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# How to measure Teamwork Quality in Virtual Teams

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It's About People 2022



# Agenda

- Introduction – Markus Behn
- Research Background
- Methods
- Results – Virtual Teams
- Results – Teamwork Quality
- Discussion of Results
- Conclusion
- Questions and Answers



# Introduction – Markus Behn



- Hildesheim, Germany
- 42 years, married, one son, two Labradors
- Professional Background:
  - Diplom-Wirtschaftsingenieur (Industrial Engineer)
  - Master of Business Administration
  - PhD in Project Management (3<sup>rd</sup> year)
- Siemens (5 years), SKF (18 years)
- Ca. 5 years in Business Development (Automotive, Renewables, Electronics)  
10+ years in Project Management (Product Development, Change Projects)



# Research Background



- 16% of all companies worldwide are fully remote and the number is rising (Steward 2022)
- Recently, many companies switched to remote work due to COVID-19:
  - For >50% of the workforce it was a new experience (Lister & Kamouri 2020)
  - No playbooks were available for such a spontaneous change (Mortensen & Hadley 2020)
  - Managers were/are worried concerning employee's performance (Lindner 2020, 5)
  - 64% of leaders plan to change to remote work permanently (Meluso et al, 2020, 55)
  - For Generation Y (Millennials) and younger virtual collaboration will become part of the company culture (Tamang 2020)
- No tool available to measure the quality of collaboration within Virtual Teams
- First literature study required to investigate if anything exists for co-located teams that could be adapted for Virtual Teams



- Literature study has been done in three steps:
  1. Planning stage
    - Definition of the research problem and consideration of literature inclusion/exclusion criteria (Clark et al, 2019, 41-42)
  2. Literature investigations
    - In total ca. 100 sources have been examined (most have been found with Google Scholar and/or Web of Science)
    - Key search terms: Teamwork Quality and Virtual Teams
    - Most sources were not older than ten years (with some exceptions due to importance)
    - 46 sources were used for the study (half of them are used for this summary)
  3. Documentation
    - Has been done in form of a research paper

# Results – Virtual Teams 1/2



- A virtual team is ...
  - ... from a location and/or organisation perspective separated from each other and
  - ... depends on digital collaboration based on ICT(Nickel & Keil 2021, 14; Scott & Wildman 2015, 13; Zigurs 2003, 340)
- Drivers for Virtual Teams:
  - Technology improvement (RW3 CultureWizard 2018, 3)
  - Globalization and higher need for innovation (Adamovic 2017, 2159)
  - Pandemic situation due to COVID-19 (Wrycza & Maślankowski 2020, 1)
- It is more difficult to solve problems remotely (Saltman 2020)
- “Proportion of teamwork time spent working virtually” and “The proportion of member virtuality” can be calculated (Schweitzer & Duxbury 2009, 281)

$$WV = \frac{\sum \text{hours members spent working virtually}}{\sum \text{hours members spent on team tasks}} \cdot 100\%$$

$$MV = \frac{\text{Number of different member locations}}{\text{Number of team members}} \cdot 100\%$$



# Results – Virtual Teams 2/2



- Gibson & Gibbs defined the 4 key characteristics of Virtual Teams (2006, 451)
  - Geographical dispersion
    - Experts from all over the world could participate in Virtual Teams
    - Lower salary costs in specific countries could motivate managers to extend virtual teams to these regions
  - Electronic dependence
    - As Virtual Teams depend on ICT, it is the responsibility of leaders to ensure all required systems work according to team member's needs (Hacker et al, 2019, 2)
    - Even if ICT works well, team members communicate differently/less, which can lead to different assumptions about the team or project status (Wong & Berntzen 2019, 7)
  - National diversity (includes cultural diversity)
    - Culture has an important impact on people's attitude and is amongst others based on geographical, ethnic, economic, and political influences (Abyad 2017, 17)
    - Culture is the "collective programming of the mind which distinguishes the members of one human group from another" (Hofstede 1981, 21)
  - Structural dynamism
    - Changes can happen frequently (Gibson & Gibbs 2006, 453) and a dynamic structure can increase uncertainty which might hamper open communication and knowledge sharing within the team (Gibbs et al, 2017, 4)



# Results – Teamwork Quality (TWQ)



- TWQ is a measure for the quality of collaboration in co-located teams (Hoegl and Gemuenden 2001, 439)
- Six facets have been identified (Hoegl and Gemuenden 2001, 437):
  - Communication (Frequent, informal, direct, and open)
  - Coordination (Well-structured and synchronized efforts within the team)
  - Balance of Member Contributions (All team members can bring in their full expertise)
  - Mutual Support (All team members help and support each other)
  - Effort (Team members exert all efforts to the team's tasks)
  - Cohesion (Team members maintain the team, there is team spirit)
- Highly collaborative teams usually show behaviours of all six facets (Hoegl et al, 2004, 41)





# Discussion of Results



- Hoegl's and Gemuenden's methodology (2001) looks like the best fit for the measurement of TWQ in Virtual Teams
- Their survey could be reduced to 36 statements (coming from 60) with a five-point answer scale
- To calculate Schweitzer's and Duxbury's "Proportion of teamwork time spent working virtually" and "The proportion of member virtuality" (2009, 281), the survey must be extended by the following questions:
  - How many hours did you spent working virtually?
  - How many hours did you spent on team tasks?
  - In how many different locations are the members of your team based?
  - How many members are part of your team?
- These 40 statements/questions will be an adequate input for the measurement of TWQ in Virtual Teams

# Conclusion



- Virtual teams will become the new reality and a standard for next generations
- Literature study determined many sources but Hoegl's & Gemuenden's work (TWQ) as well as Schweitzer's & Duxbury's work (Virtual Teams) became the main sources for a tool to measure TWQ in Virtual Teams
- Next steps:
  - Pre-test the survey with a pilot group of people
  - Implement the survey as a tool to gather data for regular measurements of TWQ
- It's About People
  - The possibility to measure TWQ in Virtual Teams should inspire researchers to investigate how Teamwork Quality in Virtual Teams could be improved

# Questions and Answers



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Thank you very much for your attention

# Literature



#	Source
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4	Gibbs, Jennifer L., Heewon Kim and Maggie Boyraz. 2017. Virtual Teams. <i>The International Encyclopedia of Organizational Communication</i> : 1-14. DOI: 10.1002/9781118955567.wbieoc215.
5	Gibson, Christina. B. and Jennifer L. Gibbs. 2006. Unpacking the Concept of Virtuality: The Effects of Geographic Dispersion, Electronic Dependence, Dynamic Structure, and National Diversity on Team Innovation. <i>Administrative Science Quarterly</i> 51(3): 451-495. DOI: 10.2189/asqu.51.3.451.

# Literature



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10	Lindner, Dominic. 2020. <i>Virtuelle Teams und Homeoffice: Empfehlungen zu Technologien, Arbeitsmethoden und Führung</i> . Springer Gabler. ISBN: 978-3658308926.

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# Literature



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