Tentamen 7 November 2018, vragen en antwoorden

Leadership and Technology Management (Technische Universiteit Delft)

Studeersnel wordt niet gesponsord of ondersteund door een hogeschool of universiteit
Gedownload door Kees Johannes (melihdurmaznl@gmail.com)

MOT1524, 2018/2019 Model Answers

Leadership and Technology Management

Date: November 7, 2018
Time: 13.30 – 16.30

Question 1

Scientific management is a theory of management that analyzes and synthesizes workflows. Its main objective is improving economic efficiency, especially labor productivity. It was one of the earliest attempts to apply science to the engineering of processes and to management. Scientific management is sometimes known as Taylorism after its founder, Frederick Taylor, who began the theory's development in the United States during the 1880s and 1890s within manufacturing industries. Ever since that time the theory and applications of scientific management are popular among engineers.

a) What is the nature of Taylor's approach to managing work? Please, explain how work processes should be organized according to the principles of Scientific Management. [**2 points**]

Answer:
As stressed during the lectures the nature of tasks are key to managing people. Without interesting task dimensions, people are likely to get bored and low performance is more than likely. Scientific management is an early approach in which the task dimension is underlined. Rather than aiming for interesting work, efficiency is key here.

Work processes should be divided up into a series of simple sub-tasks which could be standardized and tightly prescribed. Workers will no longer be responsible for planning the organization of work but are required to carry out these simple standardized subtasks. The task of managers is to observe work processes and to determine the most efficient way to organize these (acting as engineers). (see Ch. 1 of the book)

'Scientific Management can be seen as an early attempt to manage knowledge.'

b) Please, argue why you agree or disagree with this particular statement.[**2 points**]

Answer:
Although scientific management as a distinct theory of management or school of thought was obsolete by the 1930s, most of its themes are still important parts of industrial engineering and management today (see for example Business Process Reengineering, ergonomics, etc.). There are also many companies today (some of you mentioned McDonalds for instance) which apply the principles of scientific management. Many approaches today feature under the heading of Operational Excellence and it is interesting to reflect whether this will enable the right context for innovation or not.

Gedownload door Kees Johannes (melihdurmaznl@gmail.com)

Q1

Some argue that knowledge work is best conducted within flexible forms of organizing, i.e. within more flexible structures otherwise known as "new organizational forms".

c) Describe four (4) characteristics of such flexible forms of organizing? [**2 points**]

Answer:
Knowledge work is best conducted in so called flexible forms of organizing. These have the following characteristics:
1. Decentralization (through semi-autonomous business units)
2. Flatter less-hierarchical structures
3. Cross-functional project teams
4. Inter-organizational networking
5. Globalization of business

In addition to this list you could also mention 'organic' , informal settings, egalitarian cultures and horizontal, as opposed to vertical, communication dominates.

You may choose 4 of these (0.5 point per characteristic as long as you also provide this with a description). You may find these descriptions in Ch. 3 of the book.

Although new organizational forms are conducive to the support of knowledge intensive work, they also can make it more difficult to manage knowledge.

d) Explain this paradox by showing the downsides of such new "organizational forms"? [**2 points**]

The possibilities of knowledge loss within such flexible forms of organizing is key here. Paradoxically, while new organizational forms are conducive to the support of knowledge-intensive work, they also make it more difficult to manage knowledge since they open up more opportunities for knowledge loss. Knowledge Management' initiatives can be seen as an attempt to resolve this paradox. (see Ch. 3 of the book). Many of you also discussed control issues, and knowledge boundaries here but the main concern is the possibility of losing knowledge due to flexibility.

Gedownload door Kees Johannes (melihdurmaznl@gmail.com)

Q1

Although the structuring of organizations is very important, mainly its management and leadership seem to make a significant difference in the end. According to John Kotter of the Harvard Business School, leadership and management must go hand in hand even though they are not the same thing.

e) Distinguish between leadership and management and show their significance for the success of innovation-driven organizations. **[2 points]**

Answer:

Management is about coping with complexity. Good management brings about order and consistency by drawing up formal plans, designing rigid organization structures, and monitoring results against the plans. Leadership, in contrast, is about coping with change. Leaders establish direction by developing a vision of the future; then they align people by communicating this vision and inspiring them to overcome hurdles. [0.5 points]

Not all leaders are managers, nor, for that matter, are all managers leaders. Just because an organization provides its managers with certain formal rights is no assurance they will lead effectively. Leaders can emerge from within a group as well as by formal appointment. Organizations need strong leadership and strong management for optimal effectiveness. [0.5 points]

We need leaders for the success of innovation-driven organizations to challenge the status quo, create visions of the future, and inspire organizational members to want to achieve the visions. We also need managers to formulate detailed plans, create efficient organizational structures, and oversee day-to-day operations within such innovation-driven organizations. [1 point]
(See lecture slides)

Gedownload door Kees Johannes (melihdurmaznl@gmail.com)

Question 2

ImagePower was established in 2015 and has a workforce of almost 50 employees. Their hyperspectral imaging software enables food companies to automate the quality control of their products. Although the company was able to attract the right people with relevant skills and knowledge of hyperspectral imaging, many left within the first six months of employment. After analyzing this problem, a management of technology consultant explained that the main reason for this high turnover rate was the company's inability to balance the control and commitment of their new employees.

a) Define the meaning of control as well as commitment and explain how an imbalance between those two concepts could lead to higher employee turnover. **[2 points]**

Answer

In this question you should show the insights into the nature of knowledge workers who are motivated by autonomy, mastery, and purpose. Such people do not like to be strictly monitored or controlled but are intrinsically motivated to perform their tasks. Many companies struggle with getting the right balance between control mechanisms and offering knowledge workers the freedom to explore [1 point]

Descriptions of control (extrinsic and applied by management) and commitment (personal attribute of knowledge workers) will yield 0.5 points each.

At ImagePower, 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 and businesses. These are contractual obligations, reinforced by performance reviews and peer pressure.

b) To what extend 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 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. Many of you were critical about the use of the inclusion of performance reviews and peer pressure in this model. Although I agree with this the main thrust of the answer should include the opportunities for exploration.

Gedownload door Kees Johannes (melihdurmaznl@gmail.com)

Q2

Since codifying knowledge in their ICT systems did not lead to much knowledge exchange, Communities of Practice (CoPs) are now introduced at ImagePower.

c) Define Communities of Practice (CoPs) and explain how knowledge is primarily communicated within CoPs and why this is superior to codifying knowledge in ICT systems. **[2 points]**

Communities of Practice (CoPs) are a group of people with similar goals and interests and who employ common practices, work with the same tools, use a common language, and hold similar beliefs and value systems. The main purpose is to further develop capabilities rather than to accomplish a specific task like in common project teams. [1 point]

Regular social interactions (discussions, presentations, etc.) is key here. Especially story-telling is an important way of communicating knowledge in CoPs (rather than codifying it in ICT systems). Stories are important because they present information in an interesting way, personalize the information, bring people together, and express values. [1 point]
(see chapter 8 of the book and lecture slides)

The founders of ImagePower also aim to embark on 'open innovation' in order to secure their future innovativeness. A first step is to learn more about 'networked innovation' in order to adapt their current management practices of knowledge work.

d) Please, explain the four (4) defining features of networked innovation and advice the founders of ImagePower about the future management of their knowledge work. **[2 points]**

Answer:
Although many of you understood the nature of Communities of Practice (CoPs) as networks of communities, only some of you were able to show some insights in innovation networks.
As more and more organizations rely on outside knowledge it is important to realize what networked innovation implies. Chapter 9 of the book shows that processes of knowledge integration are central to connect different parties (in what areas do you collaborate and what areas do you keep for yourself). Also understanding, forming, coordinating and realigning your social networks is crucial. Obviously, also technology and other material artefacts can play important roles as 'boundary objects' linking different groups and interests. Finally, any collaboration is inherently politicized and relies on multiple sources of knowledge and power (see also the lecture slides) [1 point]

The advice to ImagePower should include one or more of the above boundary conditions.
[1 point]

Gedownload door Kees Johannes (melihdurmaznl@gmail.com)

Q2

Todd Bell is the new HR director at ImagePower. He is a seasoned manager of human resources with a vast experience with technology companies. He wants to help ImagePower to become a world leader in hyperspectral imaging solutions for business ventures. However, he fears that ImagePower's current organizational culture might not be strong enough.

e) What are the implications of such a weak organizational culture for ImagePower and what could Todd Bell do to change this? **[2 points]**

Answer:
This question is all about the dominant values within ImagePower. In a strong culture, the organization's core values are both intensely held and widely shared. The more members who accept the core values and the greater their commitment, the stronger the culture and the greater its influence on member behavior because the high degree of 'sharedness' and intensity creates an internal climate of high behavioral control. Employees of the organization with a strong culture know exactly what is expected of them and these expectations go a long way in shaping their behavior. In a weak culture core values are not intensely held and widely shared. [1 point]

What one could to strengthen the culture is to use Stories, Rituals, Material Symbols, Language, and or Role-models, etc. (see Chapter 2 of the book and lecture slides). [1 point]

Gedownload door Kees Johannes (melihdurmaznl@gmail.com)

Question 3
In 1995, Lars Kolind, CEO of Oticon, world leader in hearing aids, noticed that product developers in several project teams had spent a full year obsessed with a line of digital hearing aids. This productive focus was hardening the outstanding project teams into departments. Kolind decided to disband all teams in the organization, and to form new teams based on time horizon rather than function. Kolind remembers: "It was total chaos. Within three hours, over a hundred people had moved. To keep the company alive, one of the jobs of top management is to keep it disorganized" (source: Robert Sutton, 2002).

a) Latané's social impact theory consists of three (3) components that help explain social influence in groups and teams. List and describe each of these components [**1 point**]

Answer:

- Strength: How important to you is the group?
- Immediacy: How close is the group to you during influencing attempts?
- Number: How many people are in the group?

[1 point for all of these factors] [0.5 for one or two]

b) Use the social impact theory to explain, if the decision of Lars Kolind of Oticon to disband all of his project teams was a good idea or a bad idea? Explain why (not) [**2 points**]

Answer:
Good idea. The project teams were becoming too important to the team members (too strong), they were very immediate (threat towards continuous influencing at lower creativity). Number component not provided in the text. [0.5 leniently scored]

Scott Tannenbaum and his colleagues wrote a 2012 article, in which they observed that teams have changed.

c) Use two of the key insights from Tannenbaum's article that could be applied to manage Oticon's project teams today [**2 points**].

Answer:
Two out of the following insights:

- Agility (high dynamics) -> people are now members of multiple teams in different roles and with different tasks and fte.
- Technology (online) and physical distance (work at larger geographical distances) have changed teamwork
- Empowerment (self-managing teams) and delayering (lean and downsized)

Gedownload door Kees Johannes (melihdurmaznl@gmail.com)

Q3

As the world becomes more interconnected and competitive, creativity and innovation are increasingly important. Although creativity and innovation are related they are not the same.

d) What is the difference between creativity and innovation? Please use the standard definition of creativity (see the lecture slides) in order to formulate your answer [**2 points**].

Answer:
• Creativity = the generation of ideas that are novel and useful. [0.5 point per component]]
• Innovation = the successful implementation of creative ideas. [1 point for the correct observation]

Justin Berg (2016) conducted a field study in the circus and a laboratory experiment in order to find out if creators of circus acts forecast in other ways than managers.

e) What constitutes creative forecasting according to 2016 article of Justin Berg? [**1.0 point**].

Answer:
The ability (or skills) to of predict the outcomes of new ideas (Berg, 2016, p. 434)

f) What were the main findings and practical implications of Justin Berg's studies? [**2.0 points**].

Answer:
- Creators are better (more accurate) in forecasting about novel ideas than managers; [1 point]
- But only when forecasting the outcomes of other people's ideas; not when forecasting about their own ideas [1 point]

Gedownload door Kees Johannes (melihdurmaznl@gmail.com)