conclusion

Collaboration (new)

- is based on Knowledge Sharing

Space is essential for Knowledge Sharing

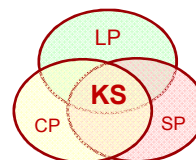
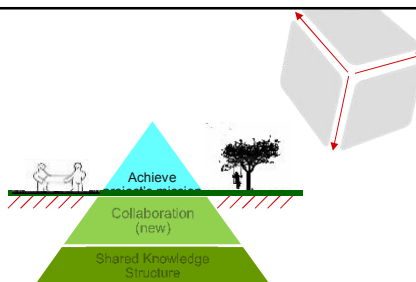
- space is contained in any knowledge item (**cognitive** presence)
- space is essential as a medium connecting individual to group (**social** presence)
- space should influence interaction design and facilitation (**leading** presence)

Online collaboration can be made more efficient and effective by:

- spatial functionalities
- suitable interaction methods (PET = performance enhancing tool)

QUBE fulfils these requirements

- <http://qube.cc/>



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