



Model Answers Exam MOT1524 nov2022

Leadership and Technology Management (Technische Universiteit Delft)

Model Answers

MOT1524, 2022/2023

Examination Leadership and Technology Management

Date: November 9, 2022

Time: 13.30 – 16.30

MOT1524 Question 1: UTQ Group's innovation journey

An increasing amount of new construction is dotting the iconic New York City skyline. But as big buildings go up, a small music shop is working to preserve history – one guitar at a time. At Carmine Street Guitars. Even in a digital age, where production is rapidly trending toward automation, everything at Carmine Street Guitars is still crafted by hand. The guitars are made from reclaimed wood from old New York City landmarks. As the owner Rick Kelly remarks: "They throw it away basically. I find it in dumpsters. I do a lot of dumpster divin' and I've managed to get some really nice, iconic, historic buildings." Kelly pumps out about four custom guitars per month, capturing a bygone era and re-purposing it into his instruments (CBS news August 7, 2018). Triggered by this news story the R&D director at UTQ Group is inspired and aims to explore the opportunities of 'frugal innovation'.

- a) What does the R&D director mean when she talks about 'frugal innovation'? Explain the meaning of frugal innovation and show how this differs from responsible innovation.

Responsible Innovation:

A model of innovation that adopts the core principles of transparency and acceptability, enabling a process where innovators strive to innovate in an ethical, sustainable and desirable way to meet social and environmental goals as well as financial goals [1 point]

Frugal Innovation:

The concept of 'doing more with less' in innovation, where innovators consider societal and economic needs as the main driver for innovation. Achieving this, particularly with the aim of developing marketable products for developing markets, occurs through a process of reducing the complexity and cost of innovations, such as by removing nonessential features [1 point]

UTQ Group produces artificial synthetic fibers and filaments and is active in 15 locations and employs 7500 people in Austria. Sustainability is important for each of UTQ's innovations. UTQ holds 1,278 patent applications and patents for a total of 190 patent groups in 52 countries. Dr. Antoinette Mueller was recently hired as UTQ's new R&D director. In this role she faces a number of challenges to safeguard UTQ's future. One of these challenges concerns that she struggles to find a good balance between the exploration and exploitation activities within UTQ and wants to know more about the benefits of 'absorptive capacity'.

- b) Explain the notion of absorptive capacity and argue why or why not this relates to the innovation power of UTQ. [2 points]

Absorptive capacity (ACAP) refers to the ability of a firm to recognize the value of new external information, assimilate it and apply it to commercial ends (Cohen and Levinthal, 1990). ACAP distinguishes between what we already know (prior knowledge) and what we aim to learn (external knowledge). [1 point]

It does relate to the ability to innovate. As companies may anticipate the value of external knowledge and to effectively apply this internally to develop new products, services, and/or business models [1point]

UTQ Group's innovation department uses many projects in order to run the innovation processes, which are mainly characterized by knowledge work. The R&D director is therefore worried about some of the core dilemmas associated with managing knowledge work.

- c) What is the difference between teams versus projects and show how projects may be able to come up with radical innovations? [2 points]

Answer:

In order to answer this question you need to provide the following:

Teams are characterized by common goals, shared identity, interdependence, interaction, mutual influence. [0.5 points] Projects differ from teams. The organizational context of projects in contrast to teams does not often have a fixed membership, work is often temporary, fluid, interrupted and distributed. [0.5 points]

Radical innovation concerns processes that are aimed at creating a very different and disruptive ways of doing things. [0.5 points] Projects can stimulate knowledge creation and be fertile sites for learning because they bring together individuals from different backgrounds to work collectively to create something radically new things. As such, the generation and exchange of ideas are key here.[0.5 points]

- d) Provide two dilemmas that companies, such as ASQ technologies may face in managing their knowledge work. **[2 points]**

There are many dilemmas in relation to managing knowledge work, such as in relation how to organize the different knowledge processes (knowledge storage, development, sharing, application, etc.). Other dilemma's may apply to the structuring of organizations in order to stimulate knowledge work, or in relation to managing knowledge workers in terms of recruitment, development, pay and rewards, etc.. You only need to provide two examples of such dilemmas and you get 1 point per example. Note that this question is not about managing projects but about the management of knowledge work(-ers).

After spending some more time at UTQ Group, the new R&D director has got a better overview of the firm and its (future) innovation capabilities. She is no longer sure about the benefits of frugal innovation and wants your advice about the possible opportunities for frugal innovation.

- e) Advice to R&D director of UTQ about the possible opportunities for frugal innovation and show the steps needed to embark on such a frugal innovation journey. **[2 points]**

You need to provide at least one clear example of a frugal innovation opportunity for UTQ. A very likely opportunity would be, for instance to explore the re-use of waste of their existing product lines or to develop a completely new product line on the basis of "doing more with less by seeing resource constraints not as a liability but as an opportunity"
[1point]

Steps [1 point]

The book provide the following steps, that could be taken into consideration for exploring frugal innovation opportunities:

1. Developing circular networks
2. Crowdsourcing solutions across industries
3. Encourage simplification of structures:
4. Use KPI's to incentivize and sustain frugal behavior:
5. Emphasize "doing more with less" within the firm

For each of these steps you should ideally indicate how UTQ should deal with these steps in order to provide a clear example of a frugal opportunity or strategy.

MOT1524 Question 2: Innovation management at Voyage-Fare

Voyage-Fare is a start-up organization operating from Berlin, Germany. The company aims to make searching for and booking for vacation rentals as smoothly and easy as possible. Voyage-Fare also makes travelers happy by helping them to book the ideal accommodation for the lowest prices. This enabled by their search engine, which uses machine learning technology and suggests the ideal destination, based on user's preferences. Voyage-Fare has a total of 90 employees and its organizational structure can be characterized as organic and with very limited hierarchical levels. The three founders of Voyage-Fare are always looking for ways to innovate and are currently trying to improve their current ambidextrous capability.

- a) Explain what organizational ambidexterity means and give two examples of how Voyage-Fare could achieve this. **[2 points]**

This question is about a firm's ability to combine both exploitation (delivery) and exploration (new idea generation) otherwise known as ambidexterity. You need to be able to show the difference between exploitation and exploration activities in the case of Voyage-Fare [1 point].

In your answer it is important to show how exploitation and exploration activities are balanced in Voyage-Fare. Rather than just creating a workforce that is able to efficiently and effectively take care of existing business activities, current knowledge-driven firms also need to support the workforce in creating all kinds of innovative outcomes, such as solutions to current problems, adapting to environmental change or developing completely novel products, services, or business models. There are different ways in which companies may enable ambidexterity (i.e. balancing exploitation and exploration activities), such as allocating a certain amount of time per week to the workforce to work out their own ideas (like this is done at 3M but also at Google), organizing sessions in relation to new developments, or just being open to new ideas by opening an idea box and let people profit from the innovations that may come out of their ideas. [1 point for describing one of these ways]. Be aware that this question is all about how to create a balance between exploitation and exploration activities within Voyage-Fare and not about examples of either exploitation or exploration activities.

- b) What are the pros and cons of Voyage-Fare's organic structure and advice whether the company needs to change the current structure in order to enable ambidexterity or that this is not necessary. **[2 points]**

An organic structure can facilitate communication, as an informal flat structure does not contain several layers of management and communication does not have to pass through multiple people before it reaches its destination. Moreover, organic structures are characterized by informal control, making it easier to respond to changing circumstances. In addition, in decentralized structural forms, employees are more actively participating in decision making, facilitating faster feedback and more innovative solutions. [1 point]

On the other hand, there are disadvantages when it comes to effective management, productivity, employee satisfaction and growth. One of the problems with an organic organizational design is that the flat structure means there are fewer managers, which might result in a loss of control when there are a large number of employees. Also, the lack of a formal structure and specialization might come with potential issues that can make employees confused about their roles, decrease of motivation and productivity. [1 point]

Voyage-Fare could further invest in this organic structure, as a way to better react to market conditions. Such structure is useful in dynamic and unstable environments, where change occurs regularly and where there is a high level of uncertainty. However, your advice did not really matter as you could receive already 1 point for the pros and 1 point for listing the cons of organic structures.

- c) Explain the notion of crowdsourcing and provide two examples of how it could apply to the case of Voyage-Fare. **[2 points]**

Crowdsourcing involves the use of the so called 'wisdom of the crowd', i.e. by engaging the crowd, companies may have access to users' knowledge about product design and use in addition to the already existing knowledge base within Voyage-Fare. [1 point]

You then need to apply this to Voyage-Fare by showing how the company could mobilize the crowd. In other words, what can they do in order to tap into the knowledge of the crowd. The easiest way to do this could be by targeting their existing users of the platform but then you need to explain how Voyage-Fare could entice its users to provide additional feedback by answering questions in a survey, etc. Gaining access to people beyond the current users could be by organizing a contest. By offering the opportunity to win prizes, new users could be drawn to the platform. More examples are possible and you could earn 0.5 points for each of the two examples.

Voyage-Fare wants to improve its digital connectivity applications and fully exploit the opportunities of digitalization. Therefore, you are asked to show your expertise to the founders.

- d) Explain the notion of implicit digital connectivity and provide an example of how this could apply to the business of Voyage-Fare. **[2 points]**

Implicit digital connectivity implies that we are so called walking data generators. This means that we each leave an increasingly large 'data trail' (data that provide information on what we have done, with whom, where and how). Users are not always aware that their behavior is being monitored and used for enabling further business opportunities. [1 point]

Since Voyage-Fare is in the position to collect little data by tracking their users online this applies to them as well. Even if they do not (yet) intend to use these data. [1 point]

The owners of Voyage-Fare are enthusiastic to further explore the opportunities associated with implicit digital connectivity but are worried about the so called 'dark side'.

Explain what the owners mean by this 'dark side' associated with implicit digital connectivity and show how they could mitigate this. **[2 points]**

There is indeed a dark side or down side associated with implicit digital connectivity. Implicit digital connectivity implies that we are so called walking data generators. Data made available from computing applications and digitized objects in the case of implicit digital connectivity should be treated with respect to (the ethical rights of) the actual people who own their data. [1 point]

Since Voyage-Fare is in the position to collect little data, they should inform the users of their device about the future use of these private data (privacy concerns) in order to mitigate this problem. In dealing with such data, security risks may also be at stake. Voyage-Fare could also decide to refrain the use of such data. [1 point]

MOT1524 Question 3: Innovation challenges in Health-e

Health-e is a start-up organization operating in the Healthcare industry in the Netherlands. Health-e is a growth platform for healthcare providers and automates each step of the patient's journey, from first impression online and digital booking to follow-up appointments, making the healthcare experience positive for the patient as well as for the healthcare provider. The platform is accessible via a website and a mobile app. Health-e secures a strong web presence for the health providers through SEO strategies, optimized online profiles and highly visible customer reviews. The business model for Health-e stipulates that it acts as a mediator between customers and health providers. The service is free for customers, but the providers of the healthcare services need to pay a percentage of their revenues. The company was founded by Michaela Bond, who is also the current Chief Executive Officer. The 12 employees of Health-e claim that their boss shows a transformational leadership style.

- a) Define transformational leadership and show two ways how this particular leadership style could enable product innovation performance. **[2 points]**

Answer:

Transformational leadership is a leadership style that can inspire positive changes in those who follow. Transformational leaders empower and inspire employees to innovate and develop new ways to grow and improve the path to a company's future success. [1 point]

Through this mechanism, they can mobilize the trust and respect held by their subordinates to lend credibility to product innovation performance. [0.5 points]

Or,

Transformational leaders have a vision that motivates their employees, increases their willingness to perform beyond expectations, and challenges them to adopt innovative approaches in their work. The resulting heightened level of motivation is likely to enhance organizational innovation.

[0.5 points]

Or, by fostering corporate venturing through technological orientation. [0.5 points]

As the CEO Michaela Bond believes that her role is primarily to provide the necessary enabling context in order to facilitate knowledge work of his employees rather than to monitor and control them.

- b) Why do think Michaela Bond adheres to this vision about managing people? **[2 points]**

Answer:

This has all to do with motivation. Knowledge workers need to be managed skillfully, provided with excellent working conditions, and very good employment conditions. Control does not seem to work very well for such workers as these people are primarily motivated by Autonomy, Mastery, Purpose (Motivation, see lecture #2). Control does not go very well with stimulating creativity and innovation [2 points]

The duration of the innovation processes in the healthcare industry might exceed that of most other industries. The founder of Health-e has recently come up with the notion of front-end innovation (FEI).

- c) Please explain the notion of FEI and provide an example of a radical FEI that could apply to the business of Health-e. **[2 points]**

Answer:

FEI represents the activities that come before the formal and well-structured new product and process development (NPPD) or stage-gate model. [1 point]

Radical, front-end innovation captures the generation, screening and selection of discontinuous ideas for revolutionary concepts with a strong potential to transform or displace some or all of the existing market, business and technologies. Radical FEI can be science or customer/market driven and can be achieved through techniques such as market observation, evaluation of industrial or societal trends and analysis of hidden customer needs. For example, Health-e can research into image-guided therapy, or smart diagnostic systems and decide whether to develop these product features. [1 point]

The organization plans to be the first in the country that operates in the telehealth platform market, allowing providers to deliver care over video, audio, or text in synchronous and asynchronous modes. Therefore, a new project team is created in order to work on this 'distributed' telehealth project.

- d) Explain the notion of a 'distributed' project and provide two challenges associated with the use of such projects. **[2 points]**

Answer:

Distributed project: a project run from multiple locations with members from various organizations. [1 point]

There are challenges associated with the use of projects. For example, idea the team implements may be too radical / different for the mother organization, resulting to the ‘too much out of the box’ issue. [0.5 points]

In addition, the sense of community between the team members became so strong that they alienated themselves from the mother organization, creating tensions. [0.5 points]

Or,

Communication challenges/cultural differences/time zone mismatch. [0.5 points]

For the project team mentioned above, Health-e needs a new project manager as soon as possible. The founder wants this position to be filled by a person that would be ready to start working immediately, and ideally by using as less resources as possible during the recruitment strategy. The founder needs your advice.

- e) Explain the difference between internal and external recruitment. Also, suggest which of the two would be most appropriate in the specific case by providing two reasons for your argument. **[2 points]**

Answer:

Internal recruiting is when a business or organization intends to fill a vacancy from within its existing workforce. [0.5 points]

External recruitment on the other hand is when an organization looks to fill vacancies from applicants outside of the company. [0.5 points]

Internal recruiting would be better in that case, as it is ‘cheaper’. [0.5 points]

With internal recruiting, a person already knows the company culture and can start working immediately, without needing to have on-boarding training. [0.5 points]