THE ROLE OF DIGITALIZED VISUAL MANAGEMENT TO EMPOWER SELF-MANAGED CREWS IN CONSTRUCTION PROJECTS

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Research Purpose

• Investigate the current level of adoption of VM and how the digitalization of VM can empower self managed crews during the production phase in construction projects
Research Method

- Literature review about VM, Situational Awareness (SA), self-managed crews and the level of digitalization in construction projects
- Construction site visits in Finland, unstructured interviews with site and project managers
Main Findings

• Vision sense mediates 80%–85% of human perception, learning, cognition and activities (Ripley et al. 2010)

• VM to provide information in a visual manner that it can be retrieved at a glance(Greif 1991)

• SA is “the perception of elements in the environment within time and space, comprehending their meaning and the projection of their status in the near future” (Endsley 1995)
Main Findings

- Data collection about construction projects during the production phase is now more automated, with drones, positioning sensors, cameras and environment sensors.
Management Information
Production Workers
Information

Photos by the Author February/2020
Conclusions

• Digitalization have not reached construction crews
• The adoption of digitalized VM can enable decision-making based on updated information by construction workers
• It is necessary to shift from improvisation teams to self-managed teams
• Smart phone applications are an important tool to increase the information flow, nevertheless they require active information search and cannot be considered as VM devices
Possibilities for digitalization of VM

- the use of local digital screens closer to the production areas of construction projects
- use of augmented reality glasses, enabling the visualization of design details and plan status
- adoption of laser and virtual image projections, to compare progress and forecast interferences from different disciplines
Future Research

• Information requirements from construction workers
• Efficient and useable display of production phase information
• Comparison of results from the adoption of analogic VM tools against the adoption of digitalized VM
• Comparison of different digital VM tools, measuring the impact of their adoption
THANK YOU!

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