Exam	Supply Chain Finance
Examiner	JH Jansen
Duration exam	120 minutes
Aids	Non-programmable calculator
	Pen (Only black or blue writing)
General remark	Show your line of reasoning and/or your calculations.

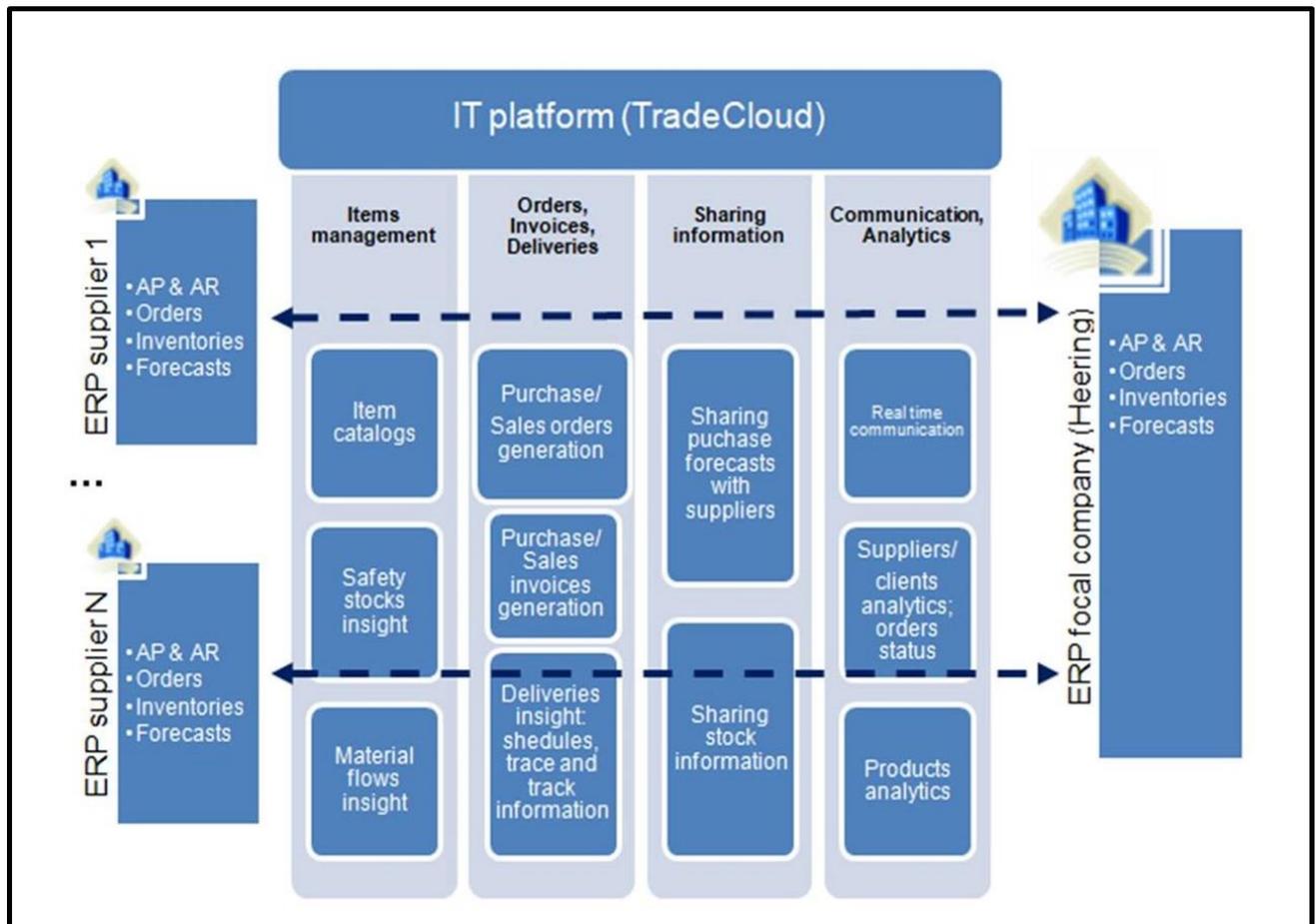**Case study Heering International / Tradecloud**

Figure 1Functionalities IT Platform TradeCloud

1. Explain as detailed as possible the functionalities of the IT Platform of TradeCloud (see figure 1) for the focal company Heering International in their supply chain. **(8 points)**

2. What is the added value <u>and</u> what are the risks for a focal company – like Heering - in the supply chain to use the IT-platform of TradeCloud. Provide <u>2</u> examples of added value <u>and</u> two risks for this focal company. Explain your choice! **(8 points)**
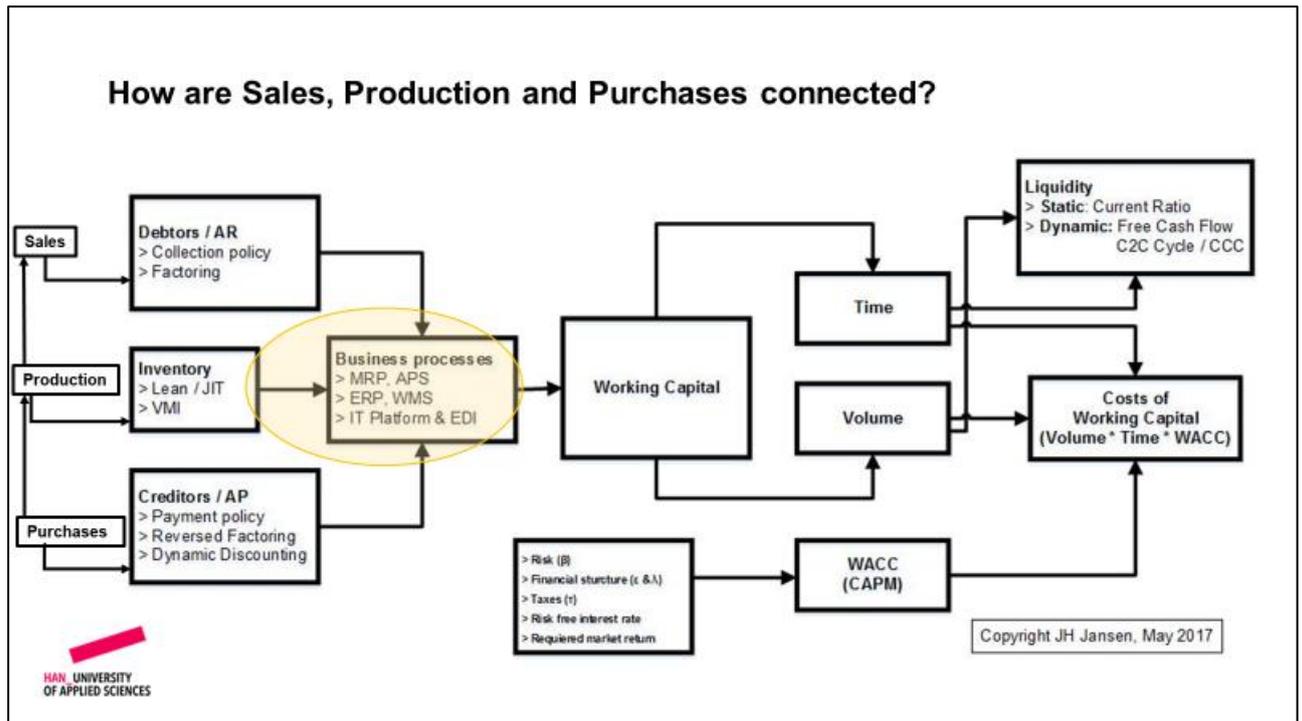
Figure 2 Conceptual Model SCF for SMEs[1]

3. Tradecloud is offering the services of a so-called non-financial IT Platform to Heering International. What is the added value of such a type of IT-platform compared to SCF IT platforms like Prime Revenue, Demica, ING etc. Explain your line of reasoning by using figure 2: Conceptual Model SCF for SMEs! **(8 points)**

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[1] SME: Small and Medium Sized Enterprises: Staff < 250 and Sales < € 50 million (or Total Assets < € 43 million) (Source: www.ec.europe.eu)

From the 2018 annual report of Ahold-Delhaize[2] the following data are retrieved:

	2018 (in millions of €)	2017 (in millions of €)
Net Sales	62,791	62,890
Cost of Sales	45,839	46,121
Net Profit (= NOPAT)	1,809	1,817
Equity	14,816	15,170
Total Assets	33,331	33,871
Inventories	3,196	3,077
Accounts Receivables	1,759	1,606
Accounts Payables	5,816	5,277
Current Liabilities	10,021	10,305
Current Assets	8,842	9,970

Source: Annual report Ahold-Delhaize 2019

4. Calculate the following sub-questions for 2017 <u>and</u> 2018 (show your calculations!):

    a. The decomposition of the Return on Equity (ROE) according the DuPont formula:
        i. Return on Equity (ROE) **(2 points)**
        ii. Net Profit Margin **(2 points)**
        iii. Total Asset Turnover **(2 points)**
        iv. Equity multiplier **(2 points)**
    b. Induced Net working capital (SCF definition). **(2 points)**
    c. Net working capital (Finance definition). **(2 points)**
    d. Day's sales in receivables (DSO). **(2 points)**
    e. Day's purchases in payables (DPO). **(2 points)**
    f. Inventory turnover period (DIO). **(2 points)**
    g. Cash to cash cycle. **(2 points)**
    h. Evaluate the Supply Chain Finance position of Ahold-Delhaize compared from 2018 to 2017. **(5 points)**

In the 2018 annual report of Unilever the following additional data were found:

Company Beta (β)	0.63
Risk free interest rate (R_{RF})	0.1%
Required market return shareholders (R_E)	6.0%
Corporate tax rate (τ)	21% or 0.21
Cost of debt (R_D)	2.5%

Sources: Annual report Ahold-Delhaize 2018 & www.reuters.com & additional calculations by the author of this exam

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[2] A large chain of supermarket stores originally from The Netherlands and Belgium, but now present all over Europe and the USA

5. Calculate the WACC <u>and</u> the EVA for Ahold-Delhaize for the year 2018. Show your calculations. **(6 points)**

6. Give a SCF interpretation of the calculated WACC and EVA in question 5. **(4 points)**

Distributed ledger technology (also known as Blockchain technology) will be an important new development in Supply Chain Management / Logistics in the near future.

7. Explain how distributed ledger technology can play an important role in implementing Supply Chain Finance in SMEs? **(8 points)**

8. A firm offers terms of 1.5/10, net 60 (Customers have 60 days to from the invoice date to pay the full amount; however, if payment within 10 days, a 1.5 per cent cash discount can be taken). What is the effective annual rate (EAR) of paying after 60 days <u>or</u> paying within 10 days? Show your both calculations. **(5 points)**

9. Mention <u>and</u> explain: one strategic supply chain finance instrument <u>or</u> one tactical supply chain finance instrument. **(4 points)**

10 Mention <u>and</u> explain one operational supply chain finance instrument. **(4 points)**

11**.** You participated in the Supply Chain Finance simulation: The Cool Connection.
   a. What was <u>your</u> job / role in the team?
   b. What was <u>your</u> learning experience of supply chain finance in terms of single loop learning according the Kolb learning cycle? **(12 points)**
   c. What was <u>your</u> learning experience of supply chain finance in terms of double loop learning / developing meta-cognitive competencies? **(8 points)**

The End of the Exam!