



Model Answers MOT1524 exam Jan 25 2023

Leadership and Technology Management (Technische Universiteit Delft)

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Examination Leadership and Technology Management

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Model Answers

Question 1: Knowledge Management and Innovation

According to some experts the notion of 'Knowledge Management' (KM) is used in both the popular and academic literature to refer to the general idea that organizations can generate value by improving the ways in which they create, capture, store, distribute, and transfer and effectively apply knowledge. The term knowledge management is somewhat ambiguous as it seems difficult to manage something as abstract like knowledge. Therefore, the emphasis lies on the above mentioned processes (create, capture, store, etc.) as one is able to manage these processes rather than to focus on knowledge as such. The current focus on KM was partly a reaction to a changing business context.

- a) Explain the nature of this changing business context and show how this differs from the traditional industrial economy? [2 points]

Answer

This question is all about the context of our knowledge economy and not about organizational structures and is structured in two parts. In part 1 you should show the nature of the knowledge economy. The book mentions the following aspects in relation to the knowledge economy in chapter 1:

- The growing knowledge-intensity of business,
- the importance of information and communication technology on work and work relationships
- The importance of change and innovation for organizations
- More turbulent business environments

You can also use the slides from lecture #1 in which I presented the changing nature of work

- Organizations are becoming increasingly flexible
- Technology enables companies to organize their activities through complex projects with dispersed specialists often spanning boundaries of time and culture
- Industry 1.0, 2.0, 3.0 and 4.0

If you are able to mention one or more of these aspects you will get 1 point.

In part 2 you are asked to show the difference between our current knowledge economy and the traditional industrial economy for one point:

In the traditional industrial economy, labor was treated as a factor of production (like land or capital). The hand/body was important (e.g. scientific management) rather than the brains of workers, which are more significant in the era of the knowledge economy. (see Ch. 1).

The changing business context has also led to a stronger emphasis on innovation for firms.

- b) Explain why and how the view of workers has changed with the increasing importance of innovation? [2 points]

Answer

In traditional economies, knowledge was centralised and most workers were just 'a pair of hands' labourers. Today, it is recognised that knowledge is distributed among all employees and that to foster innovation, which is increasingly important, it is necessary to constantly explore and exploit knowledge processes that often involve digital technologies.

Why this happened is rooted in the fact that specialists in the area of different technologies are relatively scarce and can find jobs easily since they are very important drivers of innovation in today's firms. Such knowledge workers need to be managed skillfully, provided with excellent working conditions, and with very good employment conditions. This also implies a power shift from business owners to the workforce. (You may earn one point for the how and another point for the why).

At a growing number of innovation driven firms, technical employees are expected to spend 20% of their time on projects other than their core job, and similarly managers are required to spend 20% of their time outside the core business, and 10% to completely new products, services and/or business models. These are usually contractual obligations, reinforced by performance reviews and peer pressure.

- c) To what extent will the above practices lead to higher innovation outcomes? Explain your answer carefully and start by showing what you mean by innovation outcomes. [2 points]

Answer

First you need to show what you mean by Innovation Outcomes (novel products, services, business models, etc.) and then argue why this model usually works. Since ideas are the building blocks of innovation many companies apply models as described in this question. This model was once introduced by Google in order to stimulate exploration activities. Letting people work outside of their core business will stimulate them to explore new things.. Although I agree with this the main thrust of the answer should include the opportunities for exploration.

A survey study among engineers indicated that in design and problem solving, discussions with colleagues were rated as being twice as valuable as knowledge databases, and consequently engineers were four times as likely to rely on colleagues.

- d) What could be the reasons why the engineers prefer to rely on each other rather than on knowledge databases in the case of design and problem solving? Provide two reasons why. [2 points]

Answer

- This has to do with the difficulty of codifying tacit knowledge (know-how). Engineering work involves a great deal of tacit knowledge and experience. Both are difficult to store and retrieve electronically and therefore sharing such knowledge directly is more effective.
- The complex engineering and unique environmental context both limit the reuse of standardized knowledge and expertise. Therefore, engineers tend to rely on colleagues rather than on systems.

Some management gurus advocate that companies should strive for a strong culture in order to firmly base their business and innovation activities.

- e) Explain the significance of a strong culture for today's firms and show a way how firms could further strengthen their culture if needed? [2 points]

Answer

As explained in lecture #6 and in the book, each organization has a unique culture, which is based on the deeply rooted values, beliefs, norms and principles displayed by leaders and determines how to respond to threats and opportunities in both the external and internal environment. A strong culture conveys a strong sense of identity for its members and facilitates the work. (1 point for such a definition and explanation)

Firms may strengthen their culture through storytelling, engaging in rituals, material symbols, creating a common language, and to provide role-models who do the 'right' thing. (1 point for mentioning any of these).

Question 2 MOT1524: Innovation at Nature Products

Sustainability implies the creation, delivery and capturing of economic, social, and environmental value as part of the overall business. For example, up to 40 per cent of the more than 395.000 tons of bananas grown in Australia each year are dumped before they even leave the farm, just because these bananas are not the right color, shape or size, or because of oversupply in the market. Banana farmers Kelly and Bob Thompson tried to find a solution as they discovered that those unwanted green bananas could be made into a highly nutritious, gluten free flour. Since it takes 10 kilos of green bananas to make about 1 kilo of flour, peeling by hand did not prove very effective. This gave Bob Thompson the impetus to design the world's first mechanical banana peeler. As a result of these efforts, Kelly and Bob Thompson founded the Nature Products company. Between their different product lines, which include gluten free flour as well as skincare products, and a health supplement made from bananas, they save millions of bananas each year from waste. Their success has attracted international interest and Bob and Kelly have won several awards for their world-renowned waste-reducing technology. The ambition of Nature Products is to create more international awareness of the possibilities to use banana waste to help starvation and hunger situations globally.

- a) What is the nature of innovation that you can identify in the case of Nature Products? For example, is this incremental, disruptive or something else?

Answer

This is clearly an example of a **product innovation** since gluten free flour is sold by the company as a product in the growing gluten free flour market. It is not an incremental innovation but this is something novel and could be regarded as a radical innovation [2 points for arguing this*]. Making gluten free flour from banana peel was something that Bob and Kelly discovered and then decided to market. Although this is a **somewhat radical** innovation, it probably did not disrupt the existing gluten free flour market but it was definitely a new entrant with impact. The world's first mechanical banana peeler that Bob invented is only used by Nature Products company to enable the production of their banana products. Therefore, the banana peeler should not feature as an innovation in your answer since it is part of the internal organization, not for sale, and therefore not a product innovation. If you want you can treat it as an incremental process innovation but you should be aware that this is not a part of the market offerings of Nature Products.

Since their products do not only capture economic value (profits) but also social (help to stop starvation and hunger), and environmental value (waste reduction). As such, it could also be regarded as a **responsible kind of innovation** [2 points for arguing this*] although responsible innovation remains an elusive concept. The offerings of Nature Products do not seem to fall into the category of frugal innovation. Although their production process is relatively simple, this is not a case of doing more with less or offering banana products to people that could not afford such products before the launch of Nature Products' products.

*Please, be aware that you can score a total of 2 points for this question. Either by arguing for a radical product innovation or making a case for responsible innovation.

In a recent interview with Bob Thompson, the question was raised whether Nature Products is an ambidextrous organization or not. Since Bob was not able to answer this question he needs your help here.

b) What is the meaning of an ambidextrous organization?

Answer

This question is about a firm's ability to combine both exploitation (delivery) and exploration (new idea generation) otherwise known as ambidexterity. 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 [1 point for defining ambidexterity].

Defining ambidexterity is not enough as you should also mention the organizational aspects here. As such, 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 mentioning the organizational aspects of ambidexterity]

c) To what extent do you qualify Nature Products as being such an ambidextrous organization? Provide evidence either for or against this statement.

Answer

In this case description there is nothing to suggest that Nature Products is an ambidextrous organization. In the end of the day it is just a farm that produces several banana-based products and there does not seem to be a very strong R&D focus at the moment. Although, the owners came up with innovations, organizing knowledge processes in relation to exploration and exploitation does not seem to be very relevant for this company at this stage. As such, there seems to be no reason to deal with ambidexterity. This also may explain the lack of knowledge about this issue by one of the founders during the interview. [2 points]

The market in which Nature Products operates is becoming more and more competitive as more farms see the opportunity to convert banana waste into gluten free flour and other popular health products. Until now, Nature Products could gain competitive advantage by being a first mover and by focusing on creating innovative offerings to please their customers. This was enough to stay ahead of the competition but the situation is changing due to more competition.

d) What could Nature Products do in order to improve their main source of competitive advantage?

Answer

According to the resource-based view of the firm, sustained competitive advantage is the results of valuable, rare, inimitable, and non-substitutable resources. For Nature Products, their product offerings were the main source of competitive advantage [1 point for showing Nature Products' main source of competitive advantage]

In the case of Nature Products this means to look for improvements of their current production process, to innovate further by coming up with novel products/services (diversification), or to make money by licensing some of their knowledge, or to offer training to other farmers. [1 point for describing one of these options]

In a recent interview with Kelly Thompson, further questions were asked about Nature Products' future business strategy. Here Kelly very much stressed that her company currently relies on emergent strategy processes.

e) What does the founder mean by these so called 'emergent strategy processes' and why do you think the company works like this?

Answer

Emergent strategies literally emerge over time in response to events that may not have been anticipated (see Chapter 4). This in contrast to the planned view of strategy. Here firms develop plans about how they are going to operate and compete in the future. [1 point]

For a company, such as Nature Products, who are in a relatively new market, plans often do not work out as many unanticipated events take place so it seems better to respond to these events rather than to make plans at this stage. [1 point]

Question 3 MOT1524: Managing people at Foody

Foody is a high-tech company located in Amsterdam, operating in the F&B industry for children. The company has 50 retail stores in the Netherlands and offers a robust direct-to-consumer and e-commerce platform. Its business model is based on its direct-to-consumer subscription service. The greater mission of Foody is to provide organic, crave-worthy, snacks and meals for children of all ages. The recipes are crafted with only the best organic ingredients (whole fruits and veggies picked, then cold-pressed or freshly frozen) to support growing kids at every stage. All of their organic fruits and vegetables are grown on the century-old family farm of the Founder. It must be noted that by using the magic of high-pressure pasteurization to lock in the nutrients and flavors of farm-fresh ingredients, they have pioneered the first cold-pressed, organic fruit and veggie blends for babies. Foody is an organization with high innovative orientation. Therefore, the founder is concerned with the implementation of a more efficient people management approach towards this direction.

- a) Please explain the notion of ‘innovation-facilitating bundles of Human Resource Management (HRM) practices’ and provide one example of such a HRM practice that can be applied to facilitate innovation at Foody. **[2 points]**

Answer

HRM bundles are sets of interrelated and internally consistent HRM practices that are aimed to contribute to more increased outcomes, than each HRM practice in itself. An innovation-facilitating bundle of HRM implies that a set of interrelated and mutually reinforcing HRM practices can facilitate innovation, more than when each HRM practices are applied in isolation. [1 point]

Examples of such HRM practices include: Recruitment of highly skilled scientists, Training of innovative teams, Innovation leadership/management and an explorative culture that supports and motivates innovation, Talent and performance measurement that can ensure the right competences and a continuous innovation. [1 point for 1 example]

Currently, Foody employs 75 employees, with its structure being described by its management as product-based divisional, based on the particular line of products or services they produce. The founders are a bit worried about whether this structure is the appropriate for the organization. As a result, they are hiring consultants in order to find out whether implementing a functional structure would be more appropriate.

- b) Please, show two cons of a divisional and two pros of a functional structural form. **[2 points]**

Answer

Pros of functional structural form include: Specialization, Accountability, Cost-efficient as a result of economies of scale, this structure enhances the experience of each function [1 point if you provide 2 pros]

Cons of divisional structural form include: Does not support knowledge exchange, Costly, Isolation of employees, Lack of communication amongst divisions, Lack of control, Not suitable for small organizations [1 point if you provide 2 pros]

Foody often uses projects to organize activities associated with developing or introducing innovation (e.g., a new product in their line). However, the Founder is concerned with the high level of uncertainty and unknowability in project contexts.

- c) Please identify the four main sources of uncertainty in project contexts and provide one short example for each. **[2 points]**

Answer

Technical uncertainty → e.g., Knowhow for the particular project, etc.

Market uncertainty → e.g., How will the market respond to our product, etc.

Resource uncertainty → e.g., Do we have people, time and money needed for the project, etc.

Organizational uncertainty → e.g., Do we have the appropriate structure, should we outsource, etc.

[2 points: 0.5 per uncertainty type with its examples]

One of the quotes of the CEO has been ‘We have the smartest people in our company’.

- d) How would you describe the innovation model of the company, based on this principle? Also, provide one advantage and one disadvantage of such an approach. **[2 points]**

Answer

This quote of the CEO is one of the basic principles of the ‘closed innovation’ model. Closed innovation implies that innovation is developed internally, within clearly defined boundaries. Closed innovation relies on the idea that internal expertise has the ability to produce new businesses and new opportunities, without external resources, while technology and intellectual property remain under the control of the organization. [1 point]

Advantages of a closed innovation model may include: Information about innovation do not spread to the outside world, innovation is under the full control of the organization, new product development might be more easily performed in a clear organizational design. [0.5 points]

Disadvantages include: not using external ideas, lack of creativity as the same employees cannot endlessly generate new ideas, innovators and leader might lose focus on what competitors are doing in the industry. [0.5 points]

The Founder of Foody believes that the role of human resources is fundamental for an efficient innovation management. Therefore, he has decided to highly invest in the training of all employees, as a way to develop their human capital.

- e) Please explain the difference between on-the-job and off-the-job training and provide two examples for each type that could apply in the case of Foody. **[2 points]**

Answer

On the job training is the process of learning through practical work onsite. Off the job training, is when employees are trained off site, and not while performing their actual job tasks. In other words, on the job training believes in ‘learning by doing’ while off the job training believes in ‘learning by acquiring knowledge’. [1 point]

On the job training examples: Coaching, mentoring, employee relations, internship, job rotation, etc. [0.5 points]

Off the job training examples: Simulations, Case studies, Role play, Lectures (e.g., safety), etc. [0.5 points]