

<b>First Name</b>	<b>Last Name</b>	<b>Student ID number</b>

# Exam Information Management

19.01.2023

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.

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!

<b>task</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b><math>\Sigma</math></b>	<b>grade</b>
<b>maximum</b>	21	18	12	16	9	14	<b>90</b>	
<b>achieved</b>								

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### Question 1: Business Models (21 Points)

Social media has changed how the world communicates. Twitter is no exception in this regard. Twitter remains one of the most famous social media sites in the world and continues to grow at an accelerated pace. Twitter is a microblogging and social networking service that allows users to post and interact with “tweets” messages. It was created by Jack Dorsey, Noah Glass, Biz Stone, and Evan Williams and launched in July of 2006. Twitter, Inc. is based in San Francisco, California and has more than 25 offices around the world.

Twitter has millions of active users. It provides its users around the world connectivity and communication at their convenience. It allows people from all over the world to interact with each other and share everything, such as thoughts, news, daily life, etc. The usage of Twitter could be for personal, business, and research purposes. Users interact on Twitter through browser or mobile frontend software, or programmatically via its APIs. Twitter’s website and apps make for a direct communication line with its customers. It is a platform that aids them in understanding its entire mechanism through the guidelines it provides. Twitter basically operates as a self-taught platform.










On October 27, 2022, the Twitter board of directors agreed to a \$44 billion buyout by Elon Musk. After Musk’s acquisition, Twitter wants to ensure they are making the best use of social media technologies, which will guide them for further enhancement needed to support its business. Therefore, it is necessary to understand Twitter’s current business model.

#### Business Model Canvas

As part of your consulting mandate, you are asked to analyze the current business model of Twitter by using the Business Model Canvas. You have to complement and describe the canvas, which you can find on the following page. Hence, your job is to

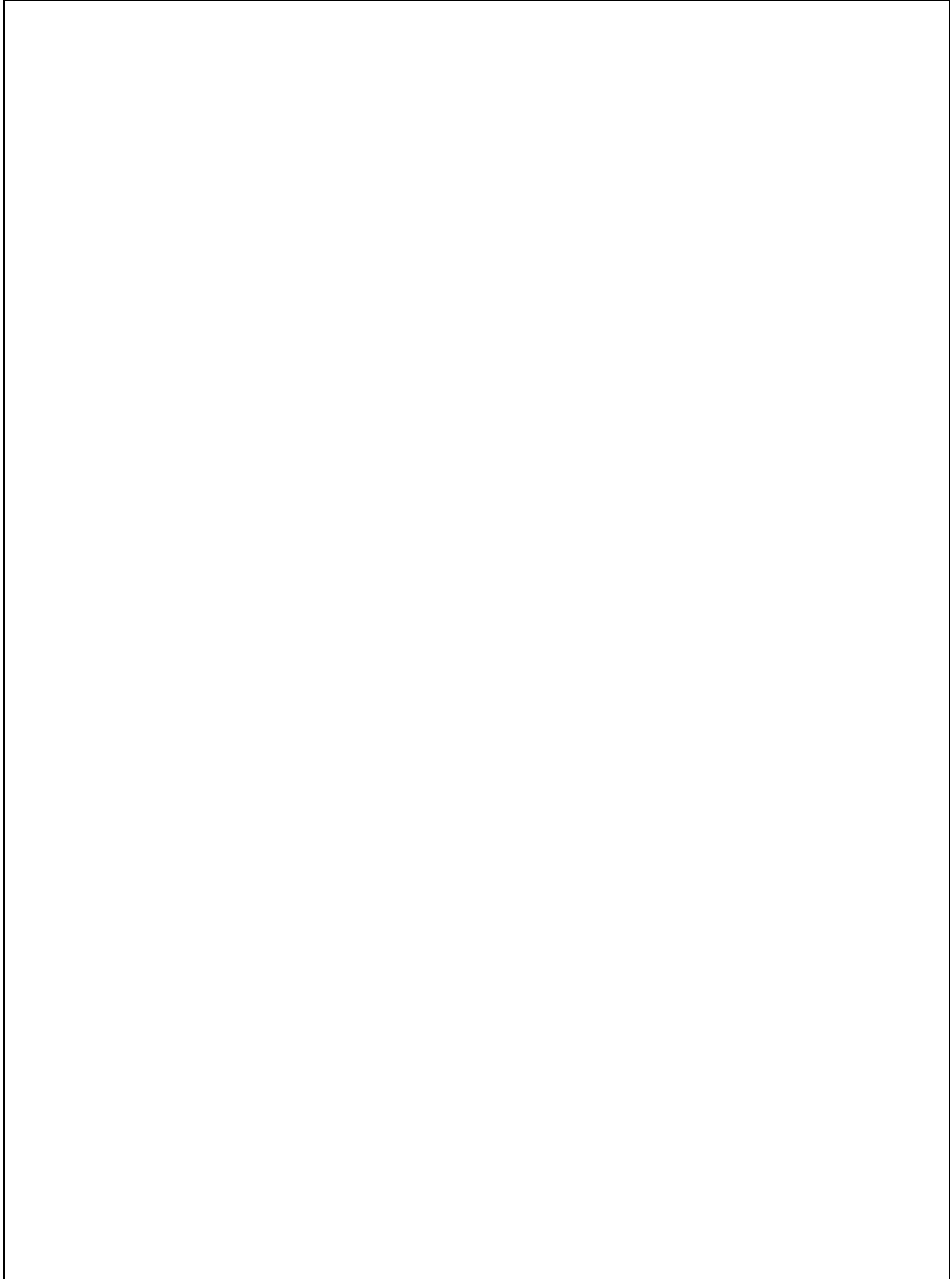
- A) First, correctly name the missing elements of the canvas by filling in the blanks.  
**(3 Points)**
  
- B) Second, fill out the missing components of each element of the canvas with three bullet points and separately provide explanations for your rationale for each bullet point. If you make assumptions, please make sure to describe them as well.  
**(18 Points)**

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<p> Key Partners</p> <ul style="list-style-type: none"><li>• User's platform</li><li>• Media companies (TV shows, movies, music, news articles)</li><li>• Content partners</li><li>• Mobile operators</li><li>• Device vendors</li><li>• Developers</li></ul>	<p><b>1)</b> <input type="text"/></p> <p></p>	<p><b>2)</b> <input type="text"/></p> <p></p>	<p>Customer Relationships </p> <ul style="list-style-type: none"><li>• Personalized engage</li><li>• Self-service</li><li>• Automation</li><li>• Community building</li><li>• Co-creation</li></ul>	<p>Customer Segments </p> <ul style="list-style-type: none"><li>• Users</li><li>• Enterprises, Advertisers &amp; marketers</li><li>• Agencies</li><li>• Developers</li><li>• Researchers</li></ul>
<p><b>3)</b> <input type="text"/></p> <p></p>	<p><b>4)</b> <input type="text"/></p> <p></p>	<p><b>5)</b> <input type="text"/></p> <p></p>	<p><b>6)</b> <input type="text"/></p> <p></p>	

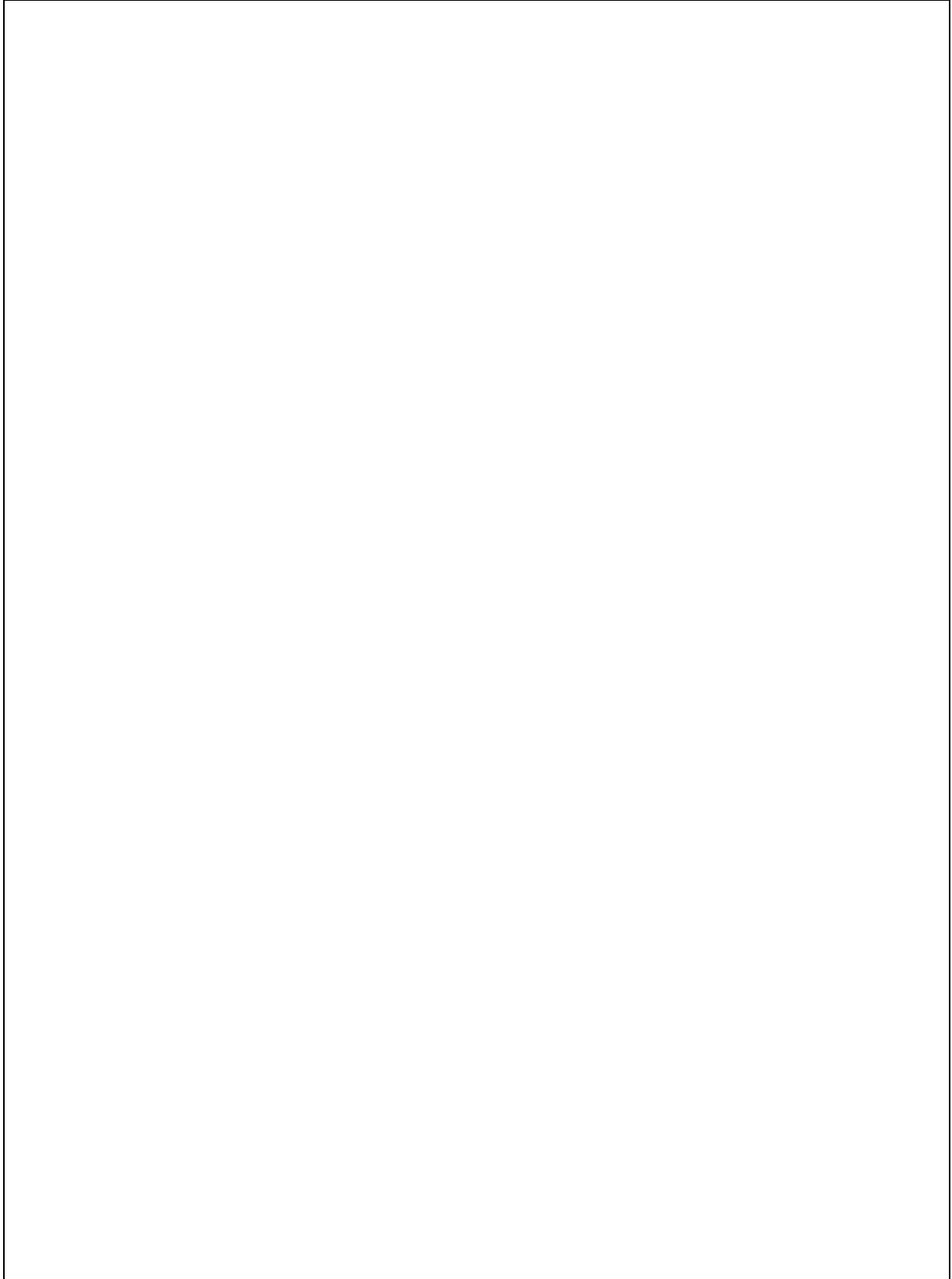
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Solution for Question 1.B):



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Solution for Question 1.B):



## Question 2: IT Governance and IT Service Management (18 Points)

Since the COVID pandemic, Twitter has provided its employees the option of working remotely or coming into an office, if they'd prefer that choice. However, with the takeover of the new CEO, Twitter also announced that all employees need to return to the office immediately. Soon after, many employees complained about long latency issues with business applications that tremendously affect their daily business and productivity. In your analysis of Twitter's current processes, you stumbled across a message that a frustrated developer wrote to Twitter's IT service desk.

*"Dear all,*

*Ever since the announcement to return to the office last week, the productivity of me and my teams has fallen drastically. In our team, we constantly need to push and pull high amounts of code to our GitLab repositories. Additionally, we need to access resources from our storage systems, like the central Hadoop or SQL clusters. However, these days, the high latency has come to the point where we simply cannot work anymore. Therefore, we tried to contact our internal IT service desk multiple times this week to solve the issue.*

*After almost 30 minutes in the waiting line on Monday, I finally got directed to a first-level support service agent. The agent asked me about my account number, the computer configurations, the IT services I am using, and he asked me for screenshots to better understand the problem. After a thorough explanation, the service advisor made three solution suggestions: restarting my computer, updating the operating system, or trying a different Wi-Fi network while being in the office. However, none of them worked. The service agent assumed that the problem might come from server and storage issues, thus, helplessly he suggested me to contact the data center services department. The data center services department is also part of the IT department; however, they are specialized in our data center services, like data center networking, storage, and server infrastructure.*

*Then, I immediately tried to call the number that I just had received from the service agent to ask the department for data center services for help with our latency issues. Unfortunately, only the answering machine replays and told me that the department is only open Wednesdays and Fridays. This was very frustrating as we had to finish important work until Thursday. It seems that there is nothing else to be done than hoping that the latency issues will disappear. However, they did not disappear. Instead, they made it impossible to run important tests before Wednesday.*

*On Wednesday, I tried to contact the data center services again. Luckily, they instantaneously picked up the phone in the morning. Unfortunately, they were also not able to solve the issue. I got a bit angry since the employer from data center services asked me exactly the same questions as the service advisee did. However, at least he seemed to be a bit more competent and made a few tests with our virtual servers and storage systems. He also checked the data center network for any issues, but all these tests turned out negative (meaning that everything is ok with the data center infrastructure). Instead, he suggested me to contact the guys from networking services. Thus, he transferred my call to the networking team, which is also part of*

*Twitter's IT department. Again, the employee asked me the same general questions the other two departments did before. The service employee from the networking services department checked the Wi-Fi and wired LAN settings on my computer and ran an application called Wireshark to monitor networking traffic. Soon, he found out that the latency issues appear due to high bandwidth usage of the office network. Apparently, the networking department scaled down the office network when Twitter sent its employees into remote work and has not increased the networking capacity ever since. He promised me that these issues will be fixed soon; however, we are still facing severe difficulties with the networking.*

- A) Identify the organizational structure that Twitter's IT department is currently following. What are the underlying reasons for the problems and the employee's experience? Describe and explain the organizational structure and at least three related reasons underlying the current problems. **(8 Points)**
- B) What organizational development according to would you recommend to Twitter's IT in order to improve the above-mentioned service process for its employees? **(4 Points)**

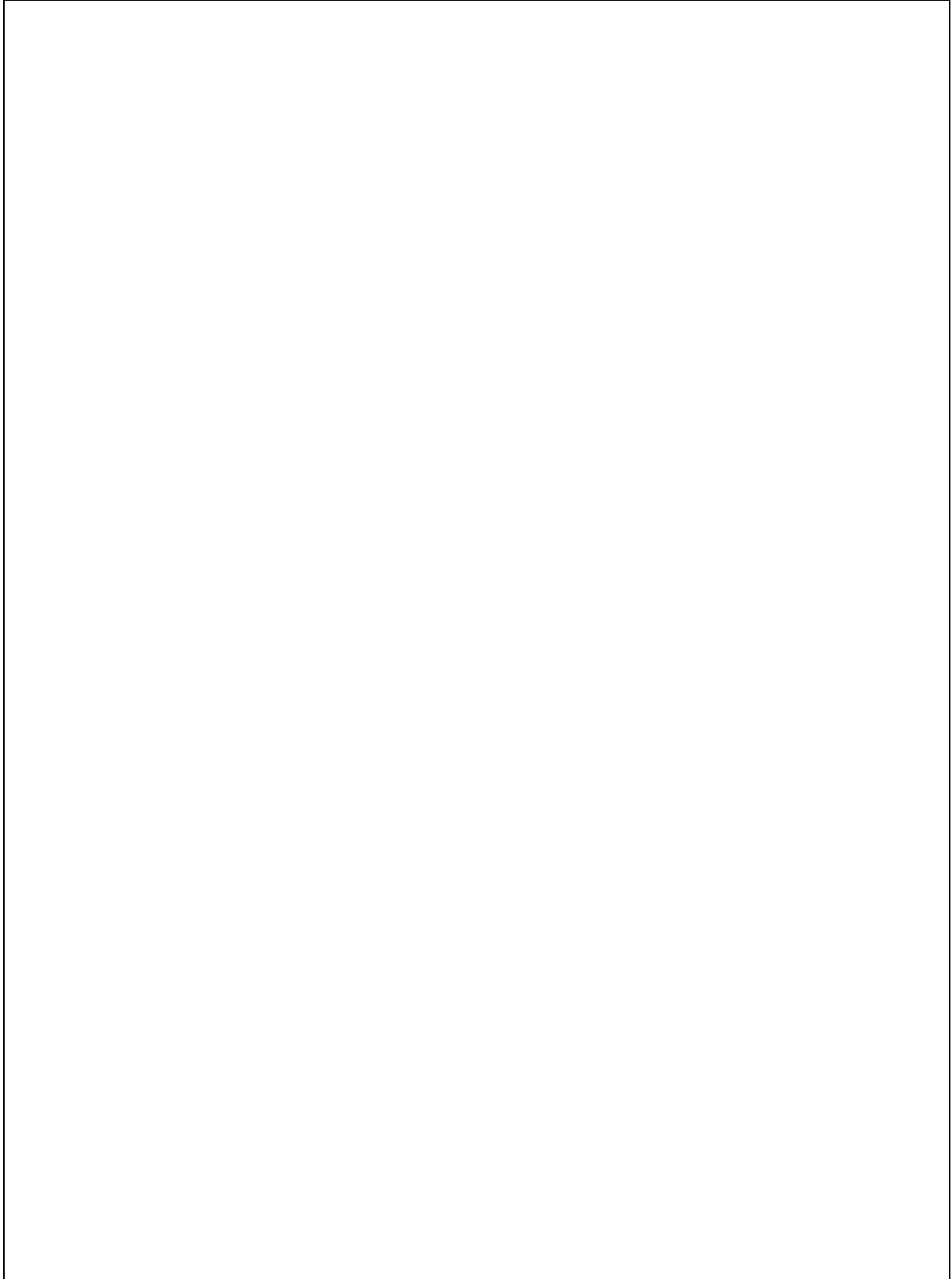
Besides recommending changes for organizing the IT function, you also discover insufficient IT Service Management processes, in particular concerning the service desk. According to the described situation, what changes to the service desk processes must be implemented to enhance incident and problem management?

- C) First, explain and differentiate incident and problem management according to ITIL. Then, propose at least two improvements to the activities of incident and problem management based on the reported issues of the developer. **(6 Points)**



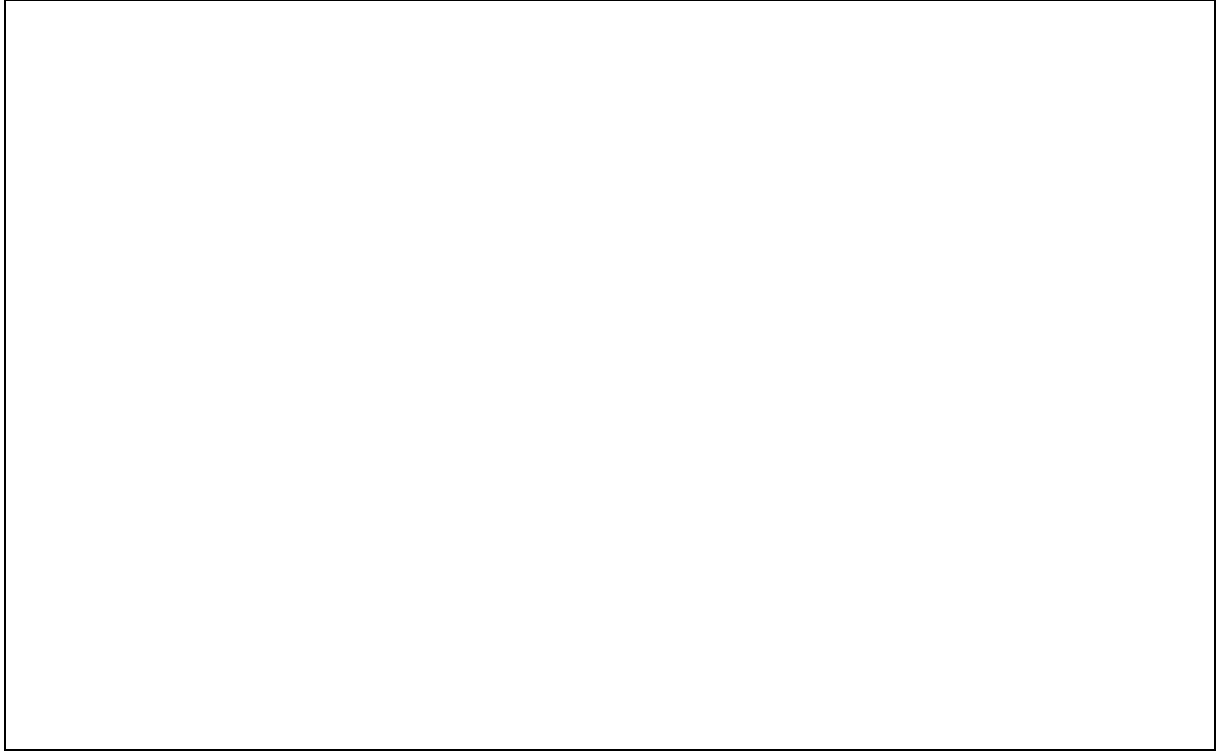
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Solution for Question 2.A):



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Solution for Question 2.B):



Solution for Question 2.C):



### Question 3: Digital Organizations (12 Points)

Mark Baumann is the CIO of Twitter. He's been with the company since its foundation in 2006 and has managed Twitter's IT department ever since. Because of his long tenure, Mr. Baumann believes in knowing Twitter's business and needs in detail, and thus, manages the IT department like his own company. Basically, almost all critical decisions for investing in new infrastructure or applications need his involvement and approval. His most important success measures include the up- and downtime of IT infrastructure and applications, the respective recovery time to restore services in case of failure, and the costs of IT projects. Mr. Baumann has put much effort into building a professional and highly skilled IT department that possesses crucial knowledge about Twitter's IT infrastructure and applications. Therein, the IT department is overseen by multiple management layers and separate teams (e.g., data center team, network team, office application team, etc.). He is proud of the three data centers in Atlanta, Portland, and Sacramento, which not only host the most important business applications but are also responsible for running the social media platform. Despite his efforts to keep IT within the IT department, he has recently recognized the growth of "shadow IT" in the business units as employees began using their own applications, like Notion or Slack. However, he is not really concerned about this development as it does not interfere with the IT department's operations. Generally, the only touchpoints with other business units occur when employees face technical issues or when new applications or infrastructure are required by the business. For the latter, the IT department budgets its IT projects and expenses on a yearly basis, which requires the business units to put in a proposal for funding in September or October to be able to get on the IT department's calendar for the following year.

Like other business units, the IT department will also be affected by the changes proposed by the new CEO. Only recently, Mr. Baumann was told about drastic cuts in his team's headcount while being asked to be more agile and responsive to changing business needs. Therefore, the CIO asks for your advice for making the IT department future-proof. You read an article by Joe Peppard about the **evolution of the IT department** and remember the quote of Microsoft's CDO, Andrew Wilson, foretelling that the **IT department will disappear over the next five years**. Based on this insight, you draft a proposal for Mr. Baumann that includes significant changes to his IT department.

In your proposal, ...

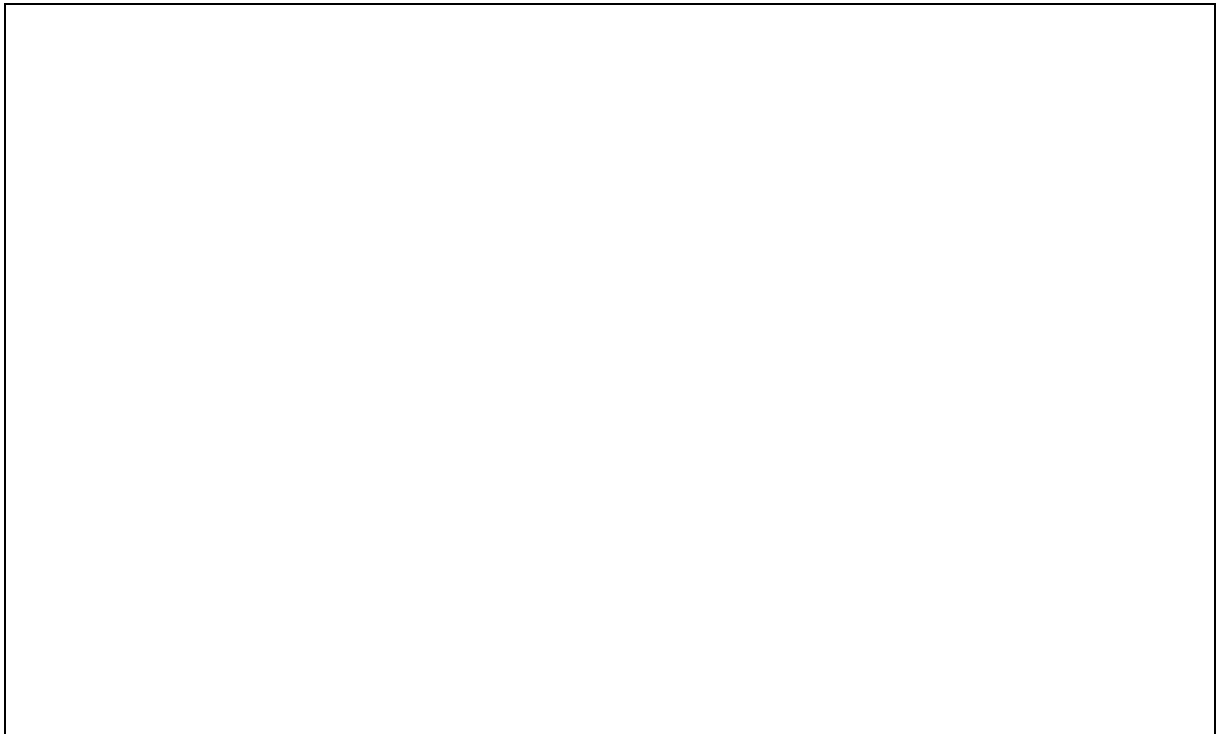
- A) First, describe the current model of Twitter's IT department according to the core ideas of Joe Peppard's "**IT department evolution phases**". By describing its objectives and function, discuss why the current model of Twitter's IT department is outdated. (4 Points)
- B) Second, propose a new model for Twitter's IT department according to the core ideas of Joe Peppard's "**IT department evolution phases**" and highlight potential positive and/or negative impacts on Twitter. In your discussion, explain the objectives and function of the new model and discuss how the role of the CIO will change in the future. (8 Points)

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Solution for Question 3.A):



Solution for Question 3.B):



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#### Question 4: Application Portfolio (16 Points)

To make its IT operations leaner and focus more on its core activities, Twitter is thinking about discontinuing some of its applications or outsourcing them to external service providers. On the other side, the new CEO is anxious to invest heavily in new applications and IT projects that promise to make Twitter future-proof and stay innovative. Therefore, you are asked to analyze existing applications and applications that are currently in development to make a better-informed decision on which applications Twitter should continue and discontinue using, should outsource, or should invest more heavily in. After a thorough analysis and interviews with employees from the business and IT organization, you uncovered the following applications:

- **GitLab (on-premise installation):** GitLab is the primary development platform for Twitter's developers and ensures version control, issue tracking and code reviews. Every developer is obliged to use GitLab on a daily basis.
- **SalesForce (on-premise installation):** SalesForce is used by Twitter's sales, customer service and marketing personnel to manage customer relationships with business customers and organizations. Managing these customers is a critical success factor for Twitter as their advertising expenses contribute heavily to Twitter's overall revenue. In the future, SalesForce is expected to play an even bigger role when Twitter will implement its plans to offer paid accounts.
- **Slack (cloud-based service):** Slack is the number one collaboration tool for Twitter employees. They use slack on a daily basis to communicate via text and video with their colleagues around the globe.
- **Notion (cloud-based service):** Notion is an all-in-one workspace for notetaking, knowledge and data management, and project and task management. Twitter employees rely on Notion to plan, document, and monitor projects and ongoing tasks. Therein, it is Twitter's primary platform for managing knowledge.
- **AI-driven management platform:** Twitter plans to develop a new AI-driven management platform to automatically monitor, track, schedule, and evaluate its employees. This platform should help to increase overall productivity and to improve managerial processes.
- **Metaverse application:** In order to take advantage of the growing metaverse trend, Twitter currently invests heavily in developing its own metaverse application. By partnering with companies like Nvidia or OpenAI, Twitter plans to combine virtual reality and advanced AI-driven avatars to create an immersive metaverse application for its users.

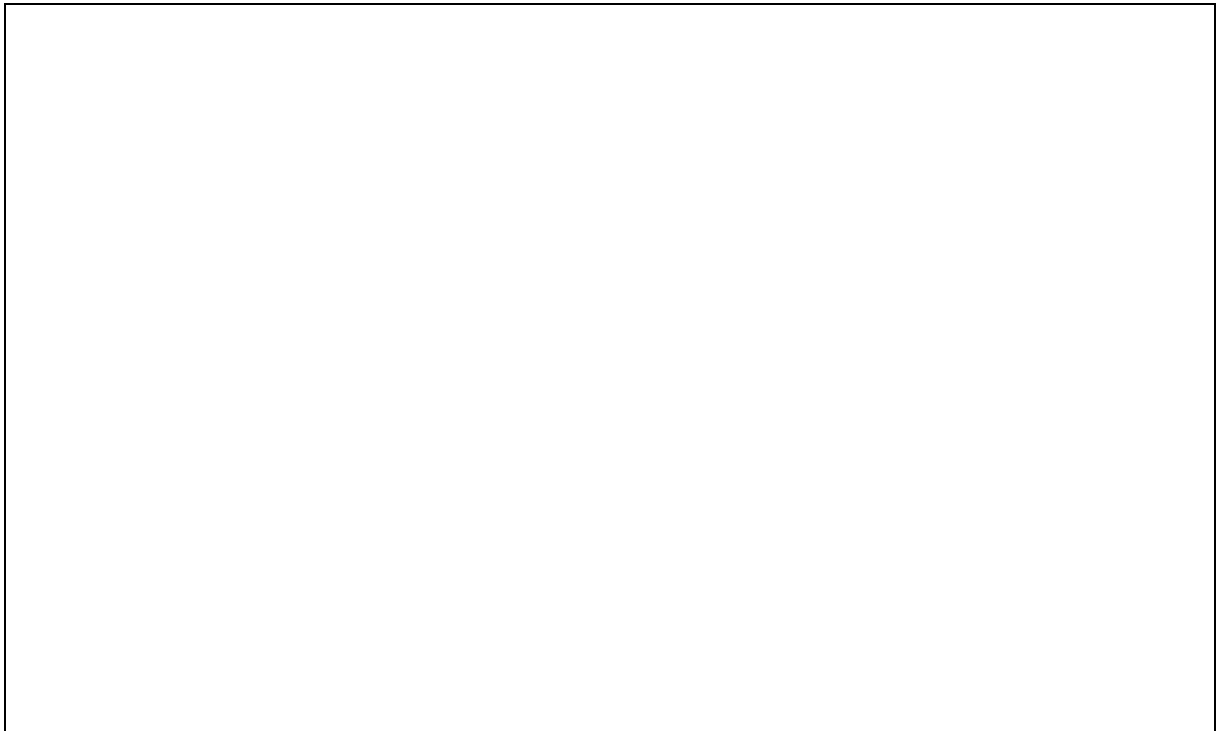
Use the **Ward & Peppard Application portfolio** to classify these applications. First, name and explain the dimensions of the Ward & Peppard Application portfolio. Secondly, describe how you would classify the applications accordingly. **(16 Points)**

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Solution for Question 4.A):



Solution for Question 4.B):





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### Question 5: Algorithmic Management (9 Points)

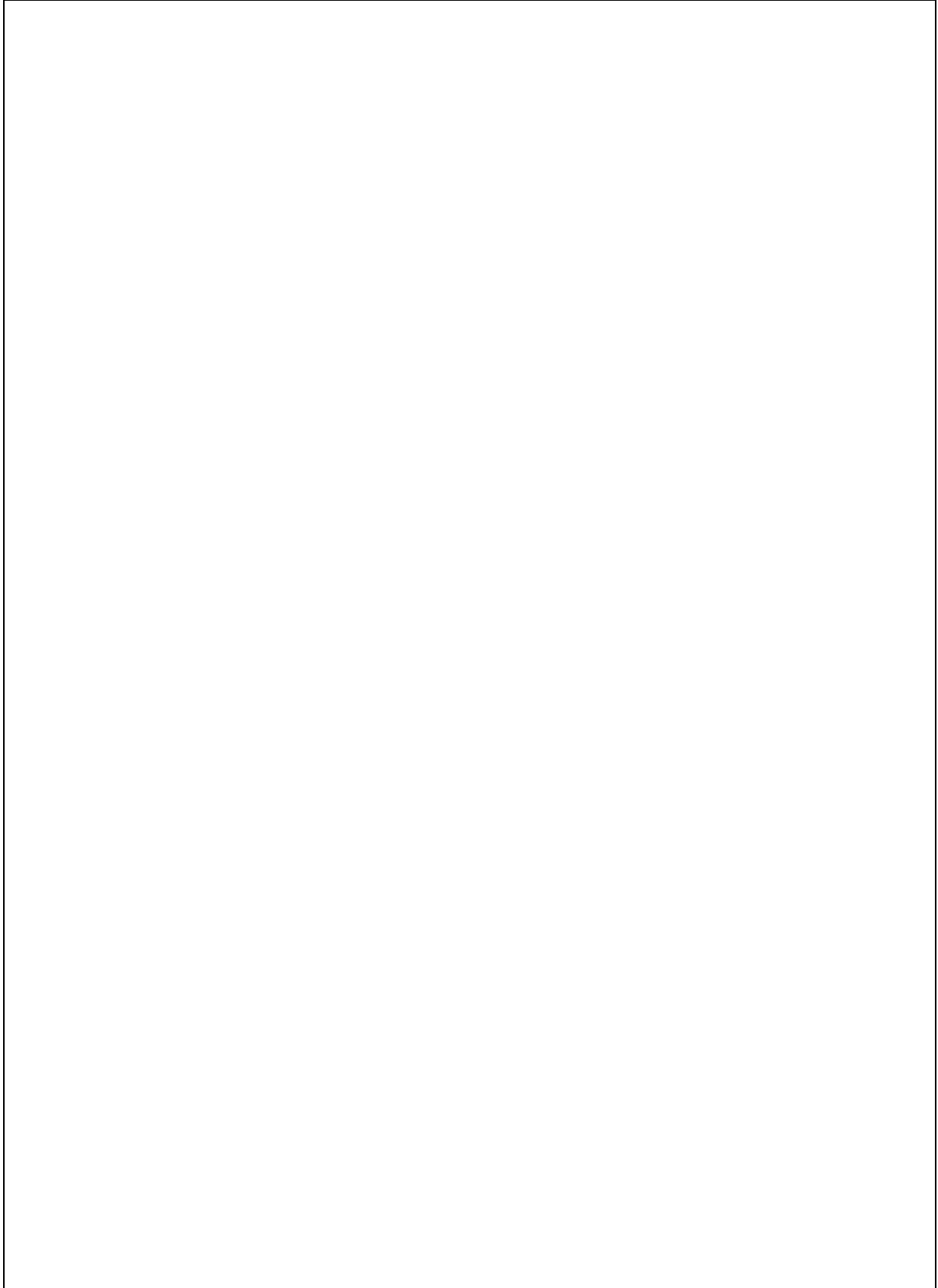
One of the effects of restructuring the organization and cutting a large portion of the workforce, especially in the lower and middle management, is that the remaining managers are sharing an increasing burden of managing and advising the workforce. Therefore, the new CEO has announced his plans to implement an AI-driven algorithmic management system to support managers in overseeing the employees. However, Twitter lacks experience in developing and implementing such systems. Therefore, your experience from previous consulting jobs at Uber and Upwork is highly needed to successfully manage such a project.

In particular, the new CEO asks for your professional input to develop such a system. He asks you to **propose a system** that adopts **the functions of algorithmic management practices** commonly found on Digital Labor platforms and **explain how their positive and negative effects can affect Twitter's future operations**.

In an E-mail to the CEO, you propose an idea for an algorithmic management system for Twitter. Describe the system by referring to at least three functions of algorithmic management practices that Twitter can adopt from Digital Labor platforms. In your descriptions, provide examples of how these changes can be implemented in the context of Twitter and what positive and negative consequences can be expected. (9 Points)

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Solution for Question 5):

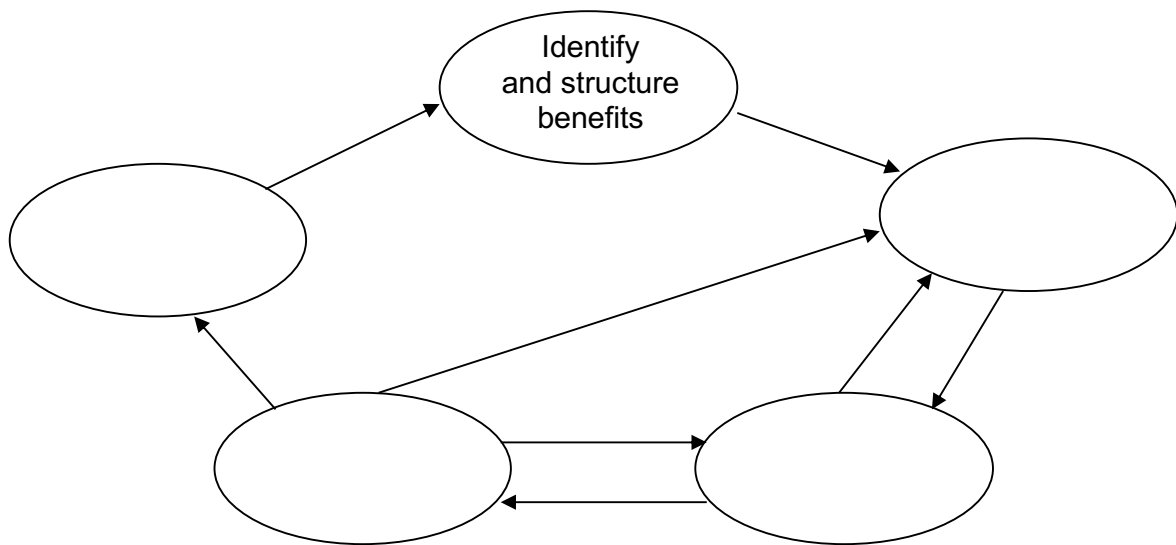


### Question 6: Benefits Management (14 Points)

To create and manage sustainable benefits from the development and integration of the new algorithmic management platform, you advise Twitter to early establish Benefits Management processes. This should help Twitter to actually realize the potential benefits of the future algorithmic management platform. From your experience with other IT projects, you know that companies often fail in developing such structures. Therefore, you propose a benefits management approach, which you read about in a paper by Ward and Peppard (2016).

Specifically, you are asked to present this benefits management approach to the executive board in the next meeting. For this, you have to prepare the following:

- A) Present the different steps of the benefits management approach. For this, please fill out the missing parts of the below figure and describe each step briefly. (4 Points)



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B) You expect that the CEO will ask you in detail about the potential benefits of the future algorithmic management platform. To better illustrate the promised benefits, you plan to present a benefits dependency network. A colleague of yours has already started working on such a benefits dependency network but has never finished it. Therefore, you have to **complete the following benefits dependency network** by filling in the missing pieces. In particular, use the 15 items from the following table and write the numbers at the corresponding location in the network. Also correctly name the five dimensions of the network by writing their names into the empty boxes below the network. **(10 points)**

1	Security and encryption	9	Improved Management Processes
2	Implement a training and education program for the employees	10	Improved Utilization and Efficiency of Workforce
3	The performance of employees is constantly recorded, reviewed and evaluated against business objectives	11	Managers rely on the management platform for planning workers' tasks
4	Improved planning capability and flexibility	12	Initial training of managers to work with the new management platform
5	More transparency of Twitter's business processes	13	AI-based planning and scheduling algorithms
6	Reduction of Twitter's workforce	14	Business processes are tightly monitored and constantly adapted
7	Establish new data governance and privacy protection standards	15	Managerial interface to planning, scheduling, and performance data
8	Employees are automatically assigned with tasks		

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