Twentsche Kabelfabriek

Organization Studies Project
Company Financial & Strategy Analysis

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1. Introduction

This project was composed to provide a detailed overview of the telecommunication division of the Twentsche Kabelfabriek, also referred to as TKF. The aim of this project is to analyze the company's contingencies and their relationship its organizational effectiveness. Practical information about the company was collected through an interview with a representative along with a company visit; a tour of the factory and a presentation from Wim Bank, the Director of TKF. This data is compared to applicable theoretical information, gathered from textbooks and other relevant sources, in order to identify similarities and differences. This comparison allows an evaluation and justification of the Twentsche Kabelfabriek's effectiveness in terms of environment, size, structure, strategy and technology. The central question this project focuses on is the fit between the applicable theoretical contingencies and the company's practical structure.

The Twentsche Kabelfabriek was set up in the Netherlands in the 1930s and started out with the production of cables used for electricity and telephone connectivity. Today, it is an internationally operating company selling worldwide solutions for creating reliable energy along with highly durable data connections. The main products offered are cables, including optical fiber, power cables and copper cables. In the 1980s, it had a change of strategy and began purchasing small businesses in the same market. Eventually, it developed into a multi-national organization, referred to as the Twentsche Kabel Holding. Nowadays the Twentsche Kabelfabriek is considered the daughter-company, even though it TKF was originally the founder of TKH.

2. Theoretical Framework

2.1 Theory environment - structure

Robert Duncan describes environment using two general dimensions, rate of change and complexity. Rate of change is how fast an environment is changing and complexity is "the number of elements there are in an environment" (Robbins & Barnwell, 2006, p.264). The combination of these dimensions describes the environmental uncertainty, or the amount of forces and pressures that exist which limit the predictability of that environment. The extent of an organization's structural complexity is directly related to the uncertainty and instability of an environment. For example, a company in an highly dynamic environment is forced to adapt a complex structure; decentralization along with frequent planning. In the same sense, a company with low environmental uncertainty can adapt a simple structure with high centralization and formalization, as future demands can be predicted. Duncan's framework relates environment to structure using uncertainty and complexity, thus allowing a reliable inference regarding an organization's structure if it's environment is identified, and vice versa. Burns and Stalker, on the other hand, are focused on the structure of an organization and only classify them according to complexity, formalization and centralization, not focusing as much on the environment that shapes the structure. Also, Burns and Stalker's study was based on 20 English and Scottish industrial firms; their conclusions do not necessarily apply to a Dutch company. Furthermore, Lawrence and Lorsch's research is rather focused on the internal environment within a company; such as differentiation and integration. For this project, theory regarding both external and internal environments is most relevant. Also, their study was conducted in the 1960s; hence their results are potentially outdated or irrelevant to a company existing in 2015. Overall, Duncan's framework is the best fit for this analysis as it describes the relationship between an organization's environment and its structure; in other words, the relationship between the internal environment to the external environment.

2.2 Theory technology - structure

Perrow's landmark contribution of knowledge technology is the most relevant theory in analyzing the technologies used in the Twentsche Kabelfabriek. He describes an organizations technology along two dimensions and considered technology to be measured on work-group level instead of company level, as TKF's uses different technology in each department. Woodward's contribution is only based on manufacturing companies in England, therefore is not necessarily applicable to TKF as it services, manufactures, and sells the products. The differentiations of technology described by Thompson are also not suitable to describe TKF's technology, as a differentiation between sub-departments would not be possible using Thompson's contribution.

Robbins and Barnwell state that technology is "the information equipment, techniques and processes required to transform inputs into outputs." (Robbins & Barnwell, 2006, p213.) According to Perrow, technology generally has two dimensions; task-variability and task analyzability.
First of all, task variability can be considered as the degree of changes one faces in performing his work. Secondly problem analyzability asks for the way in which problems can occur and be handled.
By relating these two variables, Perrow comes up with four different types of technology; routine, engineering, craft, and non-routine technologies. Routine technology has few exceptions, low-task variability and high degree of problem analyzability Engineering technology has many exceptions, high-degree of task variability and well-defined problems. Craft technology has low-medium task variability

with tough to analyze problems. Non-routine technology has high-task variability and tough to analyze problems, as well (Robbins and Barnwell (2006), p 217.)

2.3 Theory strategy - structure

A company's strategy can be defined as "the adoption of courses of action and the allocation of resources necessary to achieve the organization's goals." (Robbins & Barnwell, 2006, 147) To get an idea how TKF manages its success and how it acts to derive its competitive advantage towards their competition we will compare its strategy with Porter's competitive strategies. Porter's findings indicate the way in which an organization copes with its strengths and anticipates on the competition its weaknesses. Other measures of strategy would have been Miles and Snow's four strategic types where organizations are divided into four categories e.g. defenders, prospectors, analyzers and reactors. This strategy measurement gives an adequate view on what kind of market an organization chooses to sell its product and what kind of behavior is needed to compete in that market. In this research the focus lies on how TKF located in the small village of Haaksbergen distinguishes itself from its competitors, which are internationally spread. Therefore we find Porter's competitive strategy most fit to examine TKF its strategy. Porter describes three different forms of strategy. First of all, cost-leadership strategy "aims to achieve the lowest cost within an industry." (Robbins & Barnwell, 2006, 162) Secondly, the differentiation strategy "aims to achieve a unique position in an industry in ways that are widely valued by buyers." (Robbins & Barnwell, 2006, 162) Lastly, the focus strategy "aims at cost advantage or differentiation advantage in a narrow segment." (Robbins & Barnwell, 2006, 162)

2.4 Theory size - structure

Although there are multiple arguments regarding the measurement of organizational size, the number of employees proves a direct relationship with other size indicators such as net assets. Robbins & Barnwell (2006) describe organizational size as "the total number of employees in an organization" (P.183) and discusses the relationship(s) between size and complexity, size and formalization and size and centralization. Peter Blau is a large advocate of this matter and claims that "size is the most important condition affecting the structure of organizations." As there are no explicit theories mentioned in the textbook, the number of employees and assets sufficiently describes the size of the Twentsche Kabelfabriek. However, the European Commission published a measurement device to determine organizational size, which will be used in this analysis. According to their website, a company is small when it has less than 50 employees or less than 10 million euros in turnover, and is medium sized when it has more than 50 employees but less than 250 employees and up to 50 million euros in turnover. A company is considered large when it has up to 1,000 employees and over 50 million euros in turnover.

3. Methodology

3.1 Operationalization of structure

Structure can be split up into four main dimensions: complexity, formalization, centralization and coordination. To determine the extent of the aforementioned dimensions, an interview was conducted with the organization's director.

First, to find out the degree of complexity in the Twentsche Kabelfabriek's structure, questions were raised regarding the existing amount of management layers at the company, how wide the span of control of managers is and in how many countries they operate. For the sake of simplicity, three layers of management will be considered as a low level of vertical differentiation, four departments will be considered as low horizontal differentiation. A span of control of less then five people will be understood as narrow; the higher the span of control, the more complex the organization. Lastly, a company operating in a single country is not spatially dispersed.

Secondly, in terms of formalization, questions were asked about the implementation of rules and regulations and the presence of fixed procedures in the production process. The first question asked was; to what extent do employees face rules and regulations in their daily work? If the employees are obliged to certain regulations TKF has a formalized structure.

Thirdly, to get to know the extent of centralization, the question asked was; where does the decision-making take place within the organization? When the decisions are made in one single point, the decision-making would be centralized, but when more people at different levels can make some decisions then it would be rather decentralized.

Lastly, regarding coordination, the questions asked were; how do departments collaborate and how does important information reach the workers? When there is a lot of communication, coordination is high, but when there is little communication, coordination is low.

3.2 Operationalization of environment

For organizational environment, the questions related to environmental complexity and rate of change. The first question raised was relevant to both complexity and rate of change; "How do politics and laws affect business in the Netherlands?" A complex environment will have many rules and regulations effecting the company

The second question was relevant to the environment's complexity; "Who are the main competitors in the fiber cable market?" TKF mainly competes with KPN, however they recently slowed down production on fiber cable and instead focused on VDSL. Regardless, the Twentsche Kabelfabriek has an approximate 60% share in the market, although an increasing amount of small-scale competitors are entering the market. The third question was relevant to the complexity and rate of change; "What effect do these competitors have on business in the Netherlands?" The representative stated that TKF has an advantage in the cable market because they can adjust their strategy to focus on differentiation, cost-leadership or focus, which is a combination of the two. TKF provides the customers with the entire package, which could essentially save money or add value, and the company can be more innovative than competition, also a benefit of housing entire production process of cables.

3.3 Operationalization of technology

The two dimensions described by Perrow are task variability and problem analyzability. To analyze the technology used by the telecommunication business TKF, the company is split into two different departments, production and the customer-service. In order to be able to describe the task variability an employee faces in his daily-work routine, the TKF representative was asked how many different tasks an employee of the different departments performs during a normal day of work and to which extent each work day is identical. Based on his answer, it was possible to divide the task variability into low and high task variability. Low task variability is the case if there are few different tasks, which are the same every day. High Task variability is the case if there are many different tasks, which change every day. In order to describe problem analyzability of the tasks performed by employees of a certain department, the interviewee was asked if there are many potential eventualities and, when a problem occurs, whether there is a standardized procedure to manage it. This allows the differentiation of problem analyzability into well and ill defined. Well-defined problems are similar in nature and imply that the solution is known in advance. On the other hand, ill-defined problems are diverse in nature and require a custom made solution.

3.4 Operationalization of strategy

To be able to compare TKF's strategy with Porter's competitive strategies the presence of the following three principles cost-leadership, differentiation and segment has to be established. To say something about cost-leadership we asked in which way TKF manages their production process and if they focus on low costs. A strategy focusing on minimizing costs would imply Porter's cost leadership strategy. However a focus on quality and customer relation would than imply a differentiation strategy. To say something about this differentiation strategy we asked about TKF's implementation of accomplishing customer relations. What kinds of services are offered? How is the product's quality guaranteed and how is the implementation different from what competitors do?

By asking these questions we are able to discern between Porter's differentiation and cost-leadership strategy. To distinguish TKF's strategy as a focus or a non-focus strategy we need to determine the size of its segment. By asking if TKF exclusively focusses on a specific kind of customer or if they deliver to any customer who potentially wants to buy a cable. When the organization does not differentiate in which customers it will and will not deliver, we could state that the organization is not practicing a focus strategy.

3.5 Operationalization of size

During the interview, one question seemed relevant in order to find out the number of employees in the Twentsche Kabelfabriek: "Approximately, how many employees are currently working at the company today?" which was answered to be roughly 360 people. Another question relevant to organizational size was "How did the economic slow-down in 2008 affect the Twentsche Kabelfabriek? Did the company have to downsize, at all?" The representative of TKF stated that the Telecom Division was not significantly impacted by the slowdown, although copper production did decline 10-20% during that time. Unexpectedly enough, business for the Twentsche Kabelfabriek actually increased in 2008.

3.6 Reflection on data collection

The data collected for the analysis of the Twentsche Kabelfabriek could be described by its extent of reliability and validity. First of all, reliability is the amount of random error that affects a measurement. Concerning the reliability of our measurement, both the interviewee and Wim Bank, the director of TKF, gave similar perspectives regarding the structure and the contingencies of TKF. As data was only collected on one point in time the change in structure and contingencies was not measured. This can lead to unreliability. Second of all according to Dooley (2009) validity refers to "the appropriateness, meaningfulness, and usefulness of the specific inferences" resulting from the analysis.
Validity can be split up into four categories: measurement, external, internal and statistical conclusion validity. In terms of measurement validity, data information gathered from multiple sources located in different levels of the hierarchy would significantly increase validity. The perspectives of the sources only provided limited information about certain topics such as technology answers as their expertise are elsewhere. Someone with more expertise would have provided us with more elaborate information. Considering the limited time frame and limited sources, information validity as a result was also restricted.

4. Organization Structure

4.1 Complexity

Structure considers the degree of complexity, formalization and centralization within an organization. Complexity involves of vertical differentiation, horizontal differentiation and spatial dispersion. First of all, the vertical differentiation of the Twentsche Kabelfabriek has several layers of management. At the top of the hierarchy is the Director SBU Telecom who is responsible for two department directors. Each of these directors supports their department and supervises the managers 'below' them. These managers then have their own responsibility and direct the directors of the branch below them. These directors to do same with their own department and they also direct the employees. However, TKF does not have a lot of sub-managers, which explains its rather limited vertical differentiation. Secondly, the horizontal differentiation of the Twentsche Kabelfabriek more extensive as explained earlier, the managing director has a span of control of two directors, as there are two different departments, as shown in the chart below. Thirdly, spatial dispersion is also quite elaborate in this organization. In terms of formalization, this company relies on mass-production and manufacturing. It has two factories; one in the Netherlands and another in China. Both of these have their purpose; the factory in China mainly mass-produces fiber and cables while the factory in the Netherlands mainly focuses on putting the fiber and the cable together for the Western European and Nordic markets. So, all in all we could say that the complexity of TKF is relatively low, because TKF doesn't have many layers and departments and, even though it has factories in two different countries across the world, the spatial dispersion is not really high.

4.2 Formalization

About the rules and guidelines TKF has, we know that there are a lot of them when it comes to the technology, because the production process has a lot of rules that the employees have to follow. This is necessary, because otherwise mistakes will be made and the customers won't be happy with TKF anymore and start buying products somewhere else. Customer service also has a lot of guidelines that the workers have to follow, because TKF thinks that their customers are very important and wants their relation with customers to work well. Because of this you could say that formalization is relatively high, because the workers have to follow a lot of rules when producing the cables and negotiating with customers.

4.3 Centralization

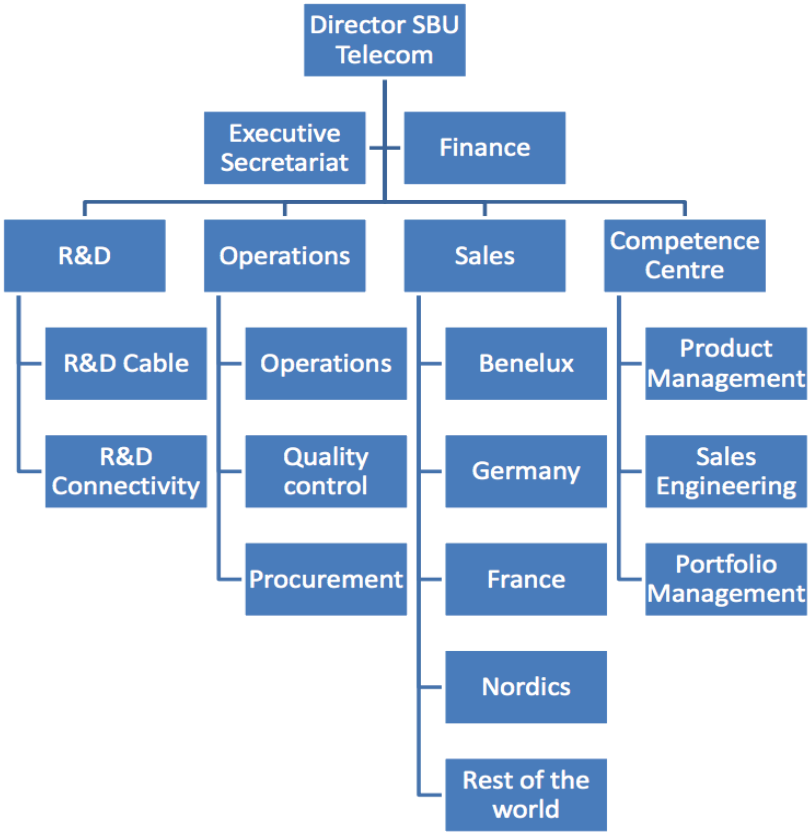
Regarding the level of centralization within TKF, every department can make their own decisions up to a certain degree. Therefore they have to report to their manager every month. The important decisions, however, are still made on the executive level and passed down to the departments and employees. Therefore, you could say that TKF is rather decentralized, because decision-making isn't only done by an important manager, but also by workers on the floor. However, important decisions are still made by top management.

4.4 Coordination

For an organization like the Twentsche Kabelfabriek, communication and coordination are important to organizational effectiveness. Therefore departments keep informing each other about what their progress is or what they need. As an effort to keep all employees and managers well informed, the departments often meet quarterly and at least once every year there is a meeting with the employees to inform them and to discuss with them about things that could improve. These meetings occur more often

when there is important information that the employees need to know in order to do their job right. Because of all this, you could say that the coordination is high for TKF, because all of the workers and managers communicate a lot with each other.

Figure 1.0 – Organizational Structure of the TKF



*Adapted from the TKF website

5. Analysis of Fit Between Environment and Structure

5.1 Description

In the analysis of the fit between environment and structure, Robert Duncan's theory was most applicable. As stated in the theory, complexity of environment is the elements that play a role in it and rate of change is to what extent the environment is changing, either dynamic or static.

The first question raised was relevant to both complexity and rate of change; "How do politics and laws affect business in the Netherlands?" The representative answered that TKF is highly responsive to its environment, which is a result of frequent research for predictions about the environment. This allows the company to plan and prepare for the future, which is a valuable asset in an environment highly dependent on regulations and legislation. Since legal issues can change rapidly and play a large role in the cable market, the environment would then be considered as dynamic, as it changes over time.

The second question was relevant to the environment's complexity, "Who are the main competitors in the fiber cable market?" TKF mainly competes with KPN, however they recently slowed down production on fiber cable and instead focused on VDSL. Regardless, the Twentsche Kabelfabriek has an approximate 60% share in the market, although an

The third question was relevant to the complexity and rate of change; "What effect do these competitors have on business in the Netherlands?" The representative stated that TKF has an advantage in the cable market because they can adjust their strategy to focus on differentiation, cost-leadership or focus, which is a combination of the two. However, an increase in competition leads to an increase in complexity and uncertainty. As a matter of fact, recently an increasing amount of small-scale competitors are entering the market, thus directly increasing the complexity.

5.2 Prescription

Duncan created a table that identifies environment to be either dynamic or static and structure to be complex or simple, in order to form an environment-structure relationship. This table then provides the level of uncertainty, along with structural elements and examples. For example, a Telecommunication company faces a dynamic environment with high uncertainty and requires a complex structure to manage. A complex structure would consist of decentralization, high resource coordination and extensive planning and preparing for future events. Since the Twentsche Kabelfabriek is a telecommunication company, these characteristics therefore describe its environment and structure. First of all, the structure for environment in terms of complexity has to involve "extensive planning and forecasting" (Robbins and Barnwell, 2006). In order to accomplish this either high or low complexity could be appropriate. Secondly, TKF in its current environment requires high formalization and job standardization to remain cost-efficient. Thirdly, in terms of centralization, the Twentsche Kabelfabriek should have many different departments and allow manager decision making. (Robbins and Barnwell, 2006). In short, TKF should be decentralized. Lastly, the best structure in terms of coordination would be "extensive integration mechanisms and use of coordination and liaison roles" (Robbins and Barnwell, 2006)

5.3 Fit or misfit?

The Twentsche Kabelfabriek showed multiple characteristics that can be compared to Robert Duncan's theory in order to evaluate whether the structure of TKF is appropriate given its current environment. First of all, Duncan claims that the appropriate structural complexity is high, implying high horizontal and vertical differentiation, along with spatial dispersion. This does not necessarily correspond to the Twentsche Kabelfabriek's complexity because they have a less complex structure. This structure consists of low vertical and horizontal differentiation; along with limited spatial dispersion as the target market is generally in Europe. Secondly, for a telecommunications company, Duncan stated that high formalization would be most beneficial. This corresponds with the formalization of the Twentsche Kabelfabriek because the production process is highly reliant on technology and procedures. Thirdly, TKF is a decentralized company because it has several departments that are allowed to make decisions when appropriate. Duncan's table also agrees that a company in a dynamic environment requires decentralization to ensure survival. Lastly, Duncan states that a company in this context requires high integration and coordination of resources. The Twentsche Kabelfabriek does, in fact, use coordination extensively in order to deal dynamic with its dynamic environment. In conclusion, the structure does generally fit the environment as has been described, comparing the practical structure to Duncan's appropriate, theoretical structure. The only change TKF could make is to expand and elaborate the organizational complexity.

6. Analysis of Fit Between Technology and Structure

6.1 Description

Production process

During the interview we were told that the production process of TKF is highly standardized. TKF's is highly focused on quality, which requires high precision. Therefore we were told that there are few problems in production that can arise, and if a problem comes up everyone knows how to deal with it as problems that can come up, they are few in numbers, and often of the same kind.
We therefore conclude that problems are well defined.
Employees are trained to perform a specific task which they can do fast and precise. Examples which were given are quality control, tubing and coloring of cables. A worker performs this task every day.
Because of the limited amount of tasks and no changes within task variability is low.

Customer service

The customer service department deals with specific needs and wishes of customers. Those can differ a lot. Nevertheless employees have a fixed procedure to deal with it. Problems that can occur are known in advance and there is a solution at hand. We therefore conclude that problems are well defined. Employees act within a certain procedure to fulfil the needs of customers. There are many different points which have to be discussed and therefore work procedures can vary, as the solution finding process can take a long time and every day looks different. Task variability in this department can therefore be described as high.

By putting together the two dimensions task variability and problem analyzability for each department we get to the conclusion that there are two different technologies used by Twentsche Kabel Fabriek. The production department can be called a routine-technology. Task variability is low and problems are well defined. The customer-service department can be called an engineering technology. Task variability is high and problems are well defined.

6.2 Prescription

To take a look on the perfect structure for the technology used by TKF we again have to divide the structure in two parts; the appropriate structure for the production and for the customer-service department. We defined structure along four dimensions: complexity, formalization, centralization and coordination. Perrow describes the perfect structure for routine technology, which we identified in the production process, as low in complexity, highly formalized, highly centralized, with a low degree of communication. For an engineering technology, which TKF uses in their customer-service department, on the other hand formalization is mend to be low, centralization high, low complexity, a moderate span of control and there has to be a medium degree of communication (Robbins and Barnwell, 2006. p. 218).

6.3 Fit or misfit?

To take a look on the fits and misfits of TKF's technology and the structure it has we will again split this up in two parts; the production and the customer service.

Production Process

A routine technology requires a low degree of complexity. Basing on the analysis and theory, the structure concludes that the structure of the production process is low in complexity. It has a limited amount of management layers as one shift leader over sees production, having a high span of control.

The formalization of the production process has to be high in order to make a perfect fit with what is required from the theory. In the cable production every work step is standardized and therefore has a high degree of formalization.

The decision making process of TKF in general is rather decentralized. But as we focus on the production process it is centralized, as workers do not have the power to make decisions themselves. The shift leader gets the instructions based on which cable is required and then implements what everyone has to do. Decision making in production is centralized and therefore in line with the theory. Regarding coordination a routine technology has to have rigid planning and rules and has to be low in theory. In practice however TKF states itself to have a high degree of coordination because they want to ensure a high quality of cables that are produced. Interaction between quality control, production and research is high. In this case the structure is not in line with the theory.

Customer service

We identified the customer service department to be an engineering technology. This requires a low degree of complexity, which we found out to be the case at TKF. The formalization of customer service should be low according to the theory. As we found out that employees in this segment a set of guidelines to follow in order to satisfy the customer. The formalization can therefore not be called low. In this section the structure of the customer service is not in line with the theory. We could not find out how decisions are made in the customer service department. However from the impressions we got during the factory tour we think that centralization of decision making is rather low in order to be able to react immediately to customer needs. It would then be a misfit. The coordination with other departments should be high in an engineering technology. The coordination of the customer service with other department is also high as the production has to manufacture the cables required by the customer.

7. Analysis of Fit Between Strategy and Structure

7.1 Description & Prescription

During the interview, the representative of the Twentsche Kabelfabriek described the strategy of TKF as a "two-track model". It basically is a combination of a cost-leadership- and a differentiation-strategy that can be adjusted to a particular environment as an effort to maintain efficiency and effectiveness. The Twentsche Kabelfabriek focuses on high quality cables in large volumes, for this approach the organization may choose to maintain cost-leadership to lower prices. On the other hand, to obtain a high profit margin, TKF gains personal agreement with their clients by developing and offering the total solution a client needs. Everything between the first connector to the last connector is being delivered and through this differentiation strategy TKF acquires high margins between 10 to 12%. The two-track model is not only enabling a high margin, it also facilitates efficiency in the production of the cables, as it is a hybrid version of cost-leadership and differentiation.

For the question in which way TKF manages their production process and if they focus on low costs. Bank as well as the representative stated that to compeed in an environment as TKF, a constant focus on being cost-leader is needed to be profitable. The representative added that fellow cable manufacturers who are mainly focusing on bulk production of cables with a cost-leadership strategy normally are able to obtain a profit margin of 1 to 2 percentiles. Organizations who don't focus on cost-leadership will not survive in this business.

Secondly we asked about TKF's implementation of accomplishing customer relations. The representative described this process as a collective collaboration between supply and demand. TKF holds session with its client to supply on their full demands. TKF provides the cables, the installation and the repairs. This means that other companies (competitors) contribution is excluded and therefore a client is committed to TKF. Other cable manufacturers exclusively provide the cables, which are installed by a different installation company. An advantage of TKF's strategy in this matter is that it can be able to guarantee a warranty of 20 years on its product, where other companies are only providing limited warranties.

Lastly the market segment of TKF is examined. Bank explained that TKF maintains a market share of about 60% in the Netherlands. This in contrast to China, where TKF only focuses on production and only has sold a 'couple of thousand' kilometers of cable. Further market expanding has been made in Germany, France, Poland and Spain. When taking these facts into account one can conclude that TKF is looking to supply the cables to a broad segment which is expanding. Therefore we can state that it does not handle a focus strategy.

Porter states that 'No firm can successfully perform at an above-average level by trying to be all things to all people.' (Robbins & Barnwell, 2006, 162) Where he explains that to be successful an organization needs to choose between the different competitive strategies. According to the theory of Porter TKF should be, by choosing to be both a cost-leader as an differentiator, not performing successfully. On the other hand Porter describes that a company 'should avoid a position in which it has to compete with large number of competition' (Robbins & Barnwell, 2006, 162), which TKF does with its unique 'Two-track'-strategy.

In conclusion, TKF handles both a cost-leadership as a differentiation strategy. These two strategies alternate whenever the supply and demands of the customer asks for it and have been proven highly profitable. Although TKF its strategy does not entirely fit with Porter's ideas of competitive strategies it has been proven to be effective for TKF and therefore successful.

7.2 Misfits/Fits

When looking at the fit between TKF's strategy and its structure one has to differentiate between the structural features of a cost-leadership strategy and a differentiation strategy.
According to Robbins and Barnwell cost-leadership has the goal to become efficient by applying tight controls, low overheads and economies of scale. These features are characterized by a high complexity, centralization and formalization. The differentiation strategy on the other hand is based on the manufacturing of unique products or services. Which is achieved by being highly flexible which is characterized by maintaining low complexity, formalization and centralization. Because TKF applies both the cost-leadership strategy as the differentiation strategy it needs to be disposed of both high and low features in complexity, formalization and centralization.

Within the context of complexity one can state that TKF is highly complex when looking at the spatial dispersion it has established e.g. the production company in China.
The biggest market share however is founded in the Netherlands, which points to low special dispersion. These two characteristics of high and low complexity are proof of a strong structural fit between the practiced and theoretical cost-leadership and differentiation strategy.

Regarding the formalization one can state that TKF's formalized production process fits the high formalization characteristics of a cost-leadership strategy. However the flexible supply and demand strategy TKF applies for its customers is a strong feature of low formalization.
Again, applying both the cost-leadership and the differentiation strategy results in an effective collaboration between high and low formalization features and therefore has a good fit on both the theory as practice.

The decision making in TKF is accomplished by top management. They have to give account to the TKH group and are therefore restricted in their power. One can state that the high centralization characteristic of the cost-leadership strategy is applied here. Which fits with the structural features of Porter's theoretical cost-leadership strategy.

Despite its high centralization, TKF's top management is able to gather a broad input of business ideas due to a close collaboration between the different departments. In this way the top management which is bounded by the TKH group still manages to accomplish deliberate decisions. This close collaboration between departments is a characteristics of high coordination. And therefore TKF's differentiation strategy fits the theoretical differentiation strategy

8. Analysis of Fit Between Size and Structure

8.1 Description

During the company interview the company representative was asked how many employees TKF has and whether they had any part-time or seasonal workers. He estimated that the Telecommunications department at TKF has 450 employees of which 360 work in the manufacturing department. Peter Blau stated 'size is the most important condition affecting the structure of organizations', he concluded that increasing size promotes structural differentiation at a decreasing rate. According to the European Commission, TKF would therefore be a large company because it has more than 250 employees but less than 1000.

8.2 Prescription

The appropriate structure for TKF's size in terms of complexity would include medium to low horizontal differentiation, medium spatial dispersion and low vertical differentiation. First of all, TKF has medium-low horizontal differentiation because employees experience low task variety, focused responsibility on a certain part of the manufacturing process, or a certain part of management (sales, marketing etc.). According to Robbins and Barnwell, organizational size and differentiation are directly related; therefore a large-scale company should have high horizontal differentiation. Secondly, medium spatial differentiation to produce cables cost efficiently but also rapidly when special developments take place (e.g. sudden demand by customers or changes in technology). Lastly, low vertical differentiation is essential to the structure in order to make the necessary decisions in a short amount of time. According to Robbins and Barnwell, is a positive relationship between size and formalization, meaning that as size increases, the extent of formalization will, too. The amount of standardization best fit for TKF's size would be high formalization since the production of cables has not changed recently, each cable only differs in the amount of fibers. The extent of centralization appropriate for a large company would be high, since there are no predicted new developments in the cable-manufacturing sector and because decisions are made at top-management and passed down to employees and customers. The amount coordination appropriate for TKF would also be high, as raw materials are obtained from Asia and close communication is needed to maintain production and avoid any shortages.

8.3 Fit or misfit?

First of all, the theoretical structure best fit for a large company such as TKF would have low complexity.In terms of spatial dispersion TKF's practical form corresponds with the theoretical dispersion because TKF has a factory in Haaksbergen focusing on short-term orders and a Chinese factory working on long-term customers. The horizontal differentiation that is theoretically best fit is similar to the amount of actual horizontal differentiation in TKF.

Concerning the vertical differentiation, the prescribed and actual structure of TKF is also the same. With this complexity, TKF is able to respond in a short amount of time to immediate needs of customers. The current structure of TKF is also the most suitable one regarding their degree of formalization, since the production of cables is highly formalized, automated and has not experienced any major changes in the last couple of years. In terms of centralization, the practical and theoretically recommended structure is also similar. TKF's cable production process has limited necessity for decision-making, as the extent of autonomy in the production process of the cables is high. Every major decision is

made at top management, however shift managers have limited permission to make decisions. When it comes to coordination the theoretical and actual structure are also similar. TKF's different departments communicate rather informally as people from management personally know workers in the production plant. Moreover, they are in close contact with their production plant in China to keep the quality high and the supply of raw materials steady. TKF has an appropriate amount of employees for their level of technology, since the whole production process is highly formalized and automated, not a lot of employees are required. Few workers are needed to maintain the equipment, test the quality of the cables and take care of distribution/shipping.

9. Organizational Effectiveness

9.1 Overview of Fits and Misfits

Table 1.0 Analysis of TKF

	Complexity		Formalization		Centralization		Coordination	
Environment: high uncertainty environment	Theory high	Practice low	Theory high	Practice high	Theory low	Practice low	Theory high	Practice high
Size: Large	Theory low	Practice low	Theory high	Practice high	Theory low	Practice low	Theory high	Practice high
Technology (production process): routine technology	Theory low	Practice low	Theory high	Practice high	Theory high	Practice high	Theory low	Practice high
Technology (customer service): engineering technology	Theory low	Practice low	Theory low	Practice high	Theory high	Practice low	Theory high	Practice high
Strategy: cost-leadership strategy	Theory high	Practice high	Theory high	Practice high	Theory high	Practice high	Theory low	Practice high
Strategy: differentiation strategy	Theory low	Practice low	Theory low	Practice low	Theory low	Practice high	Theory high	Practice high

*Chart design inspired by Matthias De Visser

9.2 Implications of misfits between contingencies and structure

Environment: Complexity

According to Duncan, a company such as the Twentsche Kabelfabriek should have high complexity. However, as we can see in the table above, TKF has low complexity. This essentially has an effect on the company's ability to react and adapt to the environment, which high structural complexity prevents. In context to Robbins and Barnwell's goal-attainment approach, the effect of increased complexity would allow a company to achieve its goals more effectively. For example, it would give TKF an advantage over its competitors being able to cope with environmental changes more rapidly.

Technology: Coordination (production process)

According to Charles Perrow, a company with advanced technology and machinery should have low coordination. Although, the Twentsche Kabelfabriek has high coordination, meaning that they can communicate too extensively, spending too much time discussing when an actual decision needs to be made. In terms of the goal-attainment approach, the relevant goals in a company's production process are usually to minimize costs and maximize efficiency. Spending more time on production will increase costs. However, a high degree of communication can guarantee high quality cables, which is exactly one of the goals of the Twentsche Kabelfabriek.

Technology: Formalization and Centralization (customer service)

According to Perrow, a company like TKF should have low formalization and high centralization; however, this company has the exact opposite. First of all, low formalization describes dependence of rules and regulations in customer service. Using procedures can guarantee a specific level of outcome; therefore adjusting regulations will affect results. In terms of the goal-attainment approach, if TKF's goal is to provide a better service for customers, such as providing the entire package for cables, they can improve their procedures of finding solutions.

Secondly, the extent of centralization explains where the decision-making takes place in a company. In the Twentsche Kabelfabriek, the structure is rather decentralized because of their informal communication with clients and managers. Effectiveness in terms of the strategic constituency approach is based on the satisfaction of constituents, shareholders and customers. However, TKF's low level of centralization of customer service could be appropriate, taking the informal communication into account, because communication and decision-making will be done more rapidly.

Strategy: Coordination (cost-leadership)

According to Porter's cost-leadership strategy, a company such as the Twentsche Kabelfabriek should have low coordination in order to minimize costs. In terms of goal attainment, the goal is to minimize cost. However, this is still achieved through the careful decisions made by top management, as a result of high coordination.

Strategy: Centralization (differentiation)

According to Porter's differentiation strategy, the Twentsche Kabelfabriek should have low centralization, although centralization is high. This is because TKF is the 'daughter-company' of TKH, which restricts their power in terms of decision-making. In the context of the strategic constituency approach, high centralization is appropriate for TKF because it provides certainty and predictability of output to the constituents.

9.3 Implications of fits between contingencies and structure

Environment

Robert Duncan stated that a company similar to TKF should have high formalization, low centralization and high coordination, which exactly reflect their practical structural elements. This has a positive influence over the company's capabilities in terms effectiveness and its ability to attain goals. TKF can attain the goals it sets because due to high coordination and formalization, it can predict its outputs and productive capabilities, like efficiency or minimization of costs.

Size

Robbins and Barnwell state that a company such as TKF requires low complexity, high formalization, high centralization and low coordination. There was a complete fit between the theoretical and practical structure compared to organizational size. Since theoretically each structural element reflects that of the analyzed company, it should attain the goals set because it has adapted completely to its target market.

Technology

The technology of the production process of TKF fits to the theory of Perrow in terms of complexity, formalization and centralization. This guarantees a high amount of outputs by minimal input. Workers can work efficiently as they know the exact procedures of their work. As complexity is low the focus lies on efficient production of high quality goods. Effectiveness in the context of the strategic constituent approach, high quality products provide satisfaction to customers.

The technology of the customer-service is in line with the theory in complexity and coordination. The low degree of complexity and the high degree of communication increases the focus on the customer, which is one of the stated goals of TKF. Hence, the company should be effectiveness according to the goal-attainment approach.

Strategy

For the cost-leadership strategy and the different strategy there is a fit in case of complexity and formalization. As TKF applies different strategies in different situations the formalization differs between strategies. The high degree of formalization regarding the production makes it possible to produce goods at a low price if needed and the low formalization makes it possible to react to specific needs of customers when the differentiation strategy is applied. Regarding complexity the high complexity makes it possible to produce at low cost, as the Chinese production plant can manufacture cables at a low cost. In case of the differentiation strategy low complexity makes it possible to interact with the customers in an effective manner.

10. Conclusion

The Twentsche Kabelfabriek is a cable manufacturer based in Haaksbergen with a factory in China. The main focus of this project was to find the fit between the theoretical contingencies and the practical structure of this company. This research was conducted through a company tour, a presentation from the Director of Telecommunications, Wim Bank, and an interview with a company representative. The contingencies measured were organizational size, environment, strategy and technology. These contingencies were further on compared to the structure of TKF in order to justify a fit or a misfit.

First of all, Robert Duncan's theory was used in order to compare his research to the actual environment of the Twentsche Kabelfabriek. He defines environment along two dimension, rate of change and complexity. Then, Duncan provides a table explaining which structure is most applicable for each environment. In this case, the theory almost exactly matched Duncan's expectation, except for one misfit relative to environmental complexity. Even though, the complexity of the structure should be higher when facing an uncertain environment, TKF's complexity is low which could potentially have a negative affect on organizational effectiveness.

The second examined contingency was technology, in which Charles Perrow's theory was most relevant to this company. It was his belief that technology differs concerning task variability and problem analyzability. As TKF uses different types of technologies in different departments, a misfit in production was found in terms of coordination. Also, there were two misfits in the department of customer service, formalization and centralization. In this case, the misfits in technology do not necessarily have negative consequences on the company because the organization's focus lies in high quality products, as opposed to cost-efficiency.

The third contingency discussed was strategy, using Michael Porter's approach consisting of three strategies, cost-leadership, differentiation and focus strategy. Cost leadership focuses on minimizing costs, differentiation focuses on customer satisfaction and quality product and focus strategy is a combination of the two managed in a narrow market segment. In contrast to Porter's belief, the Twentsche Kabelfabriek uses a combination of the cost-leadership and differentiation in order to be able to react appropriate to market changes. Therefore, both strategies' characteristics were taken into account, as can be seen on the chart in chapter 9.

The misfit found for the differentiation strategy was centralization; which according to Porter should be low, but in practice is high. The misfits found in cost leadership were coordination, which will negatively affect top management's ability to make deliberate decision. However, these misfits are compensated for by the use of the two strategies.

The last contingency discussed was size, using the European Commissions scale to determine the size of the Twentsche Kabelfabriek. Hence, TKF can be considered as a large company. In this case, no misfits were found between theoretical structural elements and the practical ones.

During this research, few recommendations or potential improvements applicable to the Twentsche Kabelfabriek occurred. The management can consider these and perhaps make adjustments to the organizational structure. First of all, since the TKF operates in a complex environment, it could be beneficial for the organization to increase their complexity, such as horizontal and vertical differentiation along with spatial dispersion. Basically, the company could expand their operation in order to increase organizational effectiveness. However, for the rest there no further recommendations, as each of the misfits identified with this research were each compensated for.

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