First Name	Last Name	Student ID number

Exam Information Management

18.01.2024

You have 90 minutes to work on the exam. You can achieve a maximum number of 90 points. Use the points for each task to indicate how long you should work on it (i.e., each point equals one minute).

Please, do not use additional sheets of paper you brought along yourself. If you need more, official paper will be provided.

Write your solutions in the indicated fields or directly into the diagrams and tables.

Put your name on the cover page and your student ID number on each of the following pages.

Answer all exam questions either in English or German and stick to the chosen language throughout the exam.

Indicate clearly, if you need to make assumptions.

Good luck!

task	1	2	3	4	5	6	Σ	grade
maximum	15	16	14	19	18	8	**90**	
achieved								

First Name	Last Name	Student ID number

Question 1: Digital Strategy & Business Models (15 Points)

In the bustling heart of Silicon Valley, whispers of Amazon's latest venture began to stir. Tech bloggers, industry insiders, and curious consumers alike were abuzz with a tantalizing possibility - Amazon, the retail giant, was eyeing the telecommunications market. The rumor? A groundbreaking, low-cost cell phone service exclusively for Prime members. Inside Amazon's headquarters, a secret team, codenamed "Program PrimeWave", was negotiating with the titans of telecom - AT&T, T-Mobile, Verizon, and Dish. Their mission was bold: to secure low wholesale prices, disrupting the market. Their target price point? An unprecedented $10 for Prime members.

As negotiations with the major carriers hit a wall of denial, Amazon found an unexpected ally in Dish Network. A strategic partnership was formed, setting the stage for a seismic shift in the telecom industry. This alliance should be a game-changer, poised to challenge the status quo and ignite a price war. News of the Amazon-Dish partnership sent shockwaves through Wall Street. In this alliance, Dish should provide its latest and state of the art mobile network infrastructure, whereas Amazon brings it knowledge in large scale IT operations and a huge customer base to the table. Shares of established telecom giants trembled as traders and analysts pondered the implications. The thought of Amazon, with its vast resources and customer base, entering their turf was both thrilling and terrifying.

However, as internal documents show, Amazon has still not decided on a sound business model for program 'PrimeWave' and has requested help from external consultants. Only one this is certain: once PrimeWave is up and running, it should become an own subsidary under the holding of Amazon. Because of your experience in the telco-industry, you were assigned to this mandate and are now asked to work on PrimeWave's digital strategy and business model for entering the telco market.

Digital Strategy

a. What kind of strategy does Amazon follow with this kind of **competitive move**? **Describe** and **provide rationale** (i.e., examples) based on your previous experience from the homework to support your answer.

   (**3 Points**)

Solution for Question 1.a):

Business Model Canvas

As part of your consulting mandate, you are asked to develop the <u>future business model</u> of 'PrimeWave' by using the <u>Business Model Canvas</u>. You have to complement and describe the canvas, which you can find on the following page. Hence, your job is to

b. First, correctly <u>name the missing elements</u> of the canvas by filling in the blanks.
   (**3 Points**)

c. Second, develop the business model by <u>filling out the nine components</u> of the canvas with <u>bullet points</u>. If you make assumptions, please make sure to describe these reasons as well.
   (**9 Points**)

Customer Segments

Customer Relationships

Value Propositions

If you have additional remarks to Question 1.c) write them here:

Question 2: IT Outsourcing (16 Points)

An important piece of every telco provider's infrastructure is the backend software to manage virtual network operations. On the one hand, this software ensures that customers can be identified and access the network. On the other hand, it streamlines billing and contract management. Typically, smaller mobile virtual network operators (MVNOs) buy a standardized product. However, given that PrimeWave has access to Amazon's large customer base and a highly skilled IT staff, questions arise whether this software should be built in-house or outsourced.

a. Before making a final decision, lay out at least **two benefits** and **two risks** that 'PrimeWave' may face when outsourcing the development of the network operating software. **Describe** and **provide** your rationale.
   (**4 Points**)

Solution for Question 2.a):

b. After a heated debate with the project manager of 'PrimeWave', the decision was made to follow a **Co-sourcing strategy**. **Describe** the Co-sourcing strategy with the given case and **compare** it against **another** outsourcing strategy of your choice. (**4 Points**)

Solution for Question 2.b):

c. Based on your experience with failed outsourcing projects, you are rather in favor of keeping the development of the network operation software in-house. **Explain when** and **why** PrimeWave should keep the development of the network operation software in-house based on the **Transaction-Cost** and **Principal-Agent theory**? In your explanation, **describe both theories** and **provide rationale** based on the given case.
(**8 Points**)

Solution for Question 2.c):
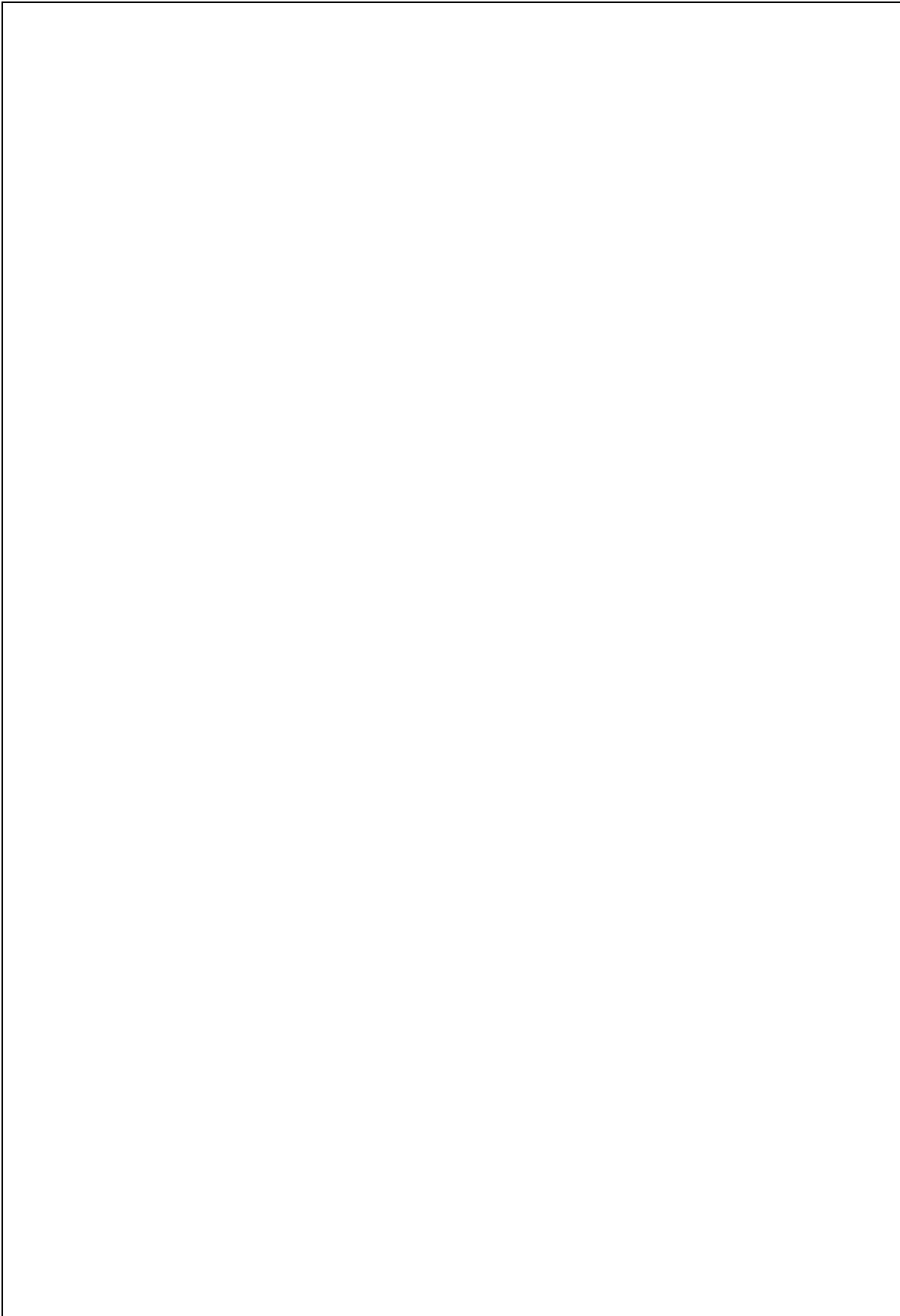
Question 3: Application Portfolio (14 Points)

Program PrimeWave is currently building up the application landscape. You have heard about the Ward & Peppard Application portfolio. It is a 2x2 Matrix with four dimensions that enables to maps applications according to their importance to current business and their importance to future business.

a. First, **name** and **briefly explain** the dimensions and elements of the Ward & Peppard Application Portfolio. You may also draw a diagram to support your explanation.
(**4 Points**)

Solution for Question 3.a):

b. In order to allocate budget and resources, it is now your task to prioritize the projects accordingly in the Application Portfolio. Give a short reasoning for your choice.
(**10 Points**)

Projects of Program PrimeWave:

I) *SAP Service Cloud:* The SAP Service Cloud is intended to revolutionize PrimeWave's customer service management by creating meaningful connections throughout the entire customer journey. Therein, it should combine existing customer data collected on Amazon, data from other internet sources (e.g., Social Media), and usage data of PrimeWave's services to create a holistic customer picture. The SAP Service Cloud should thus enable PrimeWave to better market their services, develop new solutions, and solve customer issues.

II) *Jira Service Management:* Jira Service Management is used by PrimeWave to bring IT, development, operations and business teams closer together with a variety of features that emphasize collaboration. It encompasses service management practices across service request, incident, problem, change, knowledge, asset, and configuration management. Currently, Jira Service Management is already used by PrimeWave's IT organization to solve day to day issues and problems. Once the first customers will start using their services, Jira Service Management will play a critical role to ensure smooth operations.

III) *PrimeWave Grow:* Working with top talent is crucial for the tech-savvy business of PrimeWave. Besides increasing their efforts in recruiting new employees, PrimeWave is eager to train and develop their existing staff. PrimeWave Grow will be the platform to create individual training and long-term growth plans for the employees. Using a wide array of employee data, personal skill profiles are created, which are the foundation of the training programs. The training itself is accompanied by an AI-based Digital Trainer, called Primo, which instructs and teaches the staff.

IV) *PrimeWave Green:* Streaming and online services consume a lot of energy. However, many users are not aware of this issue. To raise awareness among customers and to tap into a new niche of environmental-cautious clients, PrimeWave plans to develop an application that dynamically illustrates how much energy the current data services are consuming, how much renewable energy is used to power these services and provides suggestions for sustainable usage behavior.

V) *Oracle HR Management Suite*: Currently, all employees who are sourced on program PrimeWave are employed by Amazon. However, once the services are up and running, all staff will be moved to the new organization. Management of human resources matters, including recruiting and payment of salaries, should be handled via the Oracle HR Management Suite.

Solution for Question 3.b):

Question 4: Architectures (19 Points)

Despite an overlap with Amazon's core business, program PrimeWave is run as an own entity within Amazon with its own IT department, IT infrastructure and responsibilities. The current structures of the IT department and IT architecture have evolved alongside the development of program PrimeWave without clear definition. At the beginning of program PrimeWave this seemed adequate, but now the IT architecture lacks a clear structure and definition.

As part of your mandate, you are assigned to the development of PrimeWave's new IT architecture.

a. To illustrate your ideas in the next board meeting, you want to present the different steps of the TOGAF architectural development cycle. For this **assign the names** of the missing steps of the TOGAF architectural development cycle by correctly **filling the numbers** in the below table.
    (**3 Points**)
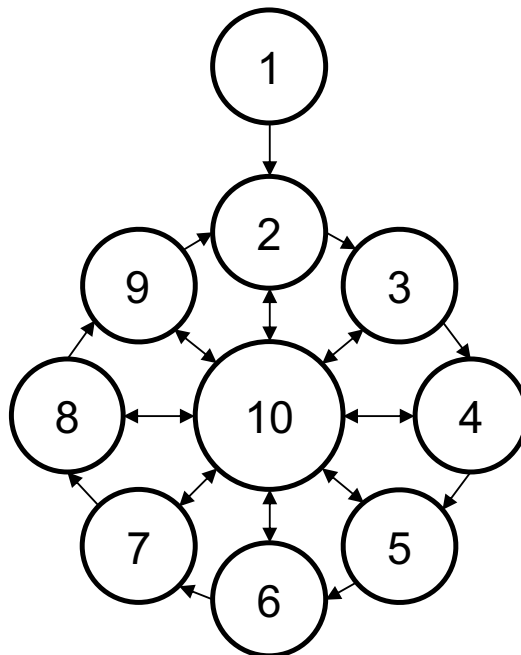
2	Architecture Vision			Business Architecture
	Information Systems Architecture			Framework and Principles
10	Requirements Management	5		Technology Architecture
	Architecture Change Management			Opportunities and Solutions
	Migration Planning	8		Implementation Governance

b. Some weeks ago, Mathew Brown, the head of IT of PrimeWave, already tried to redefine the IT architecture. However, Mr. Brown faced various problems as he pointed out in an E-Mail to you. In this E-Mail, which you can find in the **appendix**, he explains his attempt and asks for your advice.

Read the E-Mail of Mr. Brown carefully and **assign** the problems of Mr. Brown to all relevant steps of the TOGAF architectural development cycle. Additionally, briefly **describe** each identified step. Then, **propose** and **describe specific actions** based on the TOGAF architectural development cycle and the description of the case study.
(**16 Points**)

Solution for Question 4.b):

Question 5: Agile IT (18 Points)

From the start, the PrimeWave team, a blend of more than 160 seasoned developers, project managers, and telecom experts, was clear about one thing - they needed a robust, agile IT framework to bring this project to fruition. The team heard about multiple agile development approaches and is unsure about the best way forward.

a. As an expert in the field, explain to the client the two agile development approaches – SCRUM and the SAFe 6.0 framework. Briefly **explain both frameworks** and **describe at least two differences**.
   (**4 Points**)

Solution for Question 5.a):

b. Which of the two frameworks, SCRUM or SAFe 6.0 is better suited for program PrimeWave? **Provide** two reasons and **explain** your rationale carefully.
(**2 Points**)

Solution for Question 5.b):

Based on your insights, the team chose the SAFe 6 framework. However, the PrimeWave team still does not know how to implement SAFe 6 and asks for your guidance.

c. Following SAFe 6.0, **describe** how PrimeWave should implement the **team structure** and the **product delivery approach**. Provide your rationale for your suggestions **by always referring back** to the given case.
(**12 Points**)

Solution for Question 5.c):

Question 6: Algorithmic Management (8 Points)

One big advantage of setting up program 'PrimeWave' as a separate entitiy is the ability to use modern management practices with a low hierarchy and fast decision processes. To reduce the burden of managing and advising the workforce, the directors of the parent company Amazon suggests implementing an algorithmic management system. Apparently, the parent company uses such a system already in the warehouse and logistics of their core business and made good experiences with it.

To guide the processing of setting up such a system, you are asked for your guidance!

Based on **Kellogg's framework for reshaping organizational control**, describe at least **four control mechanisms** that an algorithmic management system for program 'PrimeWave' might implement. In your description, briefly **explain** each control mechanism and **refer always** to the given case of program 'PrimeWave'. (**8 Points**)

Solution for Question 6):

Appendix

(required for Question 4)

E-Mail of Mathew Brown

From: mt.brown@primewave.com

Subject: PrimeWave – previous efforts to develop IT architecture

Dear all,

I'm reaching out to share the experiences and problems we've encountered in redefining the IT architecture for program PrimeWave.

Initially, we believed that adopting Amazon's existing business framework for the telecom sector, and thus leveraging its operational efficiencies is feasible. However, merging Amazon's business processes with PrimeWave's telecom-specific requirements presented some interesting challenges. For example, aligning sales processes with telecom-specific dynamics required a deeper dive than initially anticipated. While members of Amazon Prime do not require a verification of their identity for regular services (e.g., purchasing goods on Amazon or streaming services), mobile network customers must be verified and are subject to country- and state-specific regulations. In our initial approach, we did not fully embrace the unique processes of the telecommunications industry.

To expedite our project timelines, I was keen on selecting our technology stack early to kickstart the development phase and to standardize it as much as possible. However, this approach led to misaligned technology choices as encountered later in the project. For instance, by prematurely focusing on a CRM system that could easily integrate with Amazon's existing infrastructure and data stores, we missed catering to new telecom services like the transfer of telephone numbers from other providers. Also, we later realized that selecting the technology stack too early prevented us from leveraging all available data of our Prime customers to streamline services.

Keeping up with changing stakeholder needs has been a continuous effort. We've noticed shifts in user preferences that have prompted us to revisit our strategies more frequently than initially anticipated. Additionally, we struggled to adapt to evolving business and technological landscapes. Our initial and clearly defined approach to implementing the IT architecture did not account for such changes. For instance, the establishment of new technologies, including the trend to rely on E-SIM or the demand for 5G, midway through our project presented big challenges to the development of our solutions. Additionally, the reliance on standard protocols to handle future changes just as they arrive seemed too inefficient and reactive in the dynamic nature of the technology and market trends.

I eagerly await your feedback and suggestions to enhance this plan.

Warm regards,

Mathew Brown