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SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF ECONOMICS

DATA AND DECISION MAKING

Guidelines
to laboratory work
for Master's (second) degree
higher education students
of speciality 122 "Computer Science"
of the study program "Computer Science"

Kharkiv
S. Kuznets KhNUE
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Guidelines to laboratory work are presented to consolidate and deepen knowledge of theoretical and practical material on the methodology of managing complex socio-economic phenomena and processes, deepen the skills in the analysis of socio-economic processes using Statistica and Excel tools.

For Master's (second) degree higher education students of speciality 122 "Computer Science" of the study program "Computer Science".

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Introduction

A large part of management is decision making. It is inherent in almost everything that managers do. Managers obtain information through information systems, verbal communication, and possibly other means. Classic list management tasks include planning, organizing, delegating or directing, coordination or control, reporting and budgeting. Some of these tasks are straightforward an adjunct to decision making, such as planning, delegation, or leadership. Other tasks usually lead to solutions. So, for example, the organization of work in organizational departments and offices requires analysis of the current working situation, and the following a step may be to make a decision to change these processes.

In the same way recruitment of new employees and the assignment of employees to jobs (personnel task) also ends with a management decision. A decision is a choice, a decision maker must have two or more options available and then choose one from the most effective. Thus, decision making is one of the most important tasks of management, which uses the concepts and methods of mathematics, statistics, economics, management and psychology, and which studies the patterns of people's choices, ways of solving various kinds of tasks, and also explores ways of finding the most profitable from possible solutions.

The academic discipline "Data and Decision Making" is selective and is studied in accordance with the curriculum for training Masters within the study program "Business Analytics and Information Systems in Entrepreneurship".

The academic discipline is aimed at forming competences in the use of modern support methods for making economic decisions and being able to use the presented methods, the ability to clearly present results based on the justification of the construction process problem solving, the ability to make a rational choice of justification of the method for solutions to a specific problem and the ability to demonstrate knowledge about modern decision support approaches; application of basic concepts from economics, theory decision making and systems analysis, data analysis and fuzzy multiple analysis.

The object of the academic discipline is data, processes and systems.

The subject of the academic discipline is theoretical and practical issues related to the use of methods of substantiating the decisions made in various spheres of the enterprise activity.

The purpose of the academic discipline is to study modern methods of supporting decision making, research of current problems in the field of decision making in the activities of enterprises and organizations, acquiring the skills to apply these methods to practice for development and justification of complex economic decisions.

Content module 1. Decision-making methodology

Topic 1. The decision-making process, its principles and elements

The seminar session

The seminar class involves work of students in groups of 4 – 6 people with making presentations based on the case tasks. Each question should be considered from an economic and managerial point of view.

Students present their answers and discuss them in the form of a game discussion.

Case 1. The company provides TV, internet, and phone services to customers across the country, primarily in Arizona, Arkansas, California, Louisiana, Missouri, North Carolina, Oklahoma, Texas, and West Virginia.

In 2015, we started our engagement with Client A as a partner of another agency and have provided search engine optimization services since then. We were tasked with building domain authority and increasing traffic to the website, but in the process of doing this, we also became a digital marketing partner for the client by providing outside insights into their overall digital marketing efforts, including paid search campaigns.

The following is a case study in how a little investigative work into the data of a paid search campaign can uncover some very helpful findings to get things turned back around.

The problem.

Every month, we report against the Return on Ad Spend for organic search traffic, branded paid search traffic, unbranded paid search traffic, and any additional paid channels that were being run as part of an experiment for new opportunities (Fig. 1).

Fig. 1. **Return on Ad Spend for organic search traffic**

Return on Ad Spend Findings.

Within our reporting on Return on Ad Spend, we were able to establish trends in Client A's paid search performance and inconsistencies in the alignment between the SEO and PPC agencies.

Client A had changed paid search agencies in May and there were major increases in ad spend that lead to a negative ROI.

Our investigation process.

Client A was already aware of a few issues regarding new geographic targeting implemented by the agency currently managing the Google AdWords campaigns, but through our investigation we were able to establish additional insights into exact causes that contributed to this negative return. To note a caveat, we weren't actually allowed to go into the Google AdWords account directly. As a result, all data that we were able to adequately evaluate came directly from Client A's Google Analytics account.

From this data, we found the following:

• ~17 % year-over-year (YoY) increase in paid search visits to Client A's BuyFlow Storefront (a visitor's initial step to completing a sale);

• this ~17 % increase, however, was offset by a ~11 % decrease in paid search sessions to the second step of the process;

• alarmingly, there was a ~105 % increase in paid search visits to their "Not Serviceable" page – a clear indication of the aforementioned geographical targeting issue.

Ultimately, what was happening was, paid search visitors were starting the conversion process but then leaving the site when they found that they didn't live in one of Client A's service areas.

State Targeting.

Looking deeper into this ~105 % YoY increase, we found that the most significant increases occurred in Texas (118 %), California (331 %), and Missouri (192 %).

Compared to overall traffic, there was an increase in NoService sessions in Texas of 102 %, California of 188 %, and Missouri of 180 %.

While these three states are areas in which Client A provides telecommunication services, its paid search campaigns in Google AdWords were also targeting areas in which they did not provide services.

City Targeting.

The three cities that produced the highest increase of "NotServiceable" sessions were Dallas (80 %), Houston (135 %), San Antonio (198 %), and Los Angeles (302 %).

This data allowed us the opportunity to report on what we were seeing beyond the state-level and offer up suggestions on where we could clean up specific cities/zip codes within Client A's service areas.

Cleaning up this data at both the state and city levels could help improve the quality of site traffic from paid search, increase Quality Scores, and thus provide an opportunity at improved conversion rates and enhanced lead generation efforts.

Keyword Targeting.

Finally, we took a look at the PPC campaigns' keywords, specifically trying to identify any discrepancies that may have existed YoY to contribute to the decrease in Return on Ad Spend.

Upon starting our keyword investigation, we noticed there were some terms added to the campaigns, and set to a broad match modified match type, that were noticeably absent from the Google Analytics data from the previous year.

An example of one of these keywords is the term "Internet".

After this keyword was added to the PPC campaigns using Google AdWords' more restrictive match types – exact and phrase, in addition to broad match modified – it generated an overall spend of $122,467 and a cost-per-click of $6.47 – both of which were higher than when the less-restrictive broad match was being used exclusively ($11,988 in ad spend; avg. CPC of $1.54).

However, once the more restrictive match types were applied, the number of overall conversions (275) and Return on Ad Spend ($23,325) both increased significantly compared to that generated by the broad match – 149 and $11,988, respectively.

Additionally, we found that some ad spend was being wasted on keywords that suggested a need for completely unrelated services, such as the term "uHaul." While these irrelevant terms didn't generate a ton of waste – roughly ~$8,000 and a return of 10 confirmations or $850 ($85 value for confirmations) – this evidence suggested there was definitely an opportunity to pause some keywords to funnel more spend towards more successful keywords.

Overall, there was a significant increase in average CPCs due to a change in match types from broad – which typically produces cheaper clicks but at the risk of less control over who sees the paid ads. The additions of the broad match modified, phrase, and exact match types drove the average CPCs up by 46 cents on branded terms and by $6.15 on unbranded terms.

Our solution.

Too many cities and states were being served ads that could not provide cable and Internet services at those locations. We could tell this was happening based on the increase in Not Serviceable page sessions. We recommended a closer look into the targeting by state and city.

When looking at the limited keyword data, we recommended they turn on a few of the campaigns that were being managed by the previous agency.

The goal behind this recommendation was to not only turn back on the top performing past campaigns but hopefully stabilize the loss in Return on Ad Spend and decrease the number of Not Serviceable page sessions.

The task. Determine the types of recommended solutions, justify the choice. Format your results in the form of a presentation.

Topic 2. Methods and techniques for finding effective solutions

The seminar session

The seminar class involves work of students in groups of 4 – 6 people with making presentations based on the case tasks. Each question should be considered from an economic and managerial point of view.

Students present their answers and discuss them in the form of a game discussion.

Case 2. Walt Disney Culture Case Study: Challenges and Threats Faced.

This report is based on the case study provided in "Reawakening the Magic: Bob Iger and the Walt Disney Company" and has found two major issues. One of the issues must be from your Part A submission. The report will present and analyse the two issues in depth and provide a set of recommendations using the support from peer reviewed journal articles.

1. Introduction. The Walt Disney Company is known for entertaining people and inspiring them through the power of their storytelling, creative minds and innovative technology throughout the world. It was founded in 1923, and was known as the Disney Brother's Studio. But before opening the Disney Brothers Studio, Walt Disney worked in many places as an animator and illustrator in Kansas. As mentioned by Friedman et al. (2016), the Walt Disney Company started with the main vision to provide classical entertainments in the form of 2D cartoons. The Walt Disney Company is a leading international family entertainment along with five business sections: Studio entertainment, direct to customers, interactive media, park and resorts and, Media networks, etc. In 1955 Walt Disney launched Disney land in Anaheim,

California and it quickly became one of the best places where different cartoon characters could be seen. The Walt Disney Company has faced many issues over the years. The main issue faced by them is that they will be able to maintain their high level of status which they have gained over last few decades. In this Walt Disney culture case study the two challenges and all issues which have been faced by the Walt Disney Company have been discussed.

2. *1st strategic issue.* As mentioned by Roper et al. (2016), the Walt Disney Company has experienced different strategic issues. The strategic management has determined that its competitors are taking advantages of its weakness and can easily pull the Walt Disney Company behind in the market. When its competitors found a better way to provide sports program at a very low price to the consumer, the Walt Disney Company did not pay attention to keep up with this technology. This is the main reason Disney lost a majority of its youth audience. The Walt Disney Company also faces challenges from its competitors who have strong presence in the market. The Walt Disney Company has focused on providing entertainment programs according to the taste and preference of the customers. If the company's management does not focus on the changes in the taste of the customers then it will easily lead to its downfall. It is the duty of the company to determine its customers taste and preferences to make its brand more interesting. Disney has faced a lot of criticism in the market. Along with that it also faced motivating response. The company started making changes to attract a large number of customers which may be achieved or can never be achieved. Disney realized that the positive thought has turned into critics. The company got a clear message from the people that the company had started to release an irrelevant program. The company also faces challenges regarding the price of its products. The competitors of Disney are providing the products and programs to the public at a very low price comparing to the cost of product of the company and they can act as a threat for the Disney Company. Disney did not focus on maintaining the technology and new strategies. The positive changes made by the management of the Walt Disney Company have been transformed from positive to a criticism.

2.1. Issue statement.

According to Massetti et al. (2016), Disney is located in America and is a well-known company. Disney characters have played a significant role as an influence and entertaining figure in the lives of most adults these days.

This is one of the most famous companies in the world and the reason behind this is it has used its external environment effectively to achieve its goal. All children love the experience to be a princess or queen and king or a prince. The people who visit Disney land are never bored. Disney land allows visitors to meet their favourite Disney characters, be it animated or live action. The company has many competitors. The competitors of the company enable them to improve and get better and better. Mickey mouse has been characterised as the unofficial mascot of the Disney company for decades.

The company also wants to promote more characters, cartoons and movies. For this they have to analyse all the external factors to set new goals. The management of Disney also started planning according to the needs of the customers and according to their feedback after watching the cartoons and movies to achieve the goals.

Internal environment of the company includes strengths and weaknesses. Disney is a multinational corporation facing internal weaknesses and strengths. Internal environment of Disney totally enclosed its strengths and weaknesses with which the company has faced much criticism. The corporate culture of Disney circulates at all the levels of hierarchy and its workforce is aware of its principles. It has adopted different backgrounds. It is one of the largest multinational companies. It has generic hierarchical structure and also has a maintained balance of power and additionally it has a large amount of resources. As opined by DeMicco et al. (2016), the company faces challenges regarding price of its products and also faces a strong competition in the market. Disney has started losing a good number of subscribers for ESPN. The company faced much criticism in the market along with that it also experiences motivating response.

2.2. Analysis.

External environment: Opportunities and Threats.

Opportunities: According to McCoskey et al. (2018), these opportunities can be determined through the SWOT analysis. In Disney opportunities are the external strategy factors which lead to an increase in revenue. The Walt Disney Company needs to focus on the following opportunities:

• growth in various industries;
• growth of developing market;
• technological innovation.

The Walt Disney Company got an opportunity to adopt all the new technologies, for example digital technologies for improvement of the business.

The Walt Disney Company also got an opportunity of growth in various industries which leads to the growth of its business through the managerial approaches. The growth of developing market is an important factor which also creates an opportunity for the company to develop their business into the market. Through expansion, innovation and diversification the company can grow its revenue.

Threats: The threats have been identified through the SWOT analysis. The Walt Disney company management needs to handle the following threats towards business:

• competition – digital;

• content piracy;

• technological disruption.

The competitors of the Walt Disney Company offer movies which are similar to the ones provided by the Disney-Marvel studio. Technological disruptions are present in the Walt Disney Company and can reduce the profit of the company. Digital piracy reduces the revenue of the company. The Walt Disney Company needs to apply SWOT analysis to increase its advantages against technological disruption and piracy.

Internal environment: strengths and weaknesses. Strengths: Strength of the business protect the company from the problems in future. In SWOT analysis the internal factor strengthens the growth of the business by supporting the strategies of management which leads to growing the business. The following are the strengths of the Walt Disney Company:

• a grand portfolio of popular products;

• a popular and strong brand;

• strong cooperative growth.

Disney is a very popular brand all over the world. The portfolio of popular products is growing and this is one of the important strengths of the business. The company's movies, programs, amusement park, cartoon characters and services are increasing. As opined by Holcomb et al. (2017), the company has gained high popularity from the public. This is one of the most important strengths of the company.

Weaknesses: The SWOT analysis given in this Walt Disney case study determines the weaknesses of the Walt Disney Company which lead to a downfall of the company and can affect the business growth and development. The following are the weaknesses of the company on which the Disney needs to focus:

• limited innovation;
• limited expansion of parks;
• limited diversification.

The Walt Disney Company has faced many weaknesses which have been identified by the SWOT analysis. The company has many limited innovations. The company needs to innovate continuously for the development of the product. In adopting new technologies the company has faced reactive approaches instead of aggressive approach. The company needs to focus on expansion of its amusement park and all other different types of park. Limited expansion of park is a weakness for Disney. According to Koontz et al. (2019), the company has focused on quality of product and features instead of focusing on continuous innovations. Limited diversification is also a weakness which has been identified during this analysis of Disney. Corporate culture: Business corporate culture is related to American culture. According to Xiaoli et al. (2019), the business is successful because it has a corporate culture that gives power to the employee to improve their performance and profit of the company. The corporate culture gives support in managing the growth strategy and opportunities to the corporation. As per Li et al. (2018), this culture puts emphasis on the innovations which motivates the company to develop its product which matches with the new technologies and trends in the entertainment industry, mass media industry and in the amusement parks and resorts industry.

2.3. Recommendations.

It is recommended in this Walt Disney case study that the company focus on improving the competitiveness. It needs to focus on how to get success in the international markets and it also needs to focus and resolve all the issues associated with the organisation. It is recommended that the company continue its innovations to increase its brand image in the market and to stay in the competition. As per Edwards et al. (2018), the company needs to focus on its mission and vision and also needs to identify threats. The company should release movies and characters according to the taste and preferences of the consumer and after getting their feedback. It is recommended in this Walt Disney case study that the company buy the cheapest system which has been adopted by the company, means to adopt any operation so that it reduces the price with the same quality. Reducing price with the same quality helps the company to maintain its customers and will bring back those customers which have been lost to competitors.

The company needs to improve its organizational culture by providing support for deviation from family orientation. This support allows the company flexibility in some part of the international market. People are focusing on internet more than TV. This is the opportunity for Disney to expand its market. The company could be doing better by considering the share from acquisitions and by considering the slow growth of the divisions which includes ABC.

3. *2nd Strategic Issue*. As opined by Pelletier-Gagnon et al. (2017), the Walt Disney Company faces many challenges in formulation of strategy. The biggest problem the Walt Disney Company has been facing in recent years is decreasing in subscribers to its network, ESPN. In 2010 it had 100 million subscribers, the figure dropped in 2015 to 92 million. This shows the decline of the Walt Disney Company, and its revenue in media network parts fell by 2 % year over year in 2017. According to Brito et al. (2018), its operating income also decreased by 4 %. Star wars franchise and box office help the studio entertainment section bring Disney back in the game. This represents a major problem that networks need to deal with. The company needs to convert TV to internet services. One of the important strategic issues that the world Disney has been facing is losing a good number of subscribers in the ESPN. As per Aleong et al. (2018), when the company began its journey it had more customers compared to the recent years. It is holding very few customers in the entertainment program and sports program network. The company is facing this issue because it is not applying the new technologies which have been applied by its competitors. That is the reason it is facing a tough competition in the market. The company faces challenges in adopting the new technologies. The competitors of the company have already adopted the new technologies, but the Walt Disney Company has focused more on providing quality product and in making strategy instead of focusing on the recent trend and taste and preference of the consumer.

3.1. Issue statement.

According to Warrick et al. (2017), the Walt Disney Company can be differentiated by its fundamental practice and knowledge. Disney has a clear corporate strategy which has been contributed to the success of the company and gives importance to its brand image. The company's strategy is to make exclusive and magical products. The biggest problem the Walt Disney Company has been facing in recent year is a decreasing number of subscribers for their ESPN network. The company faces challenges in adopting the new technologies. The corporate culture of the Disney circulates at all the levels of hierarchy and its workforce is aware of its principles. It has adopted different backgrounds. It is one of the largest multinational companies in the world. The company needs to convert TV to internet services. Disney has announced a creation of direct customer in international unit. The company is facing this issue because it is not applying the new technologies which have been applied by its competitors and it is one of the reasons for the growing competition in the market.

3.2. Analysis on issues.

Trend analysis: In trend analysis in 2014 the gross domestic product was 4 % and the next 5 years it became 3 %. The unemployment rate had decreased by 9 %. Disposable income of the company increased by 9 % in the next 10 years and in 2013 its consumer spending increased up by 5 %. State spending went up globally 3.2 % – 4.6 % of gross domestic product (McCoskey et al., 2018).

SWOT analysis: The SWOT analysis model helps an organization in identifying the internal strategic factors such as strengths and weaknesses and external strategic factors (Fig. 2) such as opportunities and threats. The Walt Disney Company has applied the SWOT analysis model to identify its internal and external environmental factors.

Fig. 2. **A SWOT analysis model**

Strengths: The strengths of the company can be identified by the SWOT analysis which has been applied to determine the internal factors of the organization. The company has gained high popularity from the public. This is one of the most important strengths of the company. The brand of the company has a very great image in the eye of the public. The Walt Disney Company has strong cash flow which helps the company to expand its new projects. The company has a lot of products and services and has developed a large distribution network. The company invested resources in the development and training process of the employee and the workers. The brand of the company is very important and the company wants to introduce new innovative products in the market. In this the strong brand portfolio is very important. It is also one of the strengths of the company because they only promote the product of the company which the customers look for and can gain maximum benefits out of the products and services.

Weaknesses: According to O'Toole et al. (2016), the SWOT analysis model has been applied by the organization to determine the weaknesses of the company. The Walt Disney Company has high cost structure and has high attrition rate, and it needs to invest a lot of money compared to its competitors in development and training programs of the employees. The current asset ratio represents that the company needs to use its cash in a better manner than the way it's doing at present. Due to high rate of its product it's losing its opportunities. As per Isabella et al. (2017), the Walt Disney Company is focusing on quality of the goods not on the rising price which is not good for demand forecasting. The most important factor which can lead to a downfall of the company is its inability to adopt continuous innovation. In the viewpoint of Voigt et al. (2017), the company is releasing irrelevant programs and characters which public does not like. The company needs a large amount of capital in executing an innovation and entertaining and development program of its employees.

Opportunities: According to Smagorinsky et al. (2016), the SWOT analysis model has been used to identify the external factors and the model has been applied by the company to identify the opportunity so that the company can attain those opportunities for its development. As opined by Kelleher et al. (2016), the Walt Disney Company has got many opportunities in expansion of its business. The cost of transportation decreases because of less shipping price and this is an opportunity for the Walt Disney Company's products by which the company can earn profit and can provide benefit to its consumers to gain market share. New trends and technologies in the market is an opportunity for the company to expand its business by building a new revenue stream in their new products. The Walt Disney Company also invested money in online streaming. Through this the company gets to know more about the needs of the customer. The government free trade agreement and deduction of new technology also provide an opportunity to the Walt Disney Company to enter into a new market (Haslanger et al. 2019).

Threats: The SWOT analysis tool has been used to identify the threats of the company. This is important for the advancement of the company to be aware about the threats in the market. In the viewpoint of Van de Vijver et al. (2016), the new technology which has been adopted by the competitors can be a threat to the industry. Rising price of raw materials can also be a threat to the profit of the Walt Disney Company. The competitors of the Walt Disney Company can easily make substitute of the products provided by the Disney. Technological disruptions in the Walt Disney Company can reduce the profit of the company. The games, movies and characters which have been produced by the Walt Disney Company can easily be shown by the competitors at a less cost comparing to the Disney's cost. The Walt Disney Company is a very popular company and needs a large amount of capital to enter into a market but its competitors have the advantages that they can easily enter into the market with a low capital.

3.3. Recommendations.

• This case study of Walt Disney Company recommends that the company should make a strategy which reduces the expenses during the production of their products in order to decrease the price of the product. This will enable the company to provide a quality product to their consumer at a very low price. If the company provides low quality products to the consumers then it will lose its consumers who give value to quality products rather than price.

• The company needs to maintain the quality along with an affordable price. This way the company will be able to maintain its position in the market and it will continuously get new opportunities to expand its business. As opined by de Aguillar Pinho et al. (2017), it has been recommended to the company that it find out an alternative strategy.

• The company needs to release the cartoons and characters according to the interest and preference of the consumers because the interest of the audience may change. If the consumers do not like the characters and entertainment films then there will be a decline in the income of the company, and customers will not purchase the product.

• It is recommended in this case study of Walt Disney Company that the company should predict the reaction of the public introducing the new characters before releasing them. The feedback and response from the customer will help the company to understand their interest.

• The company should produce different types of products in order to remain stable in the market. The company should attract the market through their innovative and educational product which is easy rather than provide entertainment forms of products. The management of the Walt Disney Company needs to make relevant decisions for the expansion of the strategies to achieve the goal of the company.

Conclusion.

The Walt Disney Company was established in 1923 and it is a very popular and strong company. They started the Walt Disney Company to provide classical entertainments in the form of 2D cartoons. The Walt Disney Company is a leading International family entertainment conglomerate. The Walt Disney Company has faced many issues. Two main strategic issues have been explained in the above report. Disney has faced much criticism in the market along with that it also faces motivating response and has faced tough competition. The external and internal environment of the company has been explained in the above report. External environment is events outside a company which can easily affect the internal environment. Internal environment of the Walt Disney Company includes its strength and weakness with which the company has faced a lot of criticism. The SWOT analysis has been applied to identify the internal and external factors of the organization in the above Walt Disney case study. The Walt Disney Company faces many challenges in the formulation of its strategy. It has been evaluated that the trend analysis and SWOT analysis is a very important tool which has been used to analyse the different factors of the organization, and recommendations have been made which are very important for the company to adopt. The company should focus on the recommendations made in the above case study of the Walt Disney Company.

Topic 3. Economic and mathematical methods of decision making

The seminar session

The seminar class involves work of students in 4 groups to make presentations based on the case tasks. Each question should be considered from an economic and managerial point of view.

Students present their answers and discuss them in the form of a game discussion.

Case 1. Power in voting: the paradox of the chair's position.

Many applications of n-person game theory are concerned with voting, in which strategic calculations are often rampant. Surprisingly, these calculations can result in the ostensibly most powerful player in a voting body being hurt. For example, assume the chair of a voting body, while not having more votes than other members, can break ties. This would seem to make the chair more powerful, but it turns out that the possession of a tie-breaking vote may backfire, putting the chair at a disadvantage relative to the other members.

In this manner the greater resources that a player has may not always translate into greater power, which here will mean the ability of a player to obtain a preferred outcome. In the three-person noncooperative voting game to be analyzed, players are assumed to rank the possible outcomes that can occur. The problem in finding a solution is not a lack of Nash equilibria, but too many. So the question becomes, which, if any, are likely to be selected by the players? Specifically, is one more appealing than the others? The answer is "yes", but it requires extending the idea of a sure-thing strategy to its successive application in different stages of play.

To illustrate the chair's problem, suppose there are three voters (X, Y, and Z) and three voting alternatives (x, y, and z). Assume that voter X prefers x to y and y to z, indicated by xyz; voter Y's preference is yzx, and voter Z's is zxy. These preferences give rise to what is known as a Condorcet voting paradox because the social ordering, according to majority rule, is intransitive: although a majority of voters (X and Z) prefers x to y, and a majority (X and Y) prefers y to z, a majority (Y and Z) also prefers z to x.

(The French Enlightenment philosopher Marie-Jean-Antoine-Nicolas. Condorcet first examined such voting paradoxes following the French Revolution).

So there is no Condorcet winner – that is, an alternative that would beat every other choice in separate pairwise contests.

Assume that a simple plurality determines the winning alternative. Furthermore, in the event of a three-way tie (there can never be a two-way tie if there are three votes), assume that the chair X, can break the tie, giving the chair that would appear to be an edge over the other two voters, Y and Z, who have the same one vote but no tie-breaker.

Under sincere voting, everyone votes for his first choice, without taking into account what the other voters might do. In this case, voter X will get his first choice (x) by being able to break a three-way tie in favour of x. However, X's apparent advantage will disappear if voting is "sophisticated".

To see why, first note that X has a sure-thing, or dominant, strategy of "vote for x"; it is never worse and sometimes better than any other strategy, whatever the other two voters do. Thus, if the other two voters vote for the same alternative, x will win; and X cannot do better than vote sincerely for x, so voting sincerely is never worse. On the other hand, if the other two voters disagree, X's tie-breaking vote (along with his regular vote) will be decisive in x's selection, which is X's best outcome.

Given the dominant-strategy choice of x on the part of X, then Y and Z face reduced strategy choices, as shown in Fig. 3 for the first reduction. (It is a reduction because X's strategy of voting for x is taken as given).

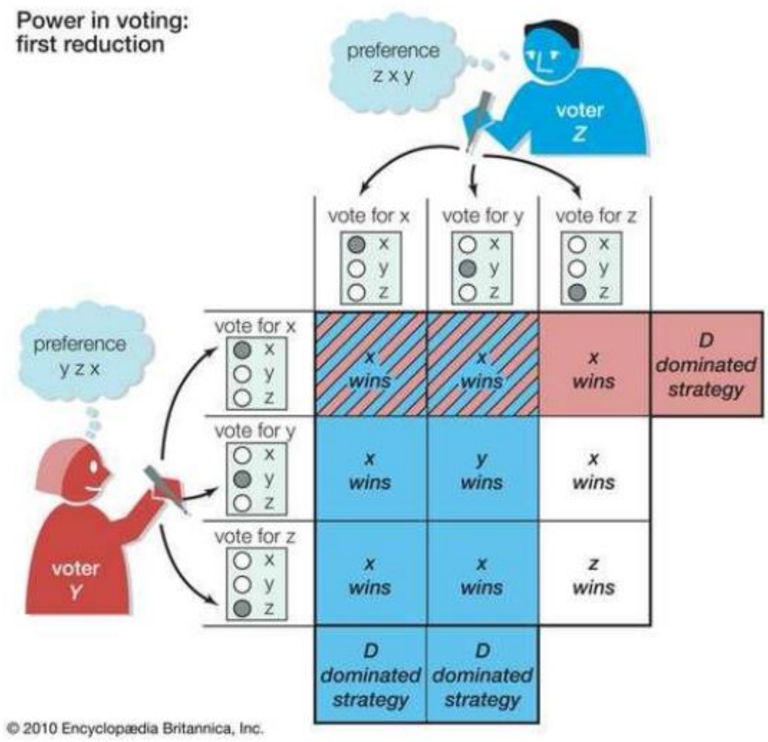

Fig. 3. **The first reduction table**

In this reduction, Y has one, and Z has two dominated strategies (indicated by D), which are never better and sometimes worse than some other strategy, whatever the other two voters do. For example, observe that "vote for x" by Y always leads to his worst outcome, x. This leaves Y with two undominated strategies, "vote for y" and "vote for z", which are neither dominant nor dominated strategies: "vote for y" is better than "vote for z" if Z chooses y (leading to y rather than x), whereas the reverse is the case if Z chooses z (leading to z rather than x). By contrast, Z has a dominant strategy of "vote for z", which leads to outcomes at least as good as and sometimes better than his other two strategies.

When voters have complete information about each other's preferences, they will eliminate the dominated strategies in the first reduction. The elimination of these strategies gives the second reduction matrix, as shown in Fig. 4. Then Y, choosing between "vote for y" and "vote for z" in this matrix, would eliminate the now dominated "vote for y" because that choice would result in x's winning due to the chair's tiebreaking vote. Instead, Y would choose "vote for z", ensuring z's election, which is the next-best outcome for Y. In this manner z, which is not the first choice of a majority and could in fact be beaten by y in a pairwise contest, becomes the sophisticated outcome, which is the outcome produced by the successive elimination of dominated strategies by the voters (beginning with X's sincere choice of x).

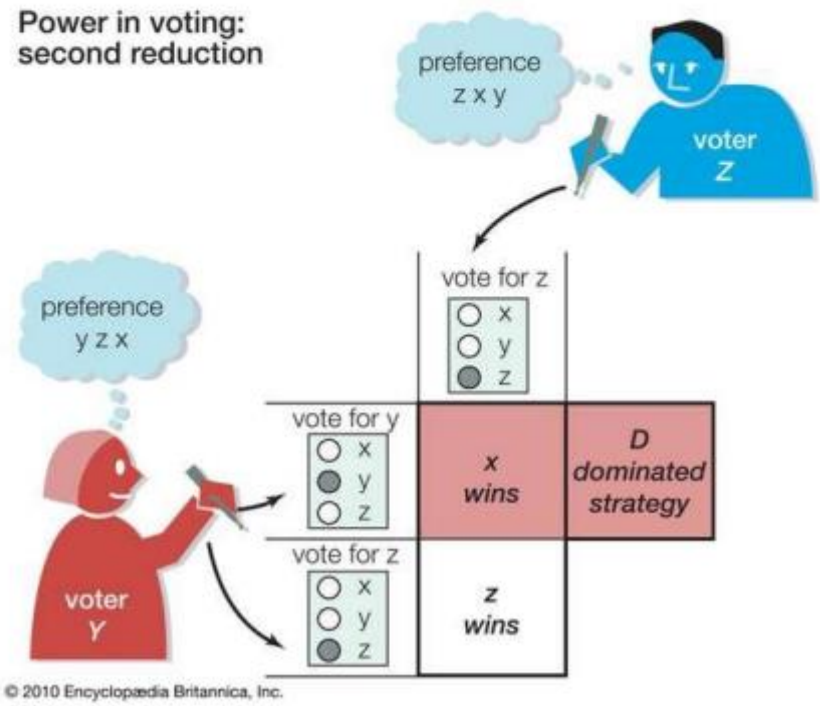

Fig. 4. **The second reduction table**

Sophisticated voting results in a Nash equilibrium because none of the players can do better by departing from their sophisticated strategy. This is clearly true for X, because x is his dominant strategy; given X's choice of x, z is dominant for Z; and given these choices by X and Z, z is dominant for Y. These "contingent" dominance relations, in general, make sophisticated strategies a Nash equilibrium.

Observe, however, that there are four other Nash equilibria in this game. First, the choice of each of x, y, or z by all three voters are all Nash equilibria, because no single voter's departure can change the outcome to a different one, much less a better one, for that player. In addition, the choice of x by X, y by Y, and x by Z resulting in x is also a Nash equilibrium, because no voter's departure would lead to his obtaining a better outcome.

In game-theoretic terms, sophisticated voting produces a different and smaller game in which some formerly undominated strategies in the larger game become dominated in the smaller game. The removal of such strategies – sometimes in several successive stages – can enable each voter to determine what outcomes are likely. In particular, sophisticated voters can foreclose the possibility that their worst outcomes will be chosen by successively removing dominated strategies, given the presumption that other voters will do likewise.

How does sophisticated voting affect the chair's presumed extra voting power? Observe that the chair's tie-breaking vote is not only not helpful but positively harmful: it guarantees that X's worst outcome (z) will be chosen if voting is sophisticated. When voters' preferences are not so conflictual (note that the three voters have different first, second, and third choices when, as here, there is a Condorcet voting paradox), the paradox of the chair's position does not occur, making this paradox the exception rather than the rule.

Content module 2. Using modern methods of analytical data processing

Topic 4. Methods of evaluation of management decisions

The seminar session

The seminar class involves work of students in groups of 4 – 6 people with making presentations based on the case tasks. Each question should be considered from an economic and managerial point of view.

Students present their answers and discuss them in the form of a game discussion.

Case 1. The Instagram Stories audience has exceeded 500 million users per day.

Publications in the Instagram Stories section are viewed by 500 million users per day. In June 2018, this figure was 400 million, according to the latest statistics on the service, shared the head of Facebook, Mark Zuckerberg, in a post dedicated to the results of the fourth quarter and plans for 2019.

According to him, interest in "stories" is also growing among advertisers. Currently, about 2 million companies buy Stories Ads on Instagram and Facebook. The head of Facebook did not name the daily audience of Instagram, but noted that more than 2 billion people visit at least one of the resources owned by the company every day. Mark Zuckerberg also spoke about the future plans of the company. Yes, if 2018 was dedicated to solving security-related issues, then 2019 will be the year of new features. In particular, the company plans innovations in the following areas:

1) shopping and commerce on Instagram;

2) exchange of messages. What exactly is planned to be implemented, Zuckerberg has not clarified, but noted that this year users will feel that messengers become the center of social interaction. Perhaps he meant plans for combining the technical infrastructure of Messenger, Instagram and WhatsApp;

3) Facebook groups. The company predicts that a point will soon be reached where communities become the center of interaction on Facebook;

4) Facebook Watch. Zuckerberg hopes that a new Watch section in 2019 will become more popular. Currently, it is visited by about 400 million people users per day.

Facebook presented financial results for the 4th quarter of 2018 and the year as a whole. Despite a year of scandals, the company's performance continues to grow.

Questions.

1. Describe the main advantages of advertising in social networks.

2. What prospects for deepening business interaction with customers are possible thanks to messengers?

3. What is the secret to the success of the Stories Ads tool?

Task 1.

1. *An example of building an optimal portfolio of securities*.

Consider a conditional situation where an investor can form a portfolio of various types of securities. The expected values of efficiency and standard deviation are given in Table 1, where j is the portfolio number; m_j is securities; σ_j is standard deviation.

Table 1

Various combinations of securities in the portfolio

j	1	2	3	4	5	6
m_j	11	10	9	8	7	6
σ_j	4	3	1	0.8	0.7	0.7

Guidelines

If the investor distributed his capital equally in the securities of only the first two types, then the expected efficiency of the portfolio will be slightly less than when buying only one type:

$$m_p = \frac{1}{2}(11+10) = 10.5, \tag{1}$$

$$\sigma_p = \frac{1}{2}\sqrt{4^2+3^2} = 2.5, \tag{2}$$

where m_p is the expected income;

σ_p is risk measures of the portfolio.

Table 2 shows the results of calculations of the expected income and risk measures of a portfolio made up of the first two types of securities, of the first three, etc. Shares of securities are the same.

Table 2

Calculation of the measure of risk and expected income from the portfolio

j	2	3	4	5	6
m_p	10.5	10	9.5	9	8.5
σ_p	2.5	1.7	1.23	1.04	0.87

Analysis of the results of Table 2 allows us to conclude that with an increase in the types of securities in the portfolio, the risk decreased by 3 times ($\sigma_p = \frac{2.5}{0.87}$), and the expected effect decreased by only 20 %.

2. *An example of choosing uncorrelated shares of enterprises included in the portfolio of securities*.

Changes in exchange prices for the shares of "Kharkivenerho" and "Kyivenerho" are proportional to changes in the inflation index. The inflation index changes stochastically, but the efficiency of the exchange rates of both types of shares always changes in the same direction. Diversification by buying shares of these two companies is useless, since the performance of the portfolio will be as random as the change in the inflation index.

3. *An example of direct correlation for the formation of the structure of a portfolio of securities*.

Condition. Let the shares of companies A and B have, respectively, profit rates and risk measures m_1 = 12 %, m_2 = 16 % and σ_1 = 6 %, σ_2 = 9 %. The proportion of money invested in shares of company A is 60 %. It will determine the rate of profit and risk measures of the entire portfolio, if it is known that the correlation coefficient of these two types of shares is equal to 1.

Solution. Substituting the given conditions of the example into the formulas gives:

$$m_p = 12 \times 0.6 \times 16 \times 0.4 = 13.6;$$

$$V_p = 0.6^2 \times 6^2 + 0.4^2 \times 9^2 + 2 \times 0.6 \times 0.4 \times 6 \times 9 = 53.44;$$

$$\sigma_p = \sqrt{53.44} = 7.3.$$

Here, V_p is the ratio coefficient.

Analyzing the values found, it can be noted that the case of direct correlation between the shares of the portfolio is not interesting to the investor, since the expected rate of profit decreases proportionally when the risk decreases.

4. *An example of calculation using the confidence equivalent method*.

Condition. The company "RAS" calculated that for 5 years it will have the following cash flows: 7,000 UAH, 6,000 UAH, 5,000 UAH, 4,000 UAH, 3,000 UAH.

The confidence equivalent factors for the same periods are, respectively, equal to: 98 %, 80 %, 70 %, 60 %, 40 %. The initial investment in the project is 11,000 UAH, the safety rate is 10 %. Using the equivalent confidence method, determine whether RAS will accept this project.

The conditions of the task and the results of the solution are summarized in Table 3.

Table 3

The results of solving the problem

Year	Expected cash flows	Confidence equivalent factor	Safe cash flows	Today's value factor	Today's cash flow value
1	70,000	0.95	6,650	0.909	6,046
2	60,000	0.8	4,800	0.826	3,967
3	50,000	0.7	3,500	0.751	2,672
4	40,000	0.6	2,400	0.683	1,644
5	30,000	0.4	1,200	0.621	745
Total present value of cash flows					15,074

According to the condition of the problem, the initial investment in the project is 11,000 UAH. Therefore, the net present value of this investment project is

$$15{,}074 - 11{,}000 = 4{,}074 \text{ UAH}.$$

Since the value obtained is positive, the project can be recommended for execution.

Task 2. Let the cash flows for project A be: 1,000 UAH in the1st year, 1,500 UAH in the 2nd year. Project B: 1,800 UAH in the 1st year, 700 UAH in the 2nd year. The initial investment of each project is 1,600 UAH. Which project is more risky if the discount rate is expected to change from 10 % to 12 %? In order to answer this question, it is necessary to determine the net present value of each project with different discount rates.

Solution. To determine the net present value of the project, subtract the initial investment from the discounted cash flows. The calculation results are given in Table 4.

Table 4

Problem solution results

<table>
<tr><th>Project</th><th>Years</th><th>Expected cash flow</th><th>Today's value factor (10 %)</th><th>Net present value</th><th>Total cash flows</th><th>Today's value factor (12 %)</th><th>Net present value</th><th>Total cash flows</th></tr>
<tr><td rowspan="2">A</td><td>1</td><td>1,000</td><td>0.909</td><td>909</td><td rowspan="2">2,148</td><td>0.893</td><td>893</td><td rowspan="2">2,088.5</td></tr>
<tr><td>2</td><td>1,500</td><td>0.826</td><td>1,239</td><td>0.797</td><td>1,195.5</td></tr>
<tr><td rowspan="2">B</td><td>1</td><td>1,800</td><td>0.909</td><td>1,636.2</td><td rowspan="2">2,214.4</td><td>0.893</td><td>1,607.4</td><td rowspan="2">2,165.3</td></tr>
<tr><td>2</td><td>700</td><td>0.826</td><td>578.2</td><td>0.797</td><td>557.9</td></tr>
</table>

For project A, the net present value is:
at 10 %: 2148 − 1600 = 548 UAH.
at 12 %: 2088.5 − 1600 = 488.5 UAH.
For project B, the net present value is:
at 10 %: 2214.4 − 1600 = 614.4 UAH.
at 12 %: 2165.3 − 1600 = 565.3 UAH.
Changes in net present value for projects are:
Project A: (488 − 548) / 548 = −0.11,
Project B: (565.3 − 614.4) / 614.4 = −0.08.

Analyzing the obtained data, we can conclude that with an increase in the discount rate, the net present value (NPV) of projects falls, but at different rates. Thus, the heart rate for project A falls by 11 %, and for project B by 8 %. Therefore, project A is more responsive to changes in the discount rate and therefore more risky. The investor must invest in project B.

Task 3. The investor determined that over the past years, the average annual returns on the securities market amounted to 5 %. Income on various shares is: 10 % for firm A; 5 % firm B; 3 % for firm C. Determine the least risky stocks.

Solution. In order to determine the least risky stocks, it is necessary to use the sensitivity coefficient β. So, for the above firms, this coefficient is

$$\beta A = 0.1 / 0.05 = 2,$$

$$\beta B = 0.05 / 0.05 = 1,$$

$$\beta C = 0.03 / 0.05 = 0.6.$$

Since Firm C shares have a sensitivity factor below 1, they are considered less risky. These results are illustrated in Fig. 5.

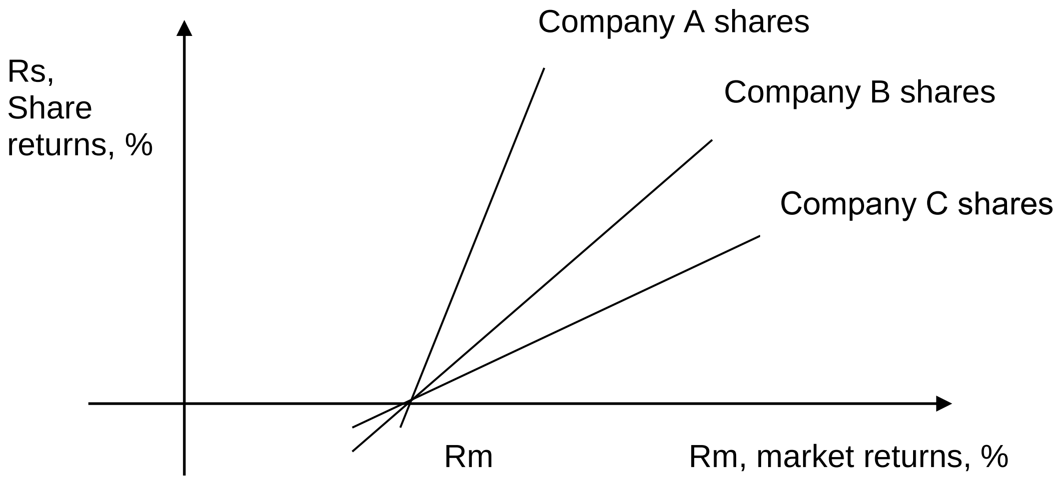

Fig. 5. **The relationship between stock returns and market returns**

Topic 5. Business decision support systems. Data-driven decision making

The seminar session

The seminar class involves work of students in groups of 4 – 6 people with making of presentations based on case tasks. Each question should be considered from an economic and managerial point of view.

Students present their answers and discuss them in the form of a game discussion.

Case 1. Driving the digital revolution through innovation: the Sony experience.

Introduction. During the 20th century, the pace of technological progress increased sharply. The digital revolution will lead to further major steps forward. This case study looks at how Sony has been able to stay at the forefront of new technology.

Sony Corporation is a leading product manufacturer of audio, video, communications and information technologies for consumer and professional markets. Its music imaging and computer entertainment made Sony one of the most comprehensive companies in the world. Founded in 1946, Sony has been at the forefront of technological advancements and now has 1,041 consolidated companies, 65 subsidiaries and more than 177,000 employees worldwide. For the year ending March 1999, Sony recorded worldwide sales that exceeded $56 billion.

Sony has developed a wide range of products that includes products that have become an integral part of the modern lifestyle; the first Japanese magnetic tape and tape recorder in 1950, transistor radio in 1955, first all-transistor television in 1960, first color VCR in 1971. In 1979, Sony released the Walkman Personal Stereo, which sold 150 million units worldwide. It is the best-selling consumer electronics product in history that has become a fashion in the life of a whole generation. Compact discs and MiniDisc systems have revolutionized the music industry, and more recently, Sony introduced DVD-Video.

Sony has not only been a leader in the consumer electronics market, but has also become a major player in the world of professional broadcasting, telecommunications, PC technology, and now the Internet. The positioning of Sony brand products was no less important, with an emphasis on quality and innovation.

Markets.

Today, the world of consumer electronics can be divided into four separate markets:

- an entertaining world of music and games;
- a sector of personal computers;
- communication with cellular phones;
- the wired world of television, video and cable boxes.

These four market segments are rapidly converging as digital technologies and dramatically increase the potential in each area. For example, television to date has been largely limited in terms of content and application, but is essentially just a box of electronics. Many of the newest televisions have the ability to access the Internet, and many experts believe that the future will be the integration of the personal computer and TV. Sony's goal is to create a home network environment from which consumers can access specific video or audio whenever they want.

Expectations with innovation. In order to harness the potential of digital technology for the enjoyment of people around the world, Sony has developed a concept called Digital Dream Kids. Sony strives to identify the dreams of a younger generation of digitally literate consumers and translate them into unique, fun products and exciting applications, delivering products that make their customers' dreams come true. Achieving this requires a seamless fusion of content, hardware and technology. This concept has become central to Sony's corporate strategy.

The key to success in this complex and highly competitive technology market is effective innovation and continuous development of new products. Any development of a new product must go through several stages. New products must be conceived, a process of imagination, creativity and inspiration. These new ideas must then be reviewed and evaluated from both a production and financial perspective. Successful ideas will be developed in a lab and undergo rigorous marketing testing before they can be launched. Market research is extremely important in these processes, both of the potential market and of the product, but often with innovative products such as the PlayStation and the Walkman, Sony anticipates a desire that consumers have not yet appreciated. Sony has literally created a market for these products. Market research is vital to support consumer dreams.

Sony's designers and engineers must not only be highly skilled in their fields, but also empathize with Digital Dream Kids. All research and developments are carried out using Sony's "earth approach", designed to use fewer natural resources in production and operation and in line with the overall corporate mission. Research is like short-term, looking at specific products, and long-term, researching, for example, new materials or bionic processes.

Digital revolution. Television has done more to shape the way we live than most inventions of the 20th century. Television is now at the beginning of a digital revolution that will transform media over the next decade. Until 1998 the television image was broadcast only using an analog system, that is, radio waves were used to transmit the signal. Not only does this consume a large amount of radio frequency spectrum, but these waves are easily distorted, causing interference and blurry images.

Digital TV uses the same language as computers and CDs, breaking down information into binary bits, a series of ones and zeros, which are then transmitted to the TV. Unlike analog, these signals cannot be degraded, resulting in significantly better picture and sound quality.

Reception via aerial, satellite or cable meant that consumers could now receive up to 164 different channels, as well as home shopping, banking and information services. Internet access and cheaper phone calls are also available.

Partnership. A series of business alliances and partnerships as with computer and broadcasting companies strengthened Sony's position in both these markets. Sony helped develop digital formats for audiovisual products, starting with CDs. It is currently advancing its mission of audiovisual and informational consolidation technologies. Its product range has put the company in a unique position to be able to do this. All further product development must follow Sony's Video Audio Integrated Operation (VAIO) strategy so that all products introduced to the market are not only compatible between themselves, but over time they could become one. Connectivity offers much more flexibility than traditional stand-alone products. For example, new Sony digital video cameras have an interface that allows you to download images directly to a PC for editing. In June 1999, Sony launched the WEGA digital flat widescreen TV, which includes a suite of add-ons to expand the set's potential and state-of-the-art digital picture and sound quality. Digital television is evolving so that in the future it will satisfy all the needs of consumers, a one-stop shop for entertainment.

Progress is market pioneers. The speed of technological progress has caused fundamental changes in corporate structure, as Sony Corporation has adopted a horizontal rather than a vertical organizational structure for the first time in its fifty-year history. It was designed to speed up decision-making and market responsiveness. Sony had to restructure all ten of its separate product companies so that they could use common platforms using PC technology. This is a long-term strategy, and success cannot be measured by short-term market shares. As Nobuyuki Idei, president of Sony, said in 1995, "The digital revolution will shake up the entire business platform, so brand image and manufacturing power and even the best technology will not be enough. As the information and digital revolution unfolds, Sony will continue to transform dramatically".

In these conditions, marketing becomes key. As Idei noted in 1995, "Marketing is not just a function of Sony, it's a cornerstone of our business philosophy. We are committed to a process of continuous technological innovation, and marketing plays an important role in this process". Sony has always believed that good marketing involves market discovery, which amounts to market creation. Simply producing products that meet current market needs will cause the firm to fall behind in the long run.

Thus, the central place in Sony's marketing mix is occupied by an innovative product that creates a market and creates demand from the consumer.

Throughout its history, Sony has been associated with unique products based on advanced technology and focused on performance, ease of use and design. Unlike its main rivals, in an extremely competitive market, Sony hasn't been the biggest spender when it comes to promotion. Sony uses a combination of television advertising, national press, consumer, trade and trade magazines. Editorial features and double and single page advertising in newspapers, youth magazines and lifestyle magazines are consumer oriented in line with the overall Digital Dream Kids strategy, an example of advertising and marketing strategies aligned with corporate objectives. Recent advertising campaigns have accompanied this "Do you dream at Sony?" a tagline that has special meaning for all of Sony's stakeholders.

Continuous improvement. All of Sony's factories are driven by the desire to improve quality and reduce costs by using lean manufacturing and just-in-time manufacturing technology to maintain a competitive cost advantage and therefore lower prices. Sony also tries to instill a belief in "kaizen", or continuous improvement, throughout the organization, always striving to find better methods of production of their products. This is reflected in significant investments in research and development, not only in products, but also in production processes. Sony also tries to convey this philosophy to its suppliers and partners. In addition, the development of a highly efficient distribution network, from the factory to the retailer and the customer, helped build the brand image, making Sony one of the most respected names in the world. Sony calls this line of contact the "value chain".

Conclusion. The impact of technological changes on the firm usually considered an external influence. Taking such an important role in driving the markets forward for through innovative research and development, Sony has been able to become a proactive force rather than a reactive one. By internalizing most of its technological advances, Sony has placed itself in a strong position to achieve its goals and objectives. However, Sony was only able to achieve this by being willing to change and adapt from within.

Questions for discussion.

1. Determine the focus of Sony's development and its competitive advantages that allowed it to be a leader for a long time.

2. Determine what made Sony a proactive market force.

3. What is the focus of improving the company's internal environment?

4. Which of the management functions is dominant for the development of the firm?

5. Specify the features of the firm's interaction with the external environment (partners).

Case 2. Starbucks is the largest chain of coffee shops in the world. It is believed that for Americans, the brainchild of Howard Schultz is "the place between work and home". Over the past few decades, Starbucks has become one of the symbols of America, not inferior in popularity to McDonald's.

In addition, the company began foreign expansion with variable success. Somewhere the Starbucks network has become popular, as in the USA, and somewhere it has not caught on at all (for example, only a few of the company's coffee shops have opened in Austria, and expansion is not planned). And the history of Starbucks began back in 1971 in Seattle.

The history of the company. Starbucks was founded by three coffee lovers: English teacher Jerry Baldwin, history teacher Zev Ziegal, and writer Gordon Bowker. They accumulated $1,350 each, borrowed another $5,000, and in 1971 opened a small store in Seattle (Washington) selling high-quality coffee beans and equipment for its preparation. This happened at a time when coffee consumption in America had already been declining for a decade. In fact, the coffee producers themselves were to blame for this: competing on the price principle and seeking to reduce costs, they purchased ever cheaper coffee beans, that is, they sacrificed the quality of the drink in order to increase sales volumes. The founders of Starbucks decided to take a risk and try a new concept – the concept of a store where only the best imported coffee varieties and equipment for its preparation would be sold.

The very name "Starbucks" comes from the surname of one of the characters in Herman Melville's famous novel "Moby Dick" (in the Russian edition, the character was called Starbek). The first logo of the company was an image of a naked mermaid or siren. It was done in brown, and a siren was used to emphasize the fact that Starbucks coffee is delivered from faraway lands. The logo was quite controversial due to the nudity of the siren. Later, her body was covered with hair, and the logo itself was slightly cropped. In addition, it changed its color from brown to green (although in 2008 they started testing the company's new logo in brown as something that fits more with the company's main product – coffee).

In 1981, the company had five stores, a small coffee roasting factory and a trading division that supplied coffee beans to bars, cafes and restaurants.

As in the story of McDonald's, Starbucks owes its success to an outsider who eventually became its owner. In 1982, entrepreneur Howard Schultz joined the company. He was hired to grow the business as the founders were struggling. At the same time, they did not want to expand, and in 1982, the Starbucks company did not go beyond Seattle. The situation really changed after Howard Schultz visited Milan. There he saw the famous Italian cafes and admired the atmosphere there. "There was nothing like that in America at that time. I haven't met such an emotional closeness of people for a long time", the company chairman described his impression. He immediately understood that something similar should be introduced in the United States: to create an atmosphere in the Starbucks coffee shop that would combine Italian elegance and American informality. In his vision, Starbucks should become a "place of personal pleasure" for visitors – a cozy meeting place for people, an intermediate point between work and home.

However, the idea of selling ready-made coffee in cups was not supported by the founders of the company. They were people of tradition and believed that with such an approach, their shop would lose its essence and turn away consumers, since real coffee should be prepared at home. However, Schultz was so confident in his idea that he left Starbucks and founded his own coffee shop, which opened its doors in 1985. And two years later, Schultz bought Starbucks from the founders for four million dollars and renamed the company Starbucks Corporation (by the way, Microsoft founder Bill Gates, who was one of the first investors in Starbucks, advised Schultz to make such a move).

Given the freedom to act, Schultz opened the first Starbucks outside of Seattle that same year. Cafes were opened in Vancouver and Chicago. Seven years later, the company had 165 coffee shops throughout the United States. And in 1996, the first Starbucks coffee shop outside the USA was opened – in Tokyo (Japan). Evil tongues said that the Japanese, known for their love of tea, would never buy coffee in a paper cup. And they were wrong. The annual volume of sales in Japanese Starbucks coffee shops immediately exceeded the American figures by 2.5 times! Today, the company has more than 500 branches in Japan.

One of Howard's main contributions to the success of Starbucks is that he introduced standardization within the company. Any coffee shop in any country has the same range of basic products. Of course, Starbucks also offers some special products created for a certain country. Starbucks sells natural coffee, espresso-based drinks, other various hot and cold drinks (hot chocolate, tea, "Frappuccinos", etc.), snacks, coffee beans and coffee accessories. You can order a cake or sandwich with coffee. However, unlike most other cafes, Starbucks focuses on coffee. People come here to drink this drink, not to "eat cake with coffee". In general, in America, coffee at Starbucks is drunk differently. Someone enjoys the special atmosphere of a coffee shop, and someone buys a drink and drinks it on the go, on the way to work, for example. Starbucks branded ice cream and coffee are also sold in food supermarkets.

If we talk about the standardization introduced by Schulz, it is distinguished by another feature – the atmosphere in coffee shops. On the one hand, the main elements in all Starbucks establishments are similar, but on the other hand, each coffee shop has its own characteristics, its own unique atmosphere. One of the main requirements when choosing premises for Starbucks coffee shops is that: the entrance door must "open" to the east and never to the north. This is due to the fact that visitors should enjoy daylight, but at the same time the sun should not shine in their faces. At Starbucks, completely different people drink coffee, starting from businessmen drinking espresso on the go, and ending with young couples stretching their pleasure at the table. At Starbucks, sound files are actively edited, freelancers work, bloggers write their new posts. The atmosphere of this coffee shop attracts people with laptops. It's good that there is Wi-Fi. Music is constantly playing in the cafe. At the same time, it is interesting that there is a central server that plays the same music throughout the Starbucks network. This means that the song you're hearing in New York right now is playing in Seattle right now. At the same time, many third-party products have been sold in Starbucks coffee shops recently. With the help of the Starbucks Entertainment department and the Hear Music brand, the company distributes books, music collections and video films. Most of these items are seasonal or designed to sell in a specific area. The company believed that this would make the establishments something more than ordinary coffee shops... It didn't work out. Recently, the company announced that they will no longer sell music in coffee shops.

Global expansion. In recent decades, Starbucks has been buying up local chains of coffee shops around the world, making them part of its brand. The company has been expanding at a crazy pace lately. Even the cartoon series "The Simpsons" had several jokes about how the Starbucks chain is taking over America. The management of the company wanted all coffee shops to be owned by Starbucks itself, and not by franchisors. Schulz understood that in order to create a powerful brand, he and the rest of the managers needed to fully control the process – this is the only way to guarantee unsurpassed quality. In many companies organized on the basis of franchising, local branches live their own lives. In pursuit of profits, franchisees could easily sacrifice the idea of Starbucks' high quality for their own profitability. Understanding the reasons for the decline in the level of coffee sales in the American market, Starbucks sought to prevent the recurrence of such a situation.

Starbucks used the following expansion strategy: when it arrived in a new region, the company was located in its central city, after which a specially trained team of specialists opened a chain of coffee shops there. During the first two years, about 20 establishments are opened in the "hub" cities. Having covered the main market, the company goes to "regions" – satellite cities and the nearest suburbs. In the process of global expansion, there were also corporate gains. In 1998, Starbucks established itself on the British coffee market by taking over the London-based Seattle Coffee Company. In 2001, the conquest of the continental part of Europe began: Starbucks opened in Switzerland and Austria, and then in Spain, Germany and Greece. Interestingly, the company breaks the European tradition: Old World coffee shops usually allow smoking, while Starbucks does not. About 40 % of Europeans smoke. Critics argued that with this ban, Starbucks was depriving itself of a good half of the market, but the company was not affected by this. The first coffee shop in Vienna was visited by 100,128 people two months after its opening. The seemingly strange no-smoking policy had a positive response, all because Starbucks cared (at least in words) not so much about health as about coffee. Signs were hung in coffee shops: "No smoking here, so as not to harm the aroma of the drink", and visitors were thanked for giving up cigarettes.

In the process of entering foreign markets, the company has many problems. First, Starbucks has a chance of success only in countries without their own culture of coffee consumption. The negative experience in Australia (in July 2008, Starbucks announced the closure of 61 of its 84 points) is an unnecessary confirmation of this. Secondly, Starbucks has serious problems with the anti-globalist movement, which sees the company's expansion as the development of American imperialism (and even holds an "International Day of Action against Starbucks"), and Muslim organizations, which do not like Howard Shultz's close ties with the Jewish community and his vigorous support for Israel. Thirdly, recently, a generational conflict is emerging around

Starbucks: teenagers can't stand the Italian names of coffee drinks, as well as the spirit of the yuppie (young urban professional) culture that reigns in the company's coffee shops.

In some countries, Starbucks has had problems related to the peculiarities of national legislation, infringement of intellectual property rights, etc.

In the Chinese market, the company filed a lawsuit, accusing a local competitor of violating its rights to the "Starbucks" trademark. The Shanghai People's Court of Arbitration found that the Chinese company illegally used the mark "Starbucks" as well as its Chinese translation "Xing Ba Ke" ("Xing" is translated as "star" ("star") and "Ba Ke" sounds similar to "bucks"). In addition, according to the court's conclusion, the logo of the Chinese company (a circle with white letters on a green background) violates the white and green logo of "Starbucks". Therefore, the court supported the claims of the American chain of coffee shops and ordered the company Shanghai Xingbake Coffee Shop Ltd ("Xingbake") to pay Starbucks 500 thousand yuan ($61.9 thousand).

Less successful were the results of lawsuits of Starbucks in South Korea. The American company tried twice (in 2005 and 2006) to cancel the registration of the combined trademark "Starpreya", which duplicated the "Starbucks" mark in that it used a similar green circle with a similar arrangement of text and an image of a woman's head in the center of the composition. However, the South Korean patent court rejected Starbucks' lawsuit both times, citing the "dissimilarity between the images of a mermaid and a goddess" (the name "Starpreya", according to the owner of the firm, was formed from the name of the goddess of Scandinavian mythology, Freja, which was changed to make it easier to pronounce according to Korean phonetics).

In 2006, after the Indian government relaxed national foreign investment laws, allowing foreigners to own 51 % of the shares in single-brand retail outlets, Starbucks, along with 14 other foreign companies, expressed interest in opening a retail chain in the country under its own brand, but the Indian government blocked the company's entry into the domestic market after it had failed to provide full information about its plans, including whether Starbucks intends to develop only coffee shops or also restaurants. Thus, the company postponed its entry into the market of this country indefinitely.

In March 2007, Starbucks' official statement on its plans for further expansion stated that China, Egypt, Brazil and India are now its priority countries. The company is developing especially successfully in China, where it easily managed to change the consciousness of consumers: the middle class stopped drinking tea and switched to coffee from Starbucks.

According to the results of 2007, 15,700 Starbucks coffee shops were opened in 43 countries of the world, about 70 % of them in the USA, the rest in other countries. Approximately 7,500 coffee shops are owned by the Starbucks Corporation, others are franchised and licensed. The total number of network personnel is 140,000. According to the research company Hoovers, in 2006, the revenue of Starbucks was $7.8 billion (in 2005 it made $6.37 billion), its net profit amounted to $564 million (in 2005 it was $494.5 million).

Howard Schultz, who left the position of executive director of the company back in 2002, but is still today the chairman of the board of directors and the "chief global strategist" of the company, believes that the network can increase to 40,000 establishments. He would like Starbucks to open in all countries of the world. However, there is a country which he treats with special piety: it is Italy, from where the concept of Starbucks is borrowed.

Starbucks today. Now the situation has changed somewhat, in addition, internal problems have also started in the company. Not so long ago, Howard Schultz announced that he was returning to Starbucks to solve the problems in which his company was mired. Will he succeed? In 2008, the company's management decided to close about 600 coffee shops in the USA by the end of the year. Schultz noted that in the context of the economic downturn and strong competition, the only way to maintain profitability is to close unprofitable coffee shops, mainly in the states of California and Florida. The closure of 600 coffee shops led to the loss of jobs for 12 thousand people, which is 7 % of all jobs in the corporation. Another reason for such a decision is the too fast development of the company. Starbucks has mushroomed in recent years. Every day, eight new Starbucks coffee shops appeared in the world. Americans joke that in some cities you can come across two Starbucks located opposite each other. There is some truth in this joke: perceived saturation of demand threatens a 30 % reduction in the volume of sales of one of the coffee shops located in the neighborhood. Previously, this decline was offset by savings in distribution and marketing costs, not to mention building the image of a "comfortable coffee shop". After all, for coffee lovers there is no such thing as too many coffee shops. Economists estimated last year that the average American goes to Starbucks an average of 18 times a month. No American retailer could boast of a higher frequency of visits.

And even the high price – four dollars for a cup of cappuccino or latte – did not stop visitors. But more and more Americans cannot afford to drink expensive coffee. Still, in this chain of coffee shops, coffee is frankly expensive.

That the problems are worsening became clear last year, when the Starbucks company for the first time since its foundation started an active advertising campaign on television. Economists believe that Starbucks' problems only reflect the general state of the American economy: "The company is a real indicator of the direction in which the middle class is moving. Starbucks shows that demand is decreasing, people are buying less coffee. Now Starbucks is not in the best situation, but probably soon the company will make every effort to get out of the crisis".

So, in 2008, several new projects were implemented. First, the company started selling energy supplements "+Energy" (a mixture of vitamin B, guarana and ginseng) in coffee shops in the USA, which can be added to your favorite type of coffee. Secondly, an agreement was signed with Unilever, under the terms of which Unilever will be engaged in the production, marketing and distribution of ice cream under the brand "Starbucks" in the USA and Canada, expanding its range of ice cream.

Starbucks is also continuing its international expansion. In August 2008, an agreement was signed to open a chain of coffee shops at railway stations throughout the territory of Holland. So far, Starbucks coffee shops in Holland are located only in airports. In September 2008, Starbucks, together with Kraft Foods, began selling packaged coffee under the "Starbucks" brand in supermarkets in Switzerland, which became the first European country where Starbucks coffee appeared outside of branded coffee shops. In the same period, the development of the Portuguese market began by creating a joint venture with Gruppo VIPS, a company with which Starbucks cooperated for six years, opening 75 coffee shops in Spain and 45 in France. In November 2008, the first Starbucks coffee shop was opened in Bulgaria.

In addition, in March 2008, the Starbucks company launched a rather interesting project on the Internet – "the site of ideas for Starbucks". Any person, whether a company employee or a simple customer, can share his idea regarding the improvement of coffee shops. Interestingly, before ideas reach company representatives, they are discussed by registered users of the site, who can vote for each idea. The most popular ideas will be considered and some may even be implemented.

The rapid international growth of the company causes certain problems related to the loss of the emotional component of the brand. In the recent past, the main competitive advantage of Starbucks was the experience that the consumer received with the coffee. But even today, the competitive advantages of Starbucks are rather convenience of location and stability. Today, the company has grown so much around the world that it is unlikely to be able to regain its uniqueness.

The installation of new espresso and cappuccino machines in coffee shops also leads to the destruction of the emotional component of the brand. Thanks to these devices, the drink will be prepared several times faster. However, people went to Starbucks and paid four times the price of coffee at any other place, precisely because it was made with heart. Will the transition to automation of the coffee preparation process reduce the chain's popularity among its regular customers? How to find a balance between the growth of the chain of coffee shops and the uniqueness and special atmosphere?

Questions and tasks for the case task.

1. Analyze the internal and external environmental factors that affect Starbucks' international operations. Identify the most significant opportunities and threats among the analyzed factors.

2. What growth strategies does the company use?

3. Were correct decisions made by the company's management in the crisis? Justify your opinion.

4. What recommendations for improving the international development strategy would you give to the top managers of Starbucks?

5. Is it appropriate for the company to enter the Ukrainian market? What opportunities and threats await the company in Ukraine?

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НАВЧАЛЬНЕ ВИДАННЯ

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Методичні рекомендації до лабораторних робіт для студентів спеціальності 122 "Комп'ютерні науки" освітньої програми "Комп'ютерні науки" другого (магістерського) рівня

(англ. мовою)

Самостійне електронне текстове мережеве видання

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Надано методичні рекомендації до виконання лабораторних робіт, метою яких є закріплення та поглиблення знань теоретичного та практичного матеріалу з методології управління складними соціально-економічними явищами та процесами, поглиблення навичок аналізу соціально-економічних процесів за допомогою Statistica та інструментів Excel.

Рекомендовано для студентів спеціальності 122 "Комп'ютерні науки" освітньої програми "Комп'ютерні науки" другого (магістерського) рівня.

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