

LITERATURE EXAM CONSTRUCTION SUPPLY CHAIN AND DIGITIZATION (201800045)

Date: October 4, 2018

Time: 15.45-17.30

This exam consists of five open questions. Formulate your answers using the concepts and theories discussed during the course.

Success!

Question 1 CSC & Digitization: a portfolio approach (20 points: 2x10)

In *Buyer-supplier relationships in industrialized building* Bildsten develops a purchasing portfolio model for industrialized building, partly based on the concentric model of Dyer.

- a. How does Bildsten apply the concentric model of Dyer to buyer-supplier relationships in industrialized building?

In *Managing construction supply chains* Cox and Ireland state that the 'choice offered between adversalism and collaboration is too simplistic' (p. 413).

- b. What do Cox and Ireland mean with this statement? Provide an example using the *partnering* concept.

Question 2 CSC & Digitization: a system approach (20 points: 2x10)

In *Choice and delivery in housebuilding: lessons from Japan for UK house builders*, Barlow et al. discuss supply chain models combining standardization and customization.

- a. Barlow et al. discuss the so-called Supply chain strategy identification matrix. What are the major trade-off discussed in this matrix?

In *The changing logistical system of the building materials supply chain* the logistical problem of horizontal assembling versus vertical manufacturing for supply chains of prefabricated elements is discussed.

- b. Describe three basic solutions applied in the supply chain of prefabricated elements solving this logistical problem.

Question 3 CSC & Digitization: a governance approach (20 points: 2x10)

Several years ago, the competitive dialogue (CD) procedure was introduced. The CD procedure consists of several discussion rounds between the principal and potential suppliers, during which all aspects of a tender can be discussed. The CD procedure assists contracting authorities to procure complex projects in which technical specifications and price levels can be defined during the dialogue rather than being predetermined. The CD procedure aims to align complex demands of principals with possible solutions that contractors have to offer.

- a. When using the XYZ line of argument of Briscoe et al., in what way did environmental variables stimulate the use of the CD in the multiple case study *Formal and informal contracting processes in the competitive dialogue procedure?* of Hoezen et al.

In *Reducing opportunistic behavior through a project alliance* Laan et al. analyze how a project alliance reduced opportunistic behavior between client and contractor organizations in a large railway construction project.

- b. It is stated that *traditional* contracts commonly used in construction and *design-build* contracts do have the same problem. What is this problem?

Question 4 CSC & Digitization: a maturity approach (20 points: 2x10)

In *Developing and Testing a Tool to Evaluate BIM Maturity Development* Siebelink et al. developed a maturity assessment tool based on elements of the model of Silver et al. (1995)

- a. Describe a major characteristic of the Silver et al. model.

In *Assessing Maturity Development of Purchasing Management in Construction* a longitudinal multiple case study of seven construction firms is executed. The development of maturity in the purchasing function of construction firms is measured over a period of five years. In this article a theoretical framework is introduced including the six stages of development of the purchasing function of Van Weele.

- b. What could be the impact of BIM in terms of the six stages of development of the purchasing function of Van Weele?

Question 5 CSC & Digitization: a mediation approach (20 points: 2x10)

In *Building Information Modelling and its impact on users in the lifeworld - a mediation perspective* the impact of technology is critically analyzed by Heidegger using the concept of *Enframing* or *Gestell*.

- a. What is the major reason why BIM till now does not have the effect of *Enframing* on users of BIM?

In *Control, surveillance and the 'dark side' of BIM* Davies and Hardy analyze the impact of BIM from the *surveillance and control* perspective of Foucault.

- b. What is the major conclusion about the impact of BIM from this perspective?