EXC 2122
STRATEGIC MANAGEMENT ACCOUNTING

Spring semester 2020
Study guide part two – From Ambitions to Action

DEPARTMENT OF ACCOUNTING AUDITING AND BUSINESS ANALYTICS

Session no. 8 – Value creation and the strategic perspectives

Study week no. 8
Class Thursday February 27, 14:00-16.45

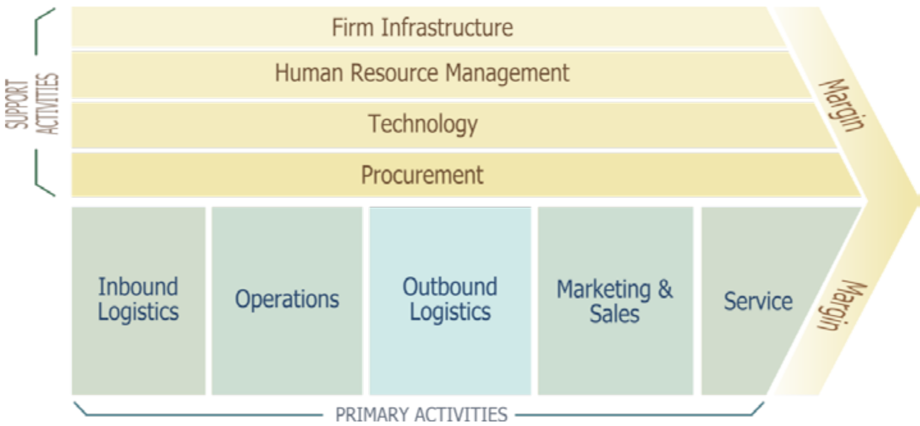
8.1 What is value creation in a business setting?

From a country's macroeconomic perspective, we can say that all activities both in the private and the public sectors add to value creation, because the Gross National Product (GNP) increases.
In a business perspective value creation will first happen when somebody has a *willingness* and *ability* to pay for a good or a service – the value creation is a consequence of somebody selling something that others are willing to pay for, for example:

- A cut diamond has a significantly higher market value than a raw diamond. Few have the necessary competence to cut diamonds and those who have add an increased value to this product.
- A capsule of Nespresso coffee consists approximately 5 grams of coffee and sells for around NOK 3.00 ex VAT. The price per kilo equals around NOK 600. The commodity price for Arabica coffee beans is currently approximately NOK 25 per kilo. The Nespresso technology adds a significant value creation in the production process.
- A luxurious hotel can often charge twice as much per room as an ordinary three-star hotel, if this hotel offers a lot of facilities, such as for instance a spa and wellness area. Although few of the guests actually utilizes these services, they are willing to pay extra for it.

8.2 Approach no. 1: The Value Chain (Michael Porter)

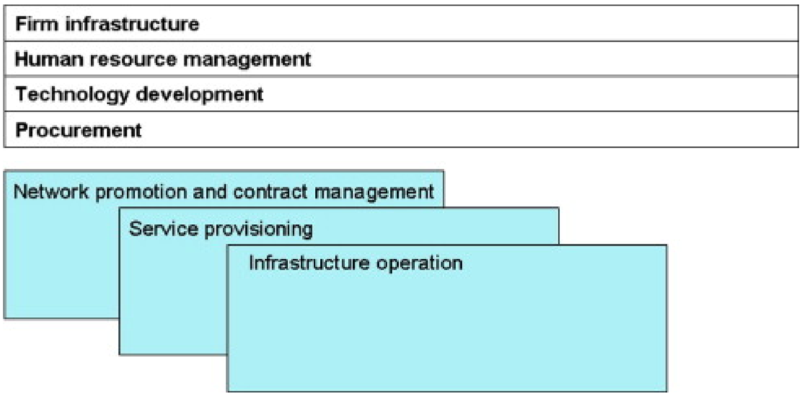
Michael Porter launched in 1985 the concept Value Chain. The Value Chain of an enterprise consists according to his model all the activities necessary to develop, manufacture (in a broad definition of the term), market and distribute goods and services to its customers. Here is a generic presentation:



The primary activities are the activities that directly add to the product that our customers purchase and pay for. The primary activities cannot be carried out without the use of resources on the various supporting activities. These indirectly add to customer value and the value creation. The supporting activities can be regarded as a "necessary evil" from a resource and cost point of view.
We should try to minimize the use of costly resources within the supporting activities and move these resources down to the primary activities. This model is best suited to explain manufacturing processes and other chained technology!

8.3 Approach no. 2: The Value Network (Stabell and Fjeldstad)

Stabell and Fjeldstad came up with two alternatives to the Value Chain in 1998. The Value Network is the first. Here are values created together with various participants in the company's network that all are company stakeholders. Here is a generic model:

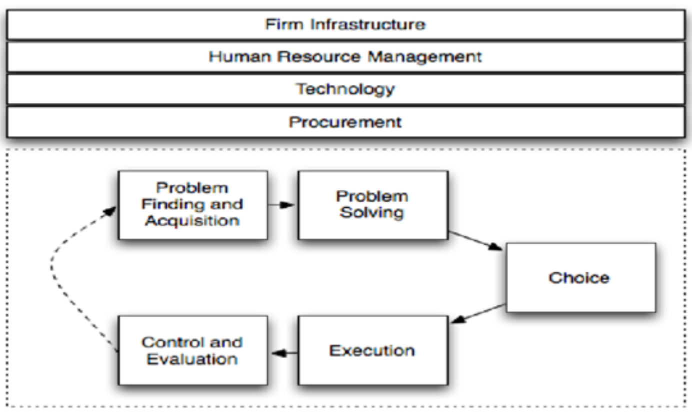


The company's network contributes to the value creation of the company!
First, we build a network of valuable stakeholders, such as our existing and new customers, suppliers and alliance partners, and then we can provide the various services to the market. This is only possible when we secure good operation of our own infrastructure
The Value Network is organized as a "club of members with some common interests" and this network connects customers! Examples of value networks:

- Facebook
- Wikipedia
- Telecom companies
- BI and other schools and universities
- Uber and Airbnb
- Match.com
- Real estate agents
- Banks
- Insurance companies

8.4 Approach no. 3: The Value Shop (Stabell and Fjeldstad)

Stabell and Fjeldstad's second alternative to the traditional Value Chain is the Value Shop. Here the focus is on the customer's need to solve a problem and here is a generic presentation:



The model is best suited to explain what happens in organizations such as:

- Hospitals
- Consulting firms
- Accounting and auditing firms
- Architects and engineering firms
- Law firms

The ability to actually solve the problem seems often to be more important for the customers than the price of the services and a good reputation seems to secure a steady flow of business.

8.5 How can we measure value creation?

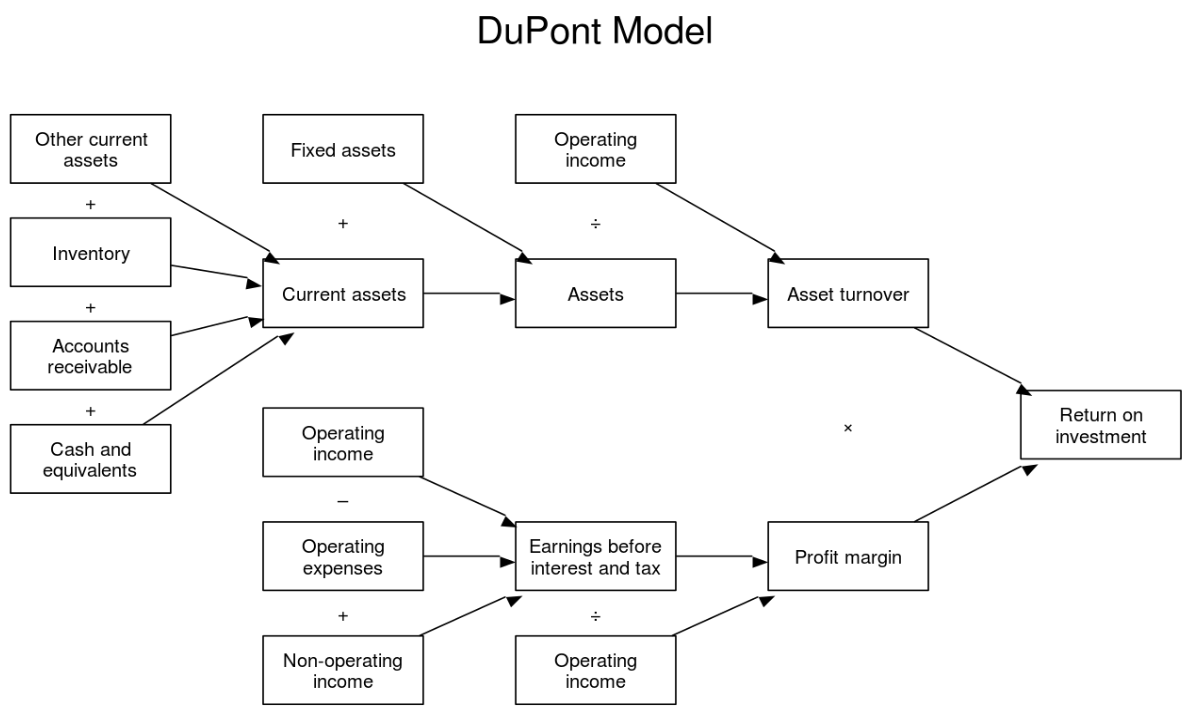
Over the last 10-15 years many companies focus on value creation simultaneously in several areas, not only financial profit for owners. The concept of *the triple bottom line*, which is often referred to in Corporate Social Responsibility planning and reporting, consists of:

- Financial goalsetting - Profit
- Social goalsetting – People
- Environmental goalsetting – Planet

Let us first focus on the financial side of value creation. A common way of measuring financial value creation is by computing the Return on Assets (often also referred to as the Return on Investments).

ROA (ROI) in %	= The asset turnover rate * The profit margin in %
The asset turnover rate	= Income/assets
The profit rate	= Profits/income
Hence, ROA (ROI)	= Profits in % of assets

How ROA is influenced by the asset turnover rate as well as the profit rate is shown in the DuPont model, developed in the chemicals manufacturing company DuPont in 1922 (and still valid):



With "assets" we mean the average asset value over the period we are measuring. Ideally we should use book values for each month and compute the average, but we often simplify by using the average of the opening and closing balance of the book value of the asset totals instead.
The advantage with the ROA (ROI) model is that it measures how all assets of the company contribute to the profits of the company and by adjusting the profit rate by the capital turnover rate we add another dimension to our profitability calculation. There are two important factors that may challenge the validity of the ROA approach:

1. GAAP may impose limitations: The accounting legislation may limit the company's ability to use market values on their fixed assets, as the common valuation method of these is to use historical value, less accumulated depreciation.
2. Valuation is done by outsiders: A company's accounts only reflect the various *transactions* that the company has with its stakeholders; what the company sells to its customers, pay to the suppliers, employers and the authorities. Sometimes the market value of a company is significantly higher than what the booked equity suggests, and this difference cannot be explained by GAAP issues alone.

So, if we should measure the ROA of for instance Amazon it does not make sense to compare profits against the asset totals that the company reports, because the market value of the equity is significantly higher than the book value of the same. With a high price/earnings ratio, the market is willing to pay more than what the company (so far) has reported as profits.

It is possible to make a market adjusted ROA model; we can adjust the balance sheet to the market value and the flip side of this increased equity is an increased profit. However, we will run into some challenges when we shall try to determine when this increased profit happened. Let us look at an example:
A company reports an average asset value of NOK 100 mill in 2018 and because the value of the liabilities was around NOK 80 mill, the booked equity was NOK 20 mill the same year. For 2018, the company reported a profit of NOK 10 mill, so ROA is 10%.
The company knows that a competitor is willing to pay NOK 50 mill for the shares. When we adjust for this the asset total is NOK 130 mill instead. The profit effect of this, NOK 30 mill, can most probably not be attributed to 2018 alone, and although we have adjusted the financial reports, we cannot conclude that the adjusted ROA is (10+30)/(100+30) = 30.77% . In order to find an adjusted ROA, we need to retroactively distribute the goodwill that the company makes along the way, which was not absorbed in the books at the same time. If we for instance have to go back six years to find a situation where the book value of the equity was approximately equal to the market value, we must distribute the goodwill of kr 30 mill over this 6-year period. A simplified model would then add kr 5 mill to profits and equity each year from 2013-2018.

Many companies have a strict owners' perspective on value creation and then the Return on Equity (ROE) is more relevant than ROA. There are three different approaches when we want to measure the value creation for owners

- Return on Equity: Profits in % of average book equity
- The company's ability to produce a positive cash flow that can be paid as dividend to the share holders
- The company market value:
    - In a public company it is the number of shares * the price per share
    - In a company whose shares are not traded publically we need to do a company valuation – we find the "real value" instead of the book equity

8.6 The need to focus on the factors that influence value creation over time

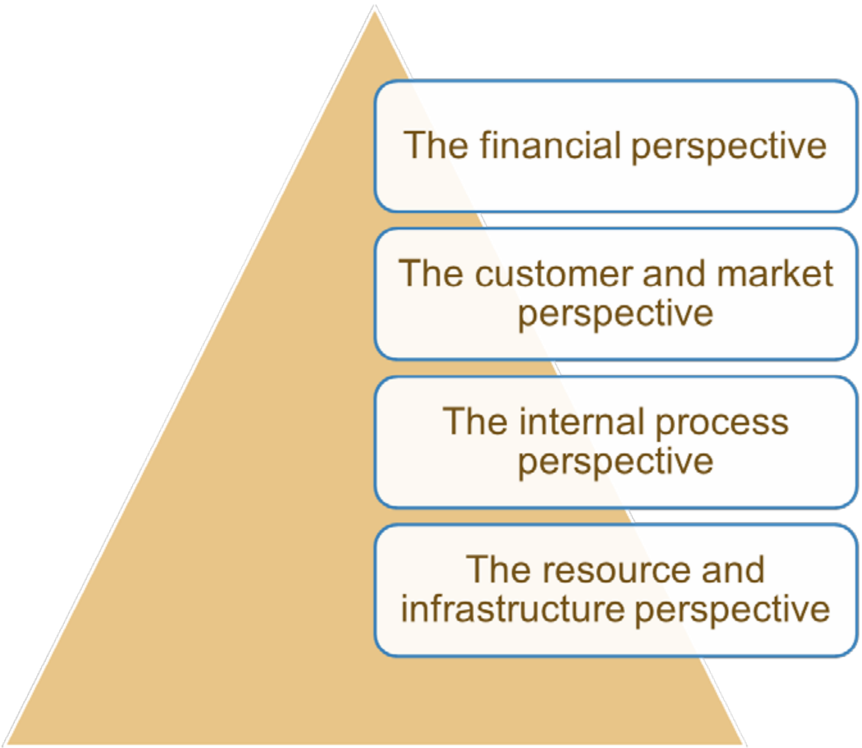
A company cannot just decide to be profitable! Value creation happens as a consequence of success in many areas. We need to focus on these factors, which we can call *value drivers*, and one of the things we need to particularly focus on is how we can measure and improve performance in these areas.

With the Balanced Scorecard model, the company will have a framework for financial performance management that helps us to balance the attention between various non-financial value drivers and how these may influence financial value creation over time. We will then see that a large portion of the value drivers are factors of a non-financial nature and therefore not reported in the company's financial reports, such as for instance:

- Employee skills and competence
- Ability to deliver one time
- Customer satisfaction

We can employ a generic model that describes success factors in four different strategic perspectives. These contribute to the Balance Scorecard framework.

8.7 The four strategic perspectives (Kaplan)



Three alternative descriptions:

- The resource and infrastructure perspective is often referred to as the learning and growth perspective
- The customer and market perspective is often referred to as the external perspective
- The financial perspective is often referred to as the owner perspective

In each of these four perspectives, we will find various factors that are relevant for most companies. Let us start by looking at some of these *generic success factors*:

The Resource and Infrastructure perspective
- Sufficient production and administrative capacity
- Development of relevant competence and skills
- Development of satisfied and motivated workers and teams
- Development of networks, relations and alliances
- Product and technology development
- Good internal control systems, low risk concerning health, environment and security
- Databases, procedures, securing information and data.

The internal process perspective
- Increased production effectiveness
- Increased quality
- ICT and production systems stability
- Ability to deliver when agreed
- Waiting and/or transportation time

The customer and market perspective
- Customer satisfaction
- Customer loyalty (returning customers, customer recommendations to others)
- Brand recognition
- Market perception of the company and its product (image)
- Reputation (known for high quality, good service or competitive prices)

The financial perspective
- Gross margins/contribution margins
- Rate of return on sales
- Return on Assets
- Return on Equity
- Optimal net working capital
- Optimal gearing
- Ability to generate a positive cash flow
- Ability to generate dividend to owners
- Development of company's market value

In addition, there will be success factors that are more company specific, depending on for instance:
- The company's size and complexity
- The industry and markets that the company compete in
- The level of strategic ambitions
- The strategic targets

If the success factor is of such a nature that it is a necessary element for the organization to achieve its overall and long-term goals, we call these critical success factors. We are then moving from "nice to have" to "need to have". In order to succeed with the financial performance management, the company must be able to extract the various critical success factors from its strategy plan and try to find parameters that can measure to what extent the company has gained control over these factors. We call these parameters Key Performance Indicators, shortened KPIs. More about these later!

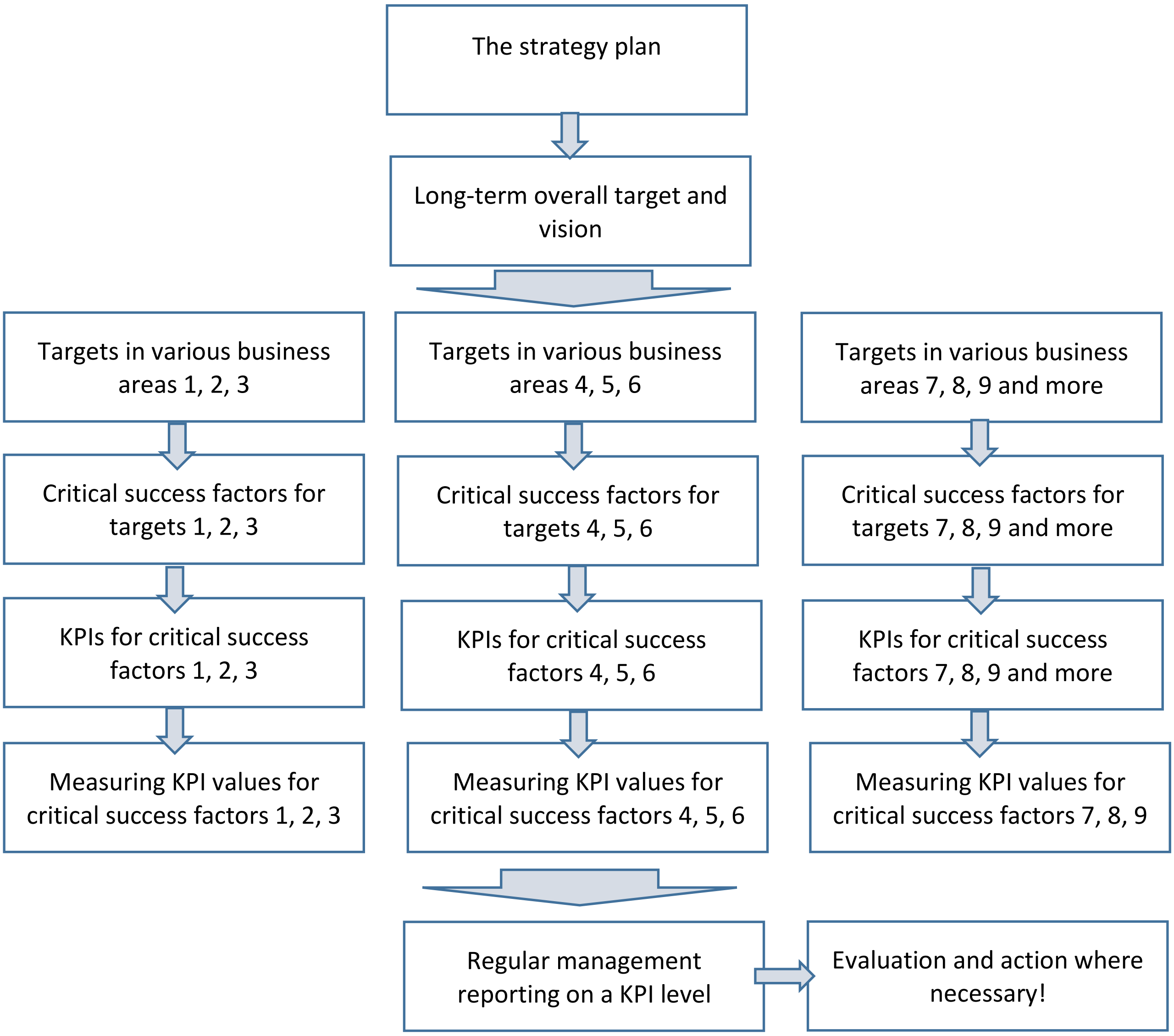
Session no. 9 – The Balanced Scorecard – from strategy to action

Study week no. 9:
Student exercise seminar Thursday March 5, 17:00-20:00
Class Friday March 6, 08:00-10.45
Seal, Rohde, Garrison, Noreen: Chapter 16
Articles: Kaplan & Norton 1992 and Kaplan & Norton 1996
Video: The Balanced Scorecard – a conceptual framework

9.1 The Balanced Scorecard as a concept for management control

The Balanced Scorecard helps us to have a constant focus on how successful we are in implementing our long-term and overall business strategies. The model was presented in its initial form in 1992 and has been developed further, both by the authors Robert S. Kaplan and David P. Norton, as well as by thousands of business entities and organizations in the public sector.

The model is based on the following structure:



9.1 From strategy plan to targets

The Balanced Scorecard model will not work without a clear-defined strategy plan for a given period. From this plan we shall be able to derive:

- One long-term overall goal: This is often (but not always) related to financial value creation, and will therefore be expressed as Return on Assets, Return on Equity, the company's market value or ability to generate dividend to its owners
- Several targets in various business areas: These areas are related to the four strategic perspectives and can be placed within the financial area (sub-targets which may lead to the overall financial goal), the customer and market area, the internal processes as well as within the resource and infrastructural area
- Short term vs. long term targets: For each of these targets we will expect positive development over time, towards the end of the planning period. If we know where we are going to be at the end of year 2023, where should we expect to be for instance 31.12.2019 or 31.12.2020?

9.2 Critical Success Factors

In Enterprise Risk Management we focus on things that we don't want to happen (risk factors), because negative events may influence value creation in a negative way. However, we must also have a parallel focus on things that must happen, conditions that have to be met in order to see our visions come through.
A critical success factor is any element that is necessary for the organization to achieve a certain target, and we must then focus on "need to have" instead "nice to have". In order to achieve our overall and long-term target, we need to succeed in different areas and there will therefore be a number of various critical success factors that we need to gain control over in this process.

For each of our various target in the different business areas we must be able to define *at least one* critical success factor, but sometimes we have to succeed in more than one area to achieve our goal. Here is an example: A real estate company wants to exploit its revenue potential to a maximum. Three critical success factors will then be:

- Average rent per square meter
- Vacant space in per cent of total available rentable space
- The average duration of the contracts with the various tenants.

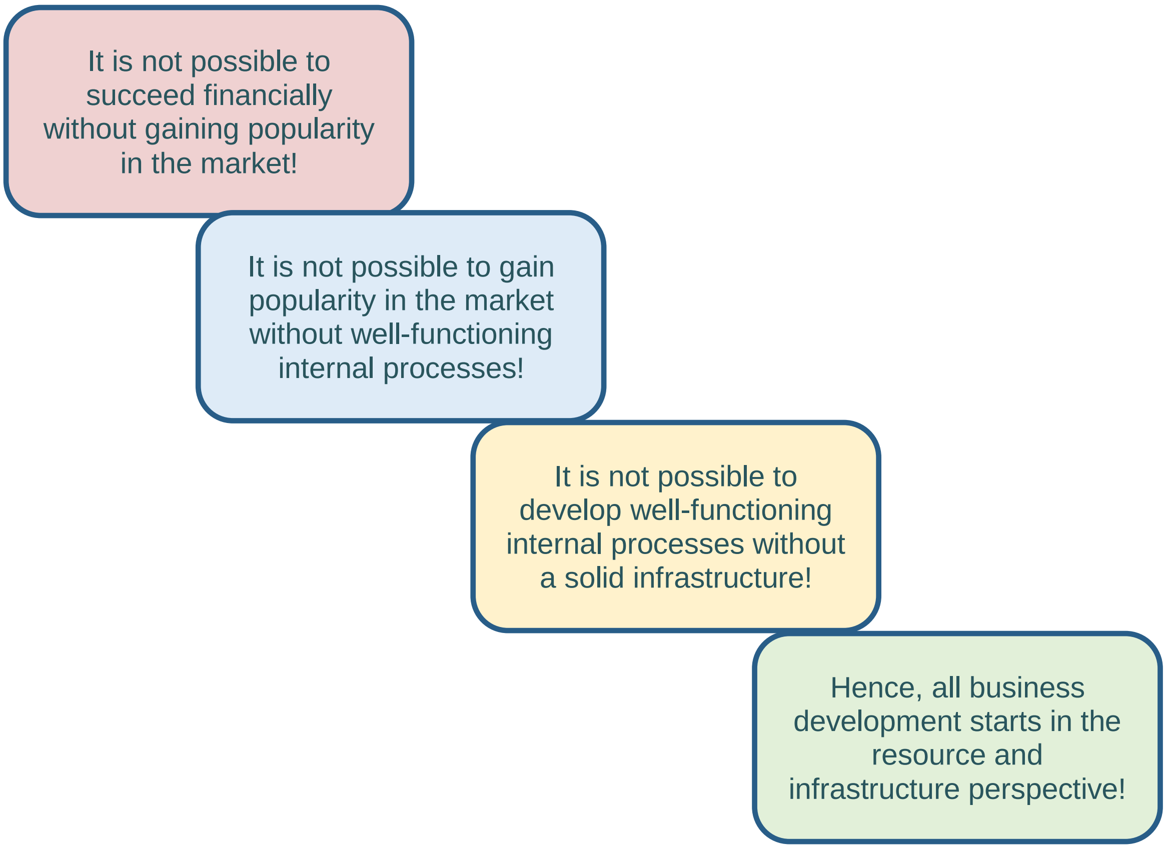
9.3 Key Performance Indicators (KPIs)

If we need to succeed in many areas and success is a consequence of gaining control over various factors that are critical for achieving this success, we need to be able to evaluate our own performance in these areas. We need to find a parameter that is able to measure how successful we are in gaining control each of the critical success factors. A Key Performance Indicator measures how well we perform in a key area, and this key area can be either of a financial or a non-financial nature.
There are a lot of things we can measure, but the question is if we are able measure where we actually need to gain more knowledge and control?
Here is an example: At BI we can measure how successful the exam candidates are in convincing the examiners of how much control they have over the various learning objectives in a specific course. This is because we can align the various questions of the exam with the things we want the students to learn. But we cannot measure good enough what causes this learning to happen – we have a lag-indicator instead of a lead-indicator.

There are four factors that determine how well suited the KPI actually is to measure the degree of control we have over a given critical success factor:

1. What we measure must be directly connected to what we want to achieve; the KPI must have a high degree of *validity*
2. What we measure must have an acceptable level of *reliability* – We can use the same KPI over a given time period and measure that performance actually changes when this is a fact. Several people can measure, using the same KPI, and make the same conclusions.
3. There must be a *consensus* on what we measure and this is the best way to measure in this particular area
4. We should not only measure outcome, but factors that in the long run will create outcome – we must therefore *include both lead and lag indicators* and understand important cause and effect relationships

9.4 How the four strategic perspectives are related to each other



We must start by asking questions such as:

- Do we have sufficient production capacity?
- Do we have sufficient administrative capacity?
- Do we have the right competence?
- Are we able to think in a new and different way?
- Are our IT-systems future ready?
- Do we have the right collaboration partners?
- Are we organized efficiently enough?
- Do we have sufficient financial resources?
- Do we have the right organizational culture?

9.5 If The Balanced Scorecard is the answer, what is the question?

Traditional models for management accounting focus on the company's value creation, but not enough on what has caused it:

- The income statement does not tell us why and how
- The budgets don't tell us why and how

In the 1990-ies there was a need for a more holistic model that was capable of showing how a number of non-financial all contributed to creating long-term financial values:

- Factors related to the company's resources and infrastructure: Competence, innovation, available capacity and technology, network, systems, procedures and databases and product development
- Factors related to the company's internal processes: Quality, efficiency, ability to deliver and product improvement
- Factors related to the company's customers and markets: Customer satisfaction, customer loyalty, reputation and relations to important external stakeholders

If these are the factors that actually contribute to financial performance, they must also be the factors we should measure and try to influence over time.

9.6 Exercises

Exercise 13

Explain the difference between the infrastructural perspective (often also referred to as the learning and growth perspective) and the internal processes perspective. Give examples of generic critical success factors in these two perspectives.

Exercise 14

The company Nippon Catering AS was established in 2001 in Oslo and is specialized in selling packs of sushi to selected supermarkets in the greater Oslo area as well as some other cities in Norway. The company's vision is as follows: *"Nippon Catering AS shall be recognized as the leading supplier of sushi products in Norway and offer first class products to competitive prices."* A strategy plan for 2020-2024 is established, and one of the major decisions made is to double the sales before the end of the planning period.

Nippon Catering's assortment consists of the following:
- Three types of nigri sushi (rice ball with raw fish): Salmon, Tuna fish, Halibut
- Maki sushi (rolls with seaweed, rice and raw salmon)
- Shrimp sashimi (raw shrimp)

The company only market two products, the small tray S1 (total weight 250 gram, of which 200 grams are sushi) and a large tray S2 (total weight 500 gram, of which 400 grams are sushi). The trays also contain soy sauce, pickled ginger and the green horseradish paste called wasabi.

Nippon Catering AS' strategy plan covers four main perspectives:

- Finance
- Customers and market
- Internal processes and quality
- Growth and development

The *overall strategic goal* is increased Return on Assets (ROA).
The strategy plan lists ten different critical success factors, in random order:

- Access to perfect raw material
- High rate of return on sales (profit rate)
- High brand recognition
- Efficient use of production facilities
- New large clients (supermarkets)
- High total capital turnover rate
- Customer satisfaction
- Sufficient cash reserves
- Optimal hygienic conditions
- Increased knowledge about the grocery industry

a) Place the ten critical success factors above in the correct strategic perspectives

b) Define relevant cause and relationship links between the overall strategic goal and the critical success factors.

Session no. 10 – Goal-setting, measuring and reporting

Study week no. 10:
Class Thursday March 12, 14:00-16.45
Student exercise seminar Thursday March 12, 17:00-20:00
Video: Setting goals and linking them to each other
Article: Kaplan and Norton (2000)

10.1 What makes The Balanced Scorecard balanced?

1. Balancing financial with non-financial performance indicators
Traditional financial reporting such as the income statement, the balance sheet as well as the cash flow statement presents the financial *outcome* of the value creation, but not what has caused this. We must therefore also focus on reporting the status in relevant non-financial areas, such as:
- Customer/market related performance indicators
- Internal process related performance indicators
- Resource and infrastructural related performance indicators

Hence, we are balancing financial performance indicators with non-financial performance indicators.

2. Balancing the various non-financial performance indicators
We must also balance the various non-financial areas against each other, so all relevant value drivers get the necessary attention and we avoid over focusing on one area and forgetting another. Having said that, we will experience that it may be a challenge to find valid and reliable KPIs in all areas. More about this later!

3. Balancing lead against lag
A lag indicator is only capable of measuring the outcome in a specific area, but in order to understand more about relevant cause and effect relationships we must also measure what leads to success in this area.
An example: BI wants to continue its success in the bachelor market in the future. The number of students enrolled on each program is a lag indicator, but we will also need to know more about relevant lead indicators, such as the number of applicants, the number of offers to the students and the students' acceptance rate.

10.2 The SMART criteria

We should avoid vague statements such as:
- Our employees are our most important resource!
- We shall run a profitable business in the future!
- Without satisfied customers we will not survive!
- We shall create the results together!
- We shall succeed with our new plans!
- It is important to think differently!

Such statements may have a certain information value in a manager's Christmas speech but as a basis for efficient performance management these clichés are worthless.

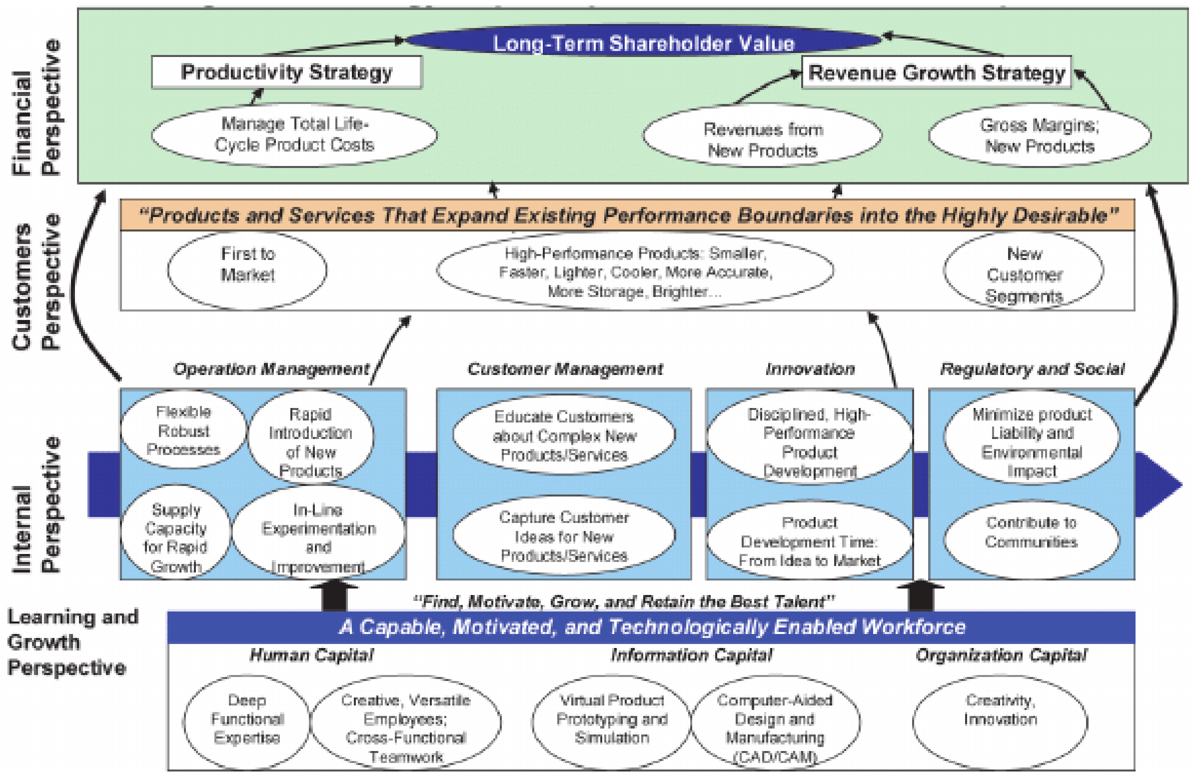
George Doran presented in 1981 the so-called SMART-criteria in its first version. In the goal-setting process we should make sure that each target is:

S Specific (and alternatively strategic): Target a specific area for improvement
M Measurable (and alternatively motivating): Quantify or at least suggest an indicator of progress
A Achievable (and alternatively agreed and attainable): Specify who will do it (often many people involved!)
R Realistic (and alternatively relevant): State what results can realistically be achieved, given available resources
T Time-related: Specify when the result(s) can be achieved

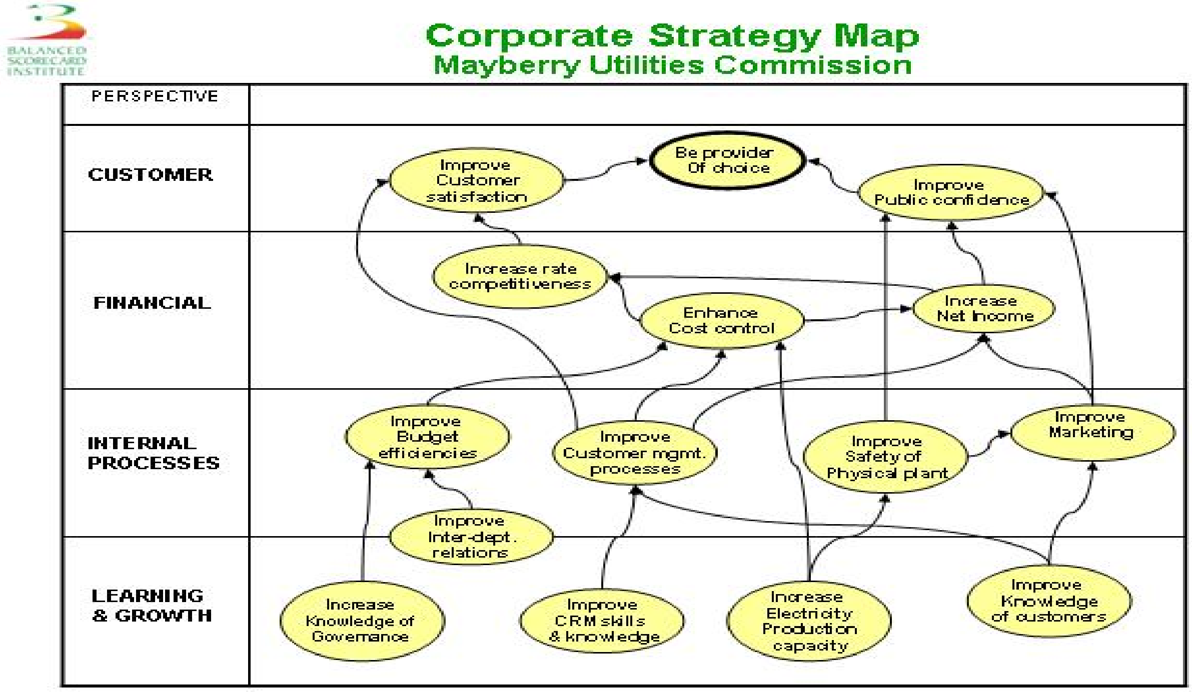
10.3 The Strategy Map

A strategy map is a visualization of the various critical success factors relevant for a specific strategy in a company. These critical success factors are placed in the four relevant strategic perspectives and linked to each other in a cause and effect relationship, showing the way towards a long-term and overall goal. The strategy map is an efficient tool to communicate the strategy to managers and employees and it helps them to understand important mechanisms in a flow chart-like presentation.

Here is an example of a strategy map:



Here is another example from an American provider of electricity that has a different overall goal; to be the provider of choice in the market. in this case the two upper strategic perspectives have switched places:



10.4 Seven challenges that can limit Balanced Scorecard success

The Balanced Scorecard is not a quick fix to solve complex problems in an organization and we must be aware of the challenges that may arise along the way, such as:

1. Not everything is easy to measure: How do we for instance measure innovation, learning capability, utilization of competence, the value of teamwork, the value of strategic alliances and co-operation with stakeholders, employee motivation and satisfaction, ability to employ new technology?
2. We end up measuring in too many areas: It is all about relevance, and maybe it is sufficient to measure in 8-10 relevant areas? We need to make sure that what we measure and report is what we need to measure and report.
3. We focus on measuring individual instead of collective performance: We must have a holistic approach to measuring and we must focus of the company's total ability to improve
4. We chase moving targets: Dynamics make things more complicated! The more static the strategic process is, the fewer targets change along the way, and management control focuses on fixed objectives. On the other hand, most companies need emerging strategies, where new targets are set along the way.
5. We interpret the results differently: We can evaluate the status differently, how critical is it if takes longer than initially planned to reach our goals?
6. We don't implement an action plan to improve in areas where we underperform: Do we have a plan to close the gap between actual performance and wanted performance?
7. The initiatives we have implemented don't work as good as intended: Are we still underperforming after we have executed plans to improve our performance? What can we learn from this?

10.5 Exercises

Exercise 15

Grünerløkka Micro Brewery, GMB, is a small brewery and bar specialized in making and selling its own brand of beer. The beer is sold both to bar guests as well as to grocery stores in Norway. GMB's strategy plan describes four critical success factors, which are mostly relevant for the *retail customers*:

- Customer loyalty
- Customer profitability
- High sales volume and consumption per customer
- Customer satisfaction

a) Describe what you mean is logically the most probable cause and effect relationship between the four above success factors.

b) Define Key Performance Indicators than can measure success for each of the four success factors.

c) GMB's owner told the following to the personnel at a recent staff meeting: "All loyal customers are profitable customers and we need as many of these as possible and keep them as long as possible". Discuss the relationship between customer loyalty and profitability and comment on the owner's point of view.

Session no. 11 – Balanced Scorecard case

Study week no. 11:
Class Thursday March 19, 14:00-16.45

Session no. 12 – Financial consequences of creating competitive advantages

Study week no. 12:
Class Thursday March 26, 14:00-16.45
Articles: Wernerfeldt (1984), Barney (1991) and Porter (1996)
Video: Three ways to create competitive advantages

12.1 Strategy development vs. management accounting

We have already in this course observed the link between strategy and management accounting in two areas:

- Budgets are simulation tools where we can simulate the financial effects of any plan the company wants to carry out in the near future, which are necessary steps to reach to company's vision and overall goals.
- The Balanced Scorecard model helps the company to evaluate how successful the company is in implementing their strategies

There is also a third and equally important link:

- In the strategy analysis that lead to a company's conclusion about their current strengths, weaknesses, opportunities and threats (SWOT analysis), there are internal and external factors that may help the company to create certain competitive advantages. There are different strategies for this and it is important to understand that they have some financial consequences. These consequences link strategy development to management accounting issues once again.

12.2 Approach no. 1: What we do in the market (The Positioning School)

The American politicians and authorities have for many generations been concerned about how companies have been able to gain too much market power, and how consumer interests must be protected from these companies:

- The Sherman Antitrust Act was passed already in 1890, and a result of this legislation was that John Rockefeller had to split the company Standard Oil in 34 different companies. After that no single company could have a monopoly on production and distribution of petroleum products.
- In 1982, American Telephone & Telegraph (AT&T) had to split into seven new telephone companies. AT&T was using monopoly profits from its Western Electric subsidiary to subsidize the cost of its network, which was ruled as a violation of anti-trust law.
- In 2019, American senator Elizabeth Warren claimed that Amazon, Facebook and Google now all have so much market power that these companies are a treat to free competition. We have in the recent years observed that "the winners take it all" in some markets, and that customers often are left with a very limited choice. From the companies' viewpoint we can say that these companies have been clever in *positioning* themselves in markets where the barriers to entry eventually have become enormous obstacles for newcomers. On the other hand, the effects to the society may be negative when there are a few dominating companies that are increasingly challenging free enterprise.

Not only in the US, but also the EU and Norway there is legislation to prevent companies from gaining too much market power, and sanctions are tough:

- In 2017, Google received a record fine of €2.42 billion from the European Union for promoting its own shopping comparison service at the top of search results.
- In 2018 the same company was fined €4.34 billion for breaching EU antitrust rules. In this case the abuse of dominant position refers to Google's constraint applied on Android device manufacturers and network operators to ensure that traffic on Android devices goes to the Google search engine.

There were many projects in the US in the 1960-ies and 1970-ies funded by the authorities, where various industries were analyzed to see if the conditions for free competition were present or if anti-trust legislation was violated.

- The purpose of this research was to protect customer interests, because the authorities assumed that if an industry was "too profitable" this was a result of customers having few alternative suppliers to choose from.
- Some of the projects concluded that there actually were some industries that were more profitable than other and that these industries also had something in common.
- The findings in these research projects could also be used against the initial purposes of the research, because the conclusions could also be used to find out which industries, markets and segments of these that a company ideally should be positioned in to have the best chances to succeed financially!

The conclusions of this research gave important feedback to the strategy theory development, and formed the basis for was later known as the Positioning School. Harvard professor Michael Porter wrote the book "Competitive Strategy" in 1980, which became one of the most influential management books of the 20th century.
According to Porter the most important thing a company can do from a strategic point of view, is to position the business activities in a market or a segment of this where the basic conditions of profitability is already present.
Porter's own research evidence pointed in the direction that the profitability of an industry is threatened by five major factors (Porter's Five Forces):

- The degree of rivalry between the competitors
- New entrants to the market
- Substituting products or services
- The bargaining powers of the suppliers
- The bargaining powers of the customers

To achieve a real competitive advantage according to this model, a company needs to position itself in a market (or a market segment) where the competition is not very tough, there are no new competitors to fight against, the products and services offered cannot be threatened by something new and exciting, and neither the customers nor the suppliers of the company are difficult and demanding to deal with. Doesn't this sound like a place where it is possible to make money? From a management accounting point of view, being positioned in a stable and profitable market segment seems to bring relatively few challenges to the planning and budgeting process, and the changes from year to year is *incremental* rather than revolutionary.

12.3 Approach no. 2: What we are capable of doing (The Resourced Based View)

The validity of The Positioning School conclusions was eventually challenged in the 1980-ies, because some empirical studies showed that there are greater differences in financial performance between various companies in the same industries than there are differences in performance between the average companies in various different industries.

Hence, a company can still be profitable in a market dominated by one or more that Porter's Five Forces, and it is possible to be unprofitable in an industry where conditions for success may prevail a priori.

In 1984 Birger Wernerfelt wrote an influential article, The Resource-based view of the Firm, where he argued that it is the company's unique resources that are crucial to value creation. Jay B. Barney followed seven years later with what has become known as the VRIN framework.
As opposed to The Positioning School that explains competitive advantages from an external market-oriented perspective, the Resource Based View explained these advantages from its internal *resources and capabilities.*

According to Barney, competitive advantages are created as result of having:
V - Valuable resources
R - Rare resources
I - Resources that are difficult to imitate
N - Resources that are not easily substituted by other resources

To achieve a real competitive advantage according to the VRIN-framework, a company needs to develop and sustain valuable resources such as for instance:
- A unique competence in one or more areas
- Special design and/or quality attributes
- A valuable network of stakeholders working together with the company
- Access to sufficient financial resources

A later development of the VRIN-framework was the *VRIO-model*:
- Because the N in the VRIN model can be regarded as something that adds value and therefore can be a part of the V (resources that are not easily substituted by other resources are normally also valuable as such), the N can be omitted
- The organizational capability to utilize and commercialize the valuable, rare and un-imitable resources is important and can therefore be regarded as a critical success factor in itself that deserves a place in the model. Hence, O for organization.

From a management accounting point of view, The Resource Based View remind us about two tough challenges:
- The development of valuable and rare resources can be a time-consuming and costly process
- And when the company has those resources, the next step is to secure that these create sustainable competitive advantages in the future. This happens when the resources are difficult to imitate or copy and the company is capable of utilizing these resources in a way that actually add to the value creation process.

An example: We can use The Resource Based View and the VRIN/VRIO frameworks to explain Apple's situation around 2008-2012. The company had resources that were valuable (new technology), rare (they were alone in the beginning), non-imitable (at least not immediately) or could not be substituted by other products (they were the ones that offered the real innovation). However, it did not take a long time though before Samsung, LG, Huawei and other competitors had imitated the Smartphone and tablet concepts and showed that they also were capable of actually doing what Apple did.

Some companies are able to utilize rare resources for many generations:
- In 1969, ConocoPhilips found oil on the Norwegian continental shelf. Production commenced in 1971 on the Ekofisk oil field and the production is planned to continue at least until year 2050.

- In 1928, the American chemicals company DuPont invented synthetic rubber (Neoprene) and in 1935 Nylon. The company secured patent rights for 15 years and received royalties from production of car tires and nylon stockings. This could fund more production development and the invention of other products such as Kevlar and Teflon, which formed the basis for the company as it is today.

If we compare The Resource Based View with The Positioning School, we see that it is possible to criticize both concepts:
- The Positioning School take for granted that the resources the company does not have for the moment, can be acquired in the market when the company needs them, which is probably not always the case
- The Resource Based View take for granted that the resources as such are sufficient for financial success, and is not focused enough on being at the right place at the right time

12.4 Approach no. 3: How the organization works (Operational Effectiveness)

Although not all investments in new technology have been equally profitable by all companies, there are some megatrends that have influenced organizational effectiveness tremendously the last 30-40 years:
- Robots replacing manual labor in production processes
- Automation of production monitoring and quality control
- Digitalized information technology for storing and processing data as well as for sharing information and for communicating

Some companies have definitely been cleverer in utilizing digital technology than its competitors and in these cases this competence have contributed to creating a competitive advantage.
An example: The Norwegian furniture manufacturer Ekornes was established in 1934 and after WW2 it was one of more than 200 companies in this industry in Norway. Now only around a dozen companies are left, of which Ekornes is by far the largest company. Already more than 30 years ago Ekornes started modernizing its production process to reduce the amount of costly Norwegian labor and the investment gradually paid off. The costs per produced unit dropped and it was now possible to compete on the export markets. The last years the company have exported more than 85% of its sales and has had a profit rate of 10% or more. In 2018, Ekornes was sold to a Chinese furniture manufacturer for NOK 5.1 billion.

If we look at this in a resource based perspective, we can say that the ability to produce more effectively than its competitors is a valuable and often rare resource, that if sustained in the company will contribute to increase value creation in the company.

But operational effectiveness is not only limited to unique competence in a key area such as production, it is also relevant for *internal processes* such as:
- Accounting, payroll and financial reporting
- Ordering, sales, warehousing and logistics
- Quality control
- Recruiting and training employees
- Handling customer support
- Cleaning and maintenance

These are examples of functions in an organization that are not company specific as such, for all our competitors will have the same departments in their own organizations.

The question will then be if we can organize these functions in a more effective way than our competitors do. If our various supporting activities can be handled with for instance 100 employees taking up 1,500 square meters of office space, while our main competitors need twice as many people and twice as much space, we may have a competitive advantage just from the money we are able to save in these areas.

After being challenged by The Resource Based View in the 1990-ies, as well as observing that many companies started sharing best practices to reduce operational costs, Michael Porter wrote the article "What is Strategy" in 1996.
As the title of the article suggests, Porter felt the need to remind us that a cost cutting strategy alone is not a strategy, and we can quote from the article:

- A company can outperform rivals only if it can establish a difference that it can preserve. It must deliver greater value to customers or create comparable value at a lower cost, or do both.
- Operational effectiveness (OE) means performing similar activities better than rivals perform them. Operational effectiveness includes but is not limited to efficiency. It refers to any number of practices that allow a company to better utilize its inputs by, for example, reducing defects in products or developing better products faster.
- In contrast, strategic positioning means performing different activities from rivals' or performing similar activities in different ways.

According to Porter are activities intended to increase operational effectiveness necessary, but alone not sufficient to create a good strategy. In fact, he claimed then (1996) that "Japanese companies rarely have strategies", because they had all focused on quality management and continuous improvement and copied each other's best practices. Competitive strategy is about being different, Porter argued. And different meant deliberately choosing a different set of activities to deliver a unique mix of value.

On the other hand, a company may have a unique strategy, by being positioned with the right products in the right markets delivering customer value, as well as having unique resources that the competitors cannot copy or imitate overnight, but this may not be sufficient if the company's internal processes are ineffective and costly to run.
It is time to learn more from the Japanese and what formed the basis for what we can call the lean-philosophy!

Session no. 13 – The Lean-philosophy

Study week no. 13
Class Thursday April 2, 14:00-16.45
Student exercise seminar Thursday April 2, 17:00-20:00
Seal, Rohde, Garrison, Noreen: Chapter 18
Video: Classical lean-philosophy

13.1 Historical background

To understand the lean philosophy, we have to go back to Japan in the first post-war years. One of the conditions of the peace treaty after Japan's WW2 capitulation in August 1945 was a major restructuring of ownership of many large companies as well as adapting to a more modern market-based economy. There was a need to think differently and to use the available resources in the best possible way.
The Ministry of International Trade and Industry (MITI) was established in 1949 and played an important role in the development of Japanese industry for the following 30-40 years.
Numerous *Keiretsus* were established in this period; grouping of enterprises with interlocking business relationships and shareholdings. A Keiretsu is normally grouped around a bank and a trading company and links various suppliers to this hub, for instance a steel company, a chemicals manufacturer, an insurance company, an automaker, a shipping company, electronics and precision machinery and a petroleum company. Examples of such Keiretsus are Mitsubishi, Mitsui, Sumitomo and Tokai/Toyota.
One effect of this structure was to minimize the presence of hostile takeovers in Japan, because no entities could challenge the power of the banks. The various companies in the group protect each other, because they have mutual interests and own shares in the other companies in the keiretsu, which act as a large, formalized value network.

Although the domestic Japanese post-war market was large and continuously growing, the overall goal was to succeed on the export markets. And only half a generation after the capitulation was the country who had lost the war starting to win the peace:

- 1957: Bell Labs in the US licensed the use of transistors to Sony, which later became the largest electronics firm
- 1959: Nikon was the largest manufacturer of cameras, and Honda the largest manufacturer of motorcycles
- From around 1968 onwards: Success in the car markets, both in US and Europe and later Africa and rest of the world.

There were probably three major reasons for the Japanese success on the export markets:

- Low prices due to low production costs, combined with a low-priced Japanese yen
- Long-term focus on developing high-quality reputation ("My Toyota is Fantastic!")
- The utilization of rare and valuable resources such as a highly motivated, hard-working workforce that pulled together as a team

There are some similarities between the Japanese economic wonder in the 1970-ies and 1980-ies and other Asian countries' growth the last 20-25 years. The financial bubble ("baburu keiku") in Japan burst in 1992, but this did not stop the further development of the largest Japanese companies, who continued to grow in a profitable way.

Taiichi Ohno was born in 1912 and joined Toyota in 1932, some years before they started to manufacture cars. In 1943 he joined the car division and stayed there until he retired in the 1980-ies. Ohno is considered the father of The Lean Philosophy due to his role in creating The Toyota Production System. This was the origin of what we now refer to as *Lean Manufacturing* or *Classical Lean*.
Shortly after he retired, Ohno wrote a book about The Toyota Production System and what the company had learned during the enormous growth period from around 1965 to 1985. When the book was translated to English in 1988 both he, Toyota and the Japanese business culture in general got much attention in the Western World. One of the founders of Sony, Akio Morita, had also three years earlier written the book "Made in Japan", where he communicated some of the learning he had made in what at that time had become the largest electronics firm in the world.

In 1989-1990 a group of researchers at MIT made an extensive study of how car manufacturers around the world produced their cars, to see where The Toyota Production System de facto made a difference. The book that some of these researchers (Womack, Jones and Roos) wrote in 1991, "The Machine That Changed the World", motivated the Western World to watch and learn from the Japanese. Around the same time, the concept of lean thinking was coined.
Although the lean philosophy has its roots in Japanese heavy industry, the concept was later adapted to other types of businesses, and we have the last years for instance seen further developments such as for instance Lean Engineering and Lean Start-Up.

13.2 Five main principles of lean

There are many different ways to interpret The Lean Philosophy, and one definition can be:

> *Lean thinking focuses on increasing production output while keeping strict control over the utilization of costly resources in the organization. This is facilitated by a continuous emphasize on the various processes that act together in the value chain to avoid organizational waste.*

Hence, The Lean Philosophy is both an overall mindset as well as a tool box for continuous improvement.
The principles and concepts of lean can be adapted to both commercial and non-profit organizations and has also influenced *New Public Management*, which is an approach to running public service organizations in a more "business-like" way.

There are five basic principles in lean thinking, which we can say all are about how to "work smarter" and "getting more out of less":

1. Define product value the way the customer perceives it
    - It is only the product attributes that the customer actually asks for and is willing to pay for that can justify the use of resources. This means that it is the customer who decides what is valuable!
    - We should therefore direct all activities towards something that the customer perceives as valuable for him and try to create values that the market will recognize.

2. Eliminate non value-creating activities
    - Are there activities that are carried out that are neither value-creating nor value-bearing (necessary for internal purposes/users)?
    - Examples of non-value creating activities in a production process are waiting (queuing) and transportation (unnecessary movements).

3. Create a smooth process flow ("heijunka")
    - A smooth process ties up less production capacity and creates less organizational problems, try to level production output as much as possible
    - Avoid "mura", which is Japanese for unevenness, and "muri", which means system overload.
    - Demand levelling – can we create a smoother flow by influencing market demand (for instance with price discriminating measures)
    - Production levelling – can we create a smoother flow by improved production planning?
    - Taiichi Ohno used the story about the hare and the tortoise – who arrives first at the goal?

4. Just in time: Avoid overproduction or waiting time by synchronizing production as much as possible with demand
    - What we need (no more, no less), when we need it (not too early, not too late)
    - Let customers pull goods through and out of the production process, instead of the company pushing goods on them

5. Kaizen – achieve continuous improvement
    - Regardless of how efficient we are today, there is always room for improvement!
    - We cannot rest on our laurels, lean thinking is a continuous process

A practical approach to the Lean-philosophy is to maintain a constant focus on two major challenges in business: Not only doing things right, but also doing the right things!

13.3 Nine sources of organizational waste

In his 1988 book Taiichi Ohno described seven sources of organization waste ("muda"). Later the list has been expanded to nine different waste areas:

1. Errors and defects: "Do it right once and for all" and avoid errors that create extra work and dissatisfied customers!
2. Overproduction: Don’t produce the goods before we need them! (This is actually a part of the Just in Time-principle)
3. Unnecessary warehousing: Ties up capital and warehouse costs! Keeping more goods in stock than what we need now does not add to the value creation (This is also related to Just in Time)
4. Waiting: Unproductive time! The extra time does not add extra value to the goods or the services produced
5. Transportation: Meaning both unnecessary physical transportation or flow of information also ties up unproductive time!
6. Unnecessary movements (particularly in the production process): Is also counterproductive!
7. Unnecessary tasks: Don’t use time on activities that in the eyes of the customer/user don’t add value to the end product!
8. Unnecessary product attributes: Waste, if customer is not willing to pay for it! Simplify where customers don't have specific preferences or needs
9. Lack of utilization of skills/talent/creativity and competence: One of the most important sources of waste in a modern society!
   Henry Ford once said: "You can think you can achieve something or you can think you can't - and you will be right both times!" James P. Womack rephrased this mantra in one of his books about lean, writing: "Thinking you can't is the worst form of waste…"

13.4 The lean-philosophy versus other theories

Lean vs. the value-chain

When we use a value chain to describe how values are created in a company, we split the activities in primary activities and supporting activities. The lean-philosophy can be employed to improve efficiency in *both* of these activity groups:

- Could we organize the primary activities with less organizational waste? Are all the activities that we carry out organized in an optimal way? Are there activities that are unnecessary because they don't add to the customers' perception of product value?
- Could we organize the supporting activities with less organizational waste? Are there activities that that are not necessary for internal purposes? Can we move resources from the supporting functions to core functions in the primary activities to increase our production capacity?

Lean vs. the resourced-based view

In the resourced-based view we must use a wide definition of the concept of resources, which also means that all competence, learning and skills are relevant when we analyze our resources. If we have developed unique skills in utilizing the lean philosophy in a way that contributes to value creation, these resources are definitely valuable and probably also rare. If we have come this far, the challenge will be to *secure* the resource, so it is difficult to imitate or substitute in the future by our competitors.

An example: Henry Ford's way of producing automobiles around 1914 was revolutionary and can in many ways be regarded as the lean philosophy of its day. But after a while all automakers copied Henry Ford's production system and Ford gradually lost control over a resource that was not valuable and rare any longer. 14 years later, General Motors had passed Ford as the largest manufacturer of cars in the world.

Lean vs. operational effectiveness

If strategy is about being able to attract more of what is limited and difficult to get hold of, the battle against our competitors is not only about winning in the market place, but also about utilizing the available resources the best possible way. Although strategy is often about creating something that makes the company *unique*, there are a lot of internal activities that the competing companies have in common. If we can do the things that our competitors also have to do, with use of less resources, this operational effectiveness advantage will add to the relative profitability of the company.

An example: If an airline company can reduce the amount of time their airplanes use for unloading and loading passengers, luggage and crew, they will develop a resource advantage that will add to their operational effectiveness.

13.5 Exercises

Exercise 16

A bank wants to analyze the efficiency of their loan application processes, where the process is defined by a number of activities that take place from a loan application is received until the loan is deposited on the customer’s bank account (or credit is denied).

Explain the factors that may threaten the efficiency of this process and contribute to a low productivity in the bank’s Credit Department.

Exercise 17

<u>Question a)</u>
One of the principles in the Lean-philosophy is to strive for *heijunka*, which is a technique for reducing production output unevenness. The goal is here to carry out the primary activities in a production process at a constant rate to enable that further processing also are as constant and predictable as possible.
Discuss if this principle may be in conflict with the Just-in-Time principle in Lean-philosophy and if so, how a company can design production systems that contribute to reducing such conflicts between these two principles.

<u>Question b)</u>
For many years, the car dealerships around the world have organized their maintenance and repair functions so that when you deliver your car you give your car keys and the contact information to a person at a reception desk who is handling all of the communication with the customers. The mechanics however, have little contact with the owners of the cars and perform the tasks that have been agreed upon with the customer.
Some years ago, Volvo decided to organize this function differently with their Swedish dealers. The customers are now in direct contact with the mechanic that performs the repair and service tasks, from the booking of an appointment, when the car is delivered and when it is picked up and the bill is paid. The mechanic calls the customer directly if there is a need to discuss further the tasks that need to be carried out and inform about the costs for these.
The person(s) at the workshop reception desk got new jobs in the same companies, working either with sales and aftermarket services or as mechanics.
Discuss how this re-organization is influenced by the lean philosophy.

<u>Question c)</u>
A five-star luxury hotel offers room service from 5PM to 11PM every day, where the guests of the hotel can order dinner or smaller courses from the room service menu to be delivered to the hotel room. The food is prepared in the same kitchen as the food for the ordinary hotel restaurant customers and some of the dishes are identical. Room service customers pay an additional fee to cover the delivery.
In this city, the best hotels operate in a very competitive market and they discuss new strategies to increase the quality and to widen the scope of their services. One of these hotels are currently planning to expand the opening hours of its room service from six to 24 hours a day. In the future, these hotel customers will get food delivered to their rooms whenever they want.
Discuss how the hotel can implement such a strategy without being in conflict with the main principles of lean philosophy.

<u>Question d)</u>
One of the Lean-philosophy principles is *Kaizen*, to strive for continuous improvement in all areas relevant for overall value creation.
The Kaizen principle claims that even if many of the targets are met and the company performs better than ever, it shall not rest on its laurels, but continue to identify organizational areas for future development.
Discuss how the Kaizen principle influences a company's strategic planning process and the underlying level of ambitions. How important are cultural aspects of the organization in a company that wants to focus more on creating such continuous improvement?

Session no. 14 – Business Process Analyses

Study weeks nos. 14-15
Class Thursday April 16, 14:00-16.45
Student exercise seminar Thursday April 23, 17:00-20:00

14.1 What is a process?

A process can be defined as a series of activities that are performed in a given sequential order to produce some kind of intended output. A large portion of the activities performed in an organization belongs to a process of some kind:

- Some processes are of a continuous nature, such as for instance strategy implementation, organizational development, improvement of internal control systems
- Other processes are of a more repetitious nature, such as for instance BI's exam grading, the tax authorities' handling of a tax return or a bank's handling of a loan application
- And there are processes of a more unique nature, where we do something we have not done before and don't know when we are going to something similar, for instance a specific research or IT project

14.2 Measuring process efficiency

It is difficult to analyze and measure process efficiency in a continuous or unique process, but standardized processes that are often repeated are ideal for process analyses.
The process can be defined by a start and stop point; when did we start the first activity of the process and when did we complete the last? The time between start and stop is called *the process cycle time.*

A standardized and continuously repeated process have the following attributes:

- The activities can be documented step by step in a written procedure describing the various activities
- It is also possible to present the process in a flow-chart format
- The process needs input of various resources, such as information/data or material
- Then there are some processing actions, often with the help of technology and labor
- And at the end of the process, we have some defined output

Can we learn something from the lean principles to improve process efficiency? Although classical lean was developed in an organizational culture very different from the ones in most Western private and public entities, lean thinking adds some common sense that we can utilize, and relevant questions are:

- What are the value adding activities?
- Are there other ways to carry out these?
- What are the supporting activities?
- Are there any steps in the process that are unnecessary, both for the end product and for internal purposes?

Principle no. 1: Define product value the way the customer perceives it

- The customer has the final word when we determine value creation, because this is a consequence of customers' willingness (and ability) to pay
- What is important for the customers? Analyze what they need and want!
- Source of waste: Unnecessary product attributes, simplify where possible

Principle no. 2: Eliminate non value-creating activities

- If what we do adds value for the user and is necessary for internal purposes (support activities that help us to do the primary activities) we should continue as before
- But if there something in the process that does not add value or the company can do without, we should eliminate these activities as soon as possible!
- Source of waste: Waiting, particularly if we don't have alternative use of the resources in the waiting time and these are held up, waiting for the next step to happen
- Source of waste: Transportation, both unnecessary moving of information, materials and people

Principle no. 3: Create a smooth process flow

- Unevenness is a main source of the costs pertaining to excess capacity
- System overload creates technical and organizational stress
- Source of waste: Fixing errors and defects, inefficient production planning
- Source of waste: Overproduction

Principle no. 4: Just in Time

- Synchronize production to demand as much as possible ("pull" instead of "push")
- Can we influence demand? "Demand levelling"
- What we need, when we need it
- Source of waste: High stock levels of raw material, components and/or finished products

Principle no. 5: Continuous improvements ("Kaizen")

- Where is there still room for improvement?
- Better utilization of technology? Better training of personnel? Out-of-the box thinking?

Improvement in a given business process can be grouped in two main groups:

- Improvements that shortens the process cycle time
- Improvements that utilizes the input of resources better

Examples of some actions that may help us to improve process efficiency:

- Improve utilization of technology, tools, procedures and techniques
- Organizational changes such as delegating, coordinating and changing responsibilities
- Changing physical layout – Can we change the attributes of the product/service in a way that helps us to produce more efficiently?
- Improve control over the resources that are fed into the process, such as materials in order to cut down on waste
- Improve human skills and competence
- Improve the control systems – all the mechanisms and structures where the purpose is to guide and control organizational resources.
- Organizational development and change management – all relevant changes in operational efficiency assumes that we are able to actually change organizational behavior, and to succeed we may need to challenge the organizational culture (for instance the British industry downfall in the seventies and its return again in the 21st century)

14.3 Multidimensional Process Analysis

With multidimensional process analysis we focus on three aspects of process efficiency for a given standardized business process:

- Process cycle time
- Time consumption in the process from start to stop
- Resource consumption in the process from start to stop

When we then compare our findings with the values created in the same process we will have an idea of how efficient the process is.
We split the time consumption in three parts, for each step of the activity chain in the process:

- Waiting
- Processing
- Transportation to next activity.

Process analyses require that we monitor a given, standardized business process over a time period and log the following:

- How much time (on average) is spent on each of the activity steps in the process?
- How much of this is spent on waiting, processing and transportation

Then we can calculate:

- Productivity rate: The sum of all processing time in per cent of process cycle time, based on average observations
- The flux rate: Expresses how many times the process can be performed over a given time period, based on average productivity rate

The next step will then be to answer to important questions:

- Are there relevant variances in the observations? What are the standard deviations?
- Can processing time be improved? Don't forget the Kaizen principle!

14.4 Exercises

Exercise 18

The airline company Albatross Air has outsourced the maintenance of their fleet of 20 Boeing 737-800 airplanes to the company Popular Mechanics AS. The maintenance process is highly standardized and Boeing's own service manuals and check lists are used for the different types of inspections.

There are different maintenance processes, depending on the number of flight hours elapsed since last service. We have decided to take a look at the second most complex maintenance routine, which is carried out for each 200-hour flight interval, and we have gathered data based on an average observation (see next page)

Normally the airline company orders the service job around noon on day one, in order to have the work done by early dawn day two, since all airplanes must be ready for take-off at 06:30 each morning.
As you will see is the total process cycle <u>17.8 hours</u> while the total number of hours logged is <u>57.4 hours</u>. Some tasks require as many as five mechanics (repair jobs), while registration of the service order and ordering spare parts only require one employee's efforts.

Tasks	Status	Time hours	Acc. time	Resources hours	Acc. resources
Registration of service order	Waiting	0.5	0.5	0.0	0.0
	Processing	1.0	1.5	1.0	1.0
	Moving	0.1	1.6	0.1	1.1
Installing plane in hangar	Waiting	0.2	1.8	0.6	1.7
	Processing	0.4	2.1	1.2	2.9
	Moving	0.0	2.1	0.0	2.9
Engine checking	Waiting	0.2	2.3	1.0	3.9
	Processing	0.9	3.2	4.5	8.4
	Moving	0.2	3.4	1.0	9.4
Fuselage checking	Waiting	0.4	3.8	2.0	11.4
	Processing	1.2	5.0	6.0	17.4
	Moving	0.3	5.3	1,5	18.9
Landing gear checking	Waiting	0.1	5.4	0.0	18.9
	Processing	0.4	5.8	0.8	19.7
	Moving	0.3	6.1	0.6	20.3
Rudder and flaps checking	Waiting	0.4	6.5	0.0	20.3
	Processing	1.0	7.5	4.0	24.3
	Moving	0.2	7.7	0.8	25.1
Electric circuits checking	Waiting	0.2	7.9	0.0	25.1
	Processing	0.8	8.7	3.2	28.3
	Moving	0.0	8.7	0.0	28.3
Instruments checking	Waiting	0.2	8.9	0.6	28.9
	Processing	0.5	9.4	1,5	30.4
	Moving	0.1	9.5	0.3	30.7
Control systems checking	Waiting	0.2	9.7	0.6	31.3
	Processing	1.2	10.9	3.6	34.9
	Moving	0.4	11.3	1.2	36.2
Spare parts order	Waiting	0.3	11.6	0.3	36.5
	Processing	0.4	12.0	0.4	36.9
	Moving	1.2	13.2	1.2	38.1
Repair jobs	Waiting	0.4	13.6	2.0	40.1
	Processing	2.1	15.7	10.2	50.3
	Moving	0.4	16.1	2.0	52.3
Service documentation	Waiting	0.2	16.3	0.6	52.9
	Processing	1.5	17.8	4.5	57.4
	Moving	0.0	17.8	0.0	57.4

Question a)

What is the relative efficiency of this process and what would this efficiency rate be if we could eliminate all waiting and moving time?

Question b)

The above figures represent the average outcome of 100 monitored maintenance jobs. In 15% of the cases the process cycle exceeded 25 hours, while in many cases the company completed the cycle in less than the average 17.8 hours. What may be the causes of this instability and what can the consequences be?

Exercise 19

In the small country of Lumumbia the airport authorities are concerned about the efficiency at the main airport in the country's capital. A group of officials from LAA (Lumumbia Airport Authority) travelled recently to other countries to observe and to learn about how other airports handle various internal processes.
In the fall of 2019, LAA commenced on a project to simplify the process of handling departing passengers, inspired by other airports where elements of the *lean-philosophy* have proven to give good results.

The main airport has more than 10 million annual departing passengers on domestic and international flights, and LAA is currently studying the process that starts with one passenger arriving at the airport premises and ends with the same passenger being on board of a plane ready for take-off. Today the process consists of the following activities:

1. Upon entering the arrival hall, the passengers must find the appropriate check-in counter; the different airline companies have their own counters (in total around 40). Passengers are requested to show up at least two hours prior to flight departure.

2. When finding the check-in counter operated by the relevant airline company, passengers line up and tickets and passports and/or other identification cards are checked, luggage is dropped off and a boarding card is printed. The check-in officer enters passenger name, age and nationality into the airport's computer system. Several airport officers help to ensure that the waiting lines are straight because check-in space is limited.

3. Passengers then proceed to the security control where officers check the validity of their boarding passes. Passengers without such are of course rejected. The security control routines comply with international standards. The waiting lines for security control are often very long, also after two new surveillance bands were recently installed. On average, every third passenger is requested by the security personnel to put additional personal belongings such as mobile phones, jewelry, watches and belts on the bands because of security gate alarms being triggered in the security scanning process.

4. Around 40 minutes prior to scheduled departure, the check-in counter is closed and the officer make a print-out of the passenger list and runs over to the departure gate with this before boarding can take place.

5. After security control, passengers must find the appropriate departure gate and stand in line when the airplane is ready for boarding. Gate officers check the boarding passes to see that no passengers are entering the wrong flight. Half of the boarding pass is kept for control purposes; the other half is given back to the passengers for seating information. The officers also check that the hand luggage size and weight are within the acceptable limits. Passengers that have oversized hand luggage are instructed to go back to step two and check in this as ordinary luggage.

6. Around 20 minutes prior to scheduled departure, the passenger list is checked against boarding cards and missing persons are paged on the loudspeakers ("last call"). If a person fails to show up, the crew must check if this person has checked in any luggage and if so, remove this from the cargo area of the plane to avoid chances of a bomb being placed onboard. The plane is ready for take-off when all passengers on the check-in list is accounted for.

Question a)

Describe how elements of the lean-philosophy may increase process efficiency at the Lumumbian main airport.

Question b)

Comment on the current check-in process and suggest alternative solutions that may improve process efficiency without compromising airport security.

Notes:

Three business cases

Business Case 5

In the summer of 2019, the DuPont family sold the restaurant La Brasserie Montmartre in the 18th Arrondissement in Paris to the chef Gaston Grenouille, who had worked for many years in another restaurant nearby that finally achieved two stars in the infamous Michelin Guide.
The DuPont family had run the restaurant well for more than two generations, but it was not the first choice for Parisians nor for tourists, and it was only during the busiest periods of the year that La Brasserie Montmartre made money.
After Grenouille had been in charge for a couple of months, he went to a consulting firm to discuss business strategy and to design a strategy plan for the period from 2020 to 2024. Below you will find *the summary* of the strategy document.

<u>A summary of the strategy for 2020-2024</u>

Since the restaurant was established in 1957, the French cuisine has developed. Our menu has always included many dishes from the traditional French kitchen that now seems a bit old-fashioned and that our younger clientele would refrain from choosing. It is therefore important that we develop a new menu more suited to younger people's needs; lighter, more delicate, a wider variation of tastes and structures. In order to succeed with this, we need to recruit a new generation of highly skilled chefs.
We Parisians are rumored to be arrogant and deliver bad service! We must win the tourists back and the only way to do this is to make our restaurant the best place to spend some time with friends or family. The only way we can create customer satisfaction and ultimately, customer loyalty, is to deliver products and service of best quality. We must also improve our language skills; we cannot expect all our guests to speak fluently French, and not only should all our employees that have customer contact speak good English, but some of us also need to learn basic Chinese and German.

The overall long-term goal is to secure a good return on the € 1.5 million investments we have made and we should aim at increasing the level of standardization in the production process, because we all have something to learn from McDonald's! With a higher degree of standardization, we reduce the waste of meat, vegetables, shellfish and other expensive raw material. We must seek new and better suppliers of material to increase the quality level, which also will improve the utilization rate of the raw material, for now we throw away up to 20% of what we buy due to insufficient quality. With a new, more standardized and updated menu, competent chefs and lower production costs, we should be able to deliver a better product with a higher profit margin, and we should even be able to offer some dishes at very competitive prices. We also know that a large part of our profits will come from our beverage assortment and it is time to make new contracts directly with wine suppliers both in the Bordeaux and Bourgogne regions, since the old contracts are not profitable enough.
A good product is not enough though - we need good publicity as well. The overall market goal is to achieve one star in the Michelin Guide (two stars are too demanding and may jeopardize our possibilities to make good money), but equally important are good reviews from our customers on channels such as Trip Advisor and Facebook.

Question a

Based on the information in this strategy summary, what are the factors that are critical for achieving the restaurant's overall financial goals? Place these factors in relevant strategic perspectives.

Question b

What are the differences between financial and non-financial performance indicators and measurement?

Question c

What is a Key Performance Indicator and what are the characteristics of a well-defined KPI? Define at least four relevant KPIs for La Brasserie Montmartre.

Question d

Over the last 15 years, Balanced Scorecard models have gained popularity in both private and public sector. Explain what you think are the main reasons for this and comment on challenges that may occur when implementing a Balanced Scorecard model.

Business case 6

Two well-known Norwegian investors are currently planning a new privately owned medical center in Oslo. Empatia Medical Center AS will offer a wide variety of medical services, organized as a membership organization where members pay an annual fee that gives them quick access to both general practitioners as well as specialists. The members pay an additional fee for the consultations needed.

This is Empatia Medical Center AS

- Opens August 1st, 2020
- Investment 500 mill NOK in buildings, equipment and start-up
- Vision: Patient first!
- Will hire 100 medical doctors in full and half time positions
- In addition, 100 assistants, nurses and administrative personnel
- General practice, 24-hour emergency, specialists
- Cardiologists, gynecologists, ophthalmologists, dermatologists, stomach and intestinal specialists, plastic surgery, neurologists, psychologists and more.
- Personal or company memberships

The investors have together with a well-reputed Norwegian consulting firm, developed a strategy plan for the period until end of year 2024, and here is a copy of the *summary of this strategy*:

<u>Empatia Medical Center AS – a summary of the strategy for 2020-2024</u>
Although the Norwegian public health care system has improved in recent years, it often takes a long time before a patient receives the necessary treatment from a specialist. The majority of the general practitioners have a limited capacity to follow up the patients sufficiently. In addition, employer-based health check subscriptions, where the workforce is offered regular check-ups are often not thorough enough to secure good healthcare in practice.
We think that many Norwegians have a willingness to pay for quick and professional treatments and to be followed up thoroughly after these treatments.

Medical consultation and treatment is an individual and person dependent experience and it is important to recruit and train our personnel in the possible way. Equally important is it to attract and keep unique medical competence. Our goal is to offer positions attractive enough to ensure that the best medical doctors want to work with us, rather than anywhere else.
The customers are offered two main products. One is a membership that gives access to our menu of various services, the other is a membership that contains one or two annual medical check-ups. This latter is also a product that will be offered as an occupational health service package to employers.

Our initial investment can be grouped in six investment areas:

- Purchase of land, planning and building new premises: 180 mill NOK
- Furnishings and fixtures and parking garage: 60 mill NOK
- Medical and laboratory equipment, MR-scanning/X-Ray: 85 mill NOK
- IT-applications for patient information and medical protocols: 15 mill NOK
- Marketing, recruiting personnel and other costs that occur before opening: 30 mill NOK
- Funding of operational loss 1st August 2020 – 31st December 2021: 80 mill NOK

We expect that the cash flow from the operational activities will be positive from 2022 onwards and a target for the Return on Assets (ROA) is 18 per cent in year 2024.

It is of utmost importance to design a management control model capable of following up the financial targets and providing good management reports that give relevant management information. There are also a number of non-financial value drivers that require continuous focus. The IT systems must ensure effective and secure handling of patient data and there is a need to tailor make applications for this. In addition, written procedures for all types of standard medical consultations is necessary for a quality control system that is also able to report variances along the way. The goal is to have a certified quality control system according to the ISO 9001 standard by early 2022.

Empatia Medical Center AS expects monthly operating costs of approximately 20 mill NOK from the start-up in August 2020, of which 60 per cent are salaries and other personnel costs. With such a large portion of the resources tied up in our own personnel, it is of utmost importance to our success that we are able to develop an organizational culture where all employees feel highly appreciated and are motivated to continuously develop the company. In this respect it is also important to succeed in getting three different cultures to work hand in hand; medicine, administration and commercial activities.
The handling of health personnel is resource demanding, because of legal requirements as well as the continuous focus on both the individual and joint responsibility for maximum compliance in this respect. Good reputation and low patient risk will only be secured as a result of long-term and determined activities in all processes and at every level. A code of conduct will be established, containing both general regulations concerning all employees, as well as more specified ethical codes for the various types of work carried out.
We will quickly need to build a large membership base that actively uses our services and that are loyal enough to recommend us to others. Our overall market target is to be recognized as the best private supplier of health care services in Norway. To succeed with this, we need to focus on market and media activities as well as the presence on important medical seminars and congresses, both domestically and international. A close co-operation with the pharmacy industry as well as with suppliers of technical equipment is very important, but we must at the same time maintain a high degree of integrity and neutrality towards these parties, to secure our own basis for making the best judgements on behalf of the patients at all time.

Together we shall take on the social mission to build an even better health care system in Norway, by offering good solutions, parallel with the public services in this area. At the same time, we must maintain a continuous focus on creating financial values in a capital and labor intensive business, a value creation both for our people in the organization and those who have invested in it.

<u>Question a)</u>
Comment on Empatia Medical Center AS' *financial targets* in the period from the start-up to the end of the strategy period in 2024 and suggest areas suited for measuring the financial performance in this period.

<u>Question b)</u>
Suggest what in your opinion are *relevant critical success factors* in Empatia Medical Center AS' strategy plan for 2020-2024, and place these in the four common strategic perspectives used in a Balanced Scorecard model.

<u>Question c)</u>
Suggest KPI's in *non-financial areas* that in your opinion have the necessary validity and reliability to be used in a Balanced Scorecard model in Empatia Medical Center AS. Discuss also areas where finding appropriate KPIs for this company *can prove difficult* in real life.

Business case 7

Realis AS is a company that develops and owns commercial real estate. The company currently owns approximately 800 000 m^2 shopping centers, office space, hotels and car parks in the Oslo area. The development projects consist of both total renovation of outdated premises as well as construction of new ones. External contracting companies do all the building and renovation work.

The company has currently 19 employees, working in four different organizational departments:

- Administration and finance
- Market and sales
- Development
- Technical operations

Realis AS has recently completed its strategy plan for 2020-2024, which is built on *three strategic themes:*

- Build for the future
- Preserve the values
- Create attractive and efficient rent objects

<u>A summary of the strategy for 2020-2024</u>

The real estate business is complex and competition in many of the market segments is stronger than before. Our shareholders have invested more than 400 million kroner in the company and the overall and long-term goal is to secure a high return on their investment. We will need to exploit our revenue potentials to a maximum and we need attractive properties suited to our tenants' needs. If a tenant chooses not to renew the lease, it may often be ten years before we can hope to get the company back as a customer. Customer retention and loyalty is therefore crucial, but such loyalty is the consequence of success in many areas. Realis AS thinks that one way to create customer satisfaction is to increase the intensity in following up their needs and complaints. We shall secure a future operational capacity that enables us to follow up our customers much better than what we have done previously and we need to strengthen our Technical Operations Department and recruit highly experienced personnel.
Preserving property values requires improved maintenance processes. We shall invest in an IT-based system to handle maintenance and repair jobs better, with a focus on improved project control, resulting in increased performance at a lower cost than today.
We need to develop competence in all four departments and make sure that key personnel do not leave the company. Realis AS shall be one of the preferred employers in the professional real estate market, with good incentive and bonus programs.

Building for the future requires efficient market behavior when new projects are recognized and planned for development. When property development decisions are made, projects must be planned well before building work commences. We will not succeed with this without collaborating better with our various partners - architects, consulting engineers, contracting firms and sub-contractors.
Within our strategy time frame, almost all operational and financial costs can be considered as being fixed and unavoidable. Hence, good profits are made when these costs are covered and this can only be secured when the rent revenues are good and the available unrented space is kept to a minimum. Effective market operation is therefore critical – we want the most attractive tenants and we need to offer efficient and well-functioning areas to let.

Although interest rates are expected to be low in the near future, financial costs are a large part of our total costs and a correct loan to value ratio seems to be 75-80% on newer property and 60-65% on property older than 10 years. Such optimal financial gearing is not alone sufficient; we need to improve our relations with the banks to secure competitive low-cost funding.
Our goals are to make Realis AS within the end of 2023 the preferred company, both for investors, customers and employees in the real estate industry. We will not succeed in this without a constant focus on gaining necessary control over critical success factors as well as measuring our own development in these areas systematically during the next four years.

Realis AS wants to implement a Balanced Scorecard model in 2020 and turns to you for advice. Not all members of management are fully aware of the potentials and pitfalls of Balanced Scorecard systems and you have agreed to make a presentation to management and other key personnel of the company.

Question a

In your presentation, you decide to focus on *six key areas*:

- How to make strategies operational
- Explaining strategic perspectives
- Finding the critical success factors
- Explaining the strategy map
- Finding relevant Key Performance Indicators (KPIs)
- Challenges pertaining to measurement and reporting in critical areas

What are the most important messages you want to convey at the meeting? Present your arguments in a bullet format, with a headline on each main message and necessary explaining text to elaborate further.

Question b

Extract from the strategy summary what you consider as critical success factors and place them in the corresponding strategic perspectives.

Question c

Define Key Performance Indicators that may be relevant as well as practically measurable for Realis AS in the future.