Czech University of Life Sciences Prague

Faculty of Economics and Management

Department of Economics

Bachelor Thesis

Economic analysis of Google Inc., Twitter Inc., and Facebook Inc.

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CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

BACHELOR THESIS ASSIGNMENT

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Business Administration

Thesis title

Economic analysis of Google, Twitter and Facebook

Objectives of thesis

The main aim of the bachelor thesis is to complete a full economic analysis of Google, Facebook and Twitter in order to assess their investment attractiveness.

Methodology

Studying documents

SWOT analysis

PEST analysis

Fundamental Analysis

Technical Analysis

Comparison

The proposed extent of the thesis

40 pages

Keywords

Economy, analysis, Google, Twitter, Facebook

Recommended information sources

BRIGHAM Eugene F. and Joel F. Houston. Fundamentals of Financial Management: Concise. 9th ed. USA, Cengage Learning, 2015. ISBN 13: 978-1-305-63593-7.

Economic Analysis of Digital Economy, Avi Goldfarb, Shane M. Greenstein, Catherine E. Tucker University of Chicago Press

HILL Robert Alan. Portfolio Theory & Financial Analyses. 1st ed. bookboon.com [online], 2014 ISBN 978-87-7681-605-6.

KRUGMAN Paul R., Maurice Obstfeld and Marc J. Melitz. International Economics: Theory & Policy. 11th ed. U.S., Pearson, 2018. ISBN 978-0-13-451957-9.

STROSS Randall. Planet Google: One Company's Audacious Plan to Organize Everything We Know Archived. New York, Free Press, 2008. ISBN 978-1-4165-4691-7

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Declaration

I declare that I have worked on my bachelor thesis titled " Economic Analysis of Google Inc., Twitter Inc., and Facebook Inc." by myself and I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 14.03.2018 ______________________________

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Economic Analysis of Google Inc., Twitter Inc., and Facebook Inc.

Abstract

The following thesis is about 3 world famous corporations: Google Inc., Twitter Inc., and Facebook Inc. It contains description of what is fundamental analysis of a company, how to apply it and how to evaluate company's performance. It comprises different kinds of financial ratios which are important for the investors. It also focuses on technical analysis, which include graphical and mathematical. Thesis describes the purpose of mathematical analysis, depicts the indicators that use mathematical approximation. The observation of graphical analysis includes types of graphs for visual perception and main types of graphic models.

In the practical part was done strategic analysis of Google Inc., Twitter Inc., and Facebook Inc. that includes PEST and SWOT analyses. Than these companies were compared according to financial indicators. Research revealed that Facebook outruns it competitors in profitability ratio, liquidity ratio ad solvency ratio. Google has a better result in efficiency ratio and market-based ratios. Twitter is lagging behind in financial performance. Companies were also compared by stock market results in different periods of time as a part of technical analysis. Google appears to be the leader in all the observed periods.

Key words: Google, Twitter, Facebook, financial analysis, technical analysis

Ekonomická analýza Google Inc., Twitter Inc., and Facebook Inc.

Abstrakt

Následující bakalářská práce se zabývá třemi světově známými korporacemi: Google Inc., Twitter Inc. a Facebook Inc. Obsahuje popis základních analýz společnosti, jak je aplikovat a jak hodnotit výkonnost společnosti. Zahrnuje různé druhy finančních poměrů, které jsou důležité pro investory. Zaměřuje se také na technickou analýzu, která zahrnuje také grafickou a matematickou analýzu. Práce popisuje účel matematické analýzy, zobrazuje ukazatele, které užívají matematickou aproximaci. Pozorování grafické analýzy zahrnuje typy grafů pro vizuální vnímání a hlavní typy grafických modelů.

V praktické části byla provedena strategická analýza společnosti Google Inc., Twitter Inc. a Facebook Inc., která zahrnuje analýzy PEST a SWOT. Tyto společnosti byly porovnávány podle finančních ukazatelů. Výzkum ukázal, že Facebook překonává konkurenty v rentabilitě, míře likvidity a solventnosti. Google má lepší výsledek v poměru efektivnosti a tržních poměrech. Twitter zaostává ve finanční výkonnosti. Společnosti byly také porovnány podle výsledků akciového trhu v různých obdobích jako součást technické analýzy. Google se zdá být lídrem ve všech sledovaných obdobích.

Klíčová slova: Google, Twitter, Facebook, finanční analýza, technická analýza

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1. Introduction

Economic analysis plays an important role in improving the economic efficiency of organizations, in strengthening their financial condition. It is an economic science that studies the economics of organizations, their activities from the point of view of evaluating their work in carrying out business plans, evaluating their property and financial condition and in order to identify unused reserves for increasing the efficiency of organizations.

Depending on the content, functions and tasks of the analysis, there are the following types of economic analysis: financial analysis, management analysis, socio-economic analysis, statistical-economic, environmental-economic, marketing, investment and others.

Economic analysis is divided into internal and external, depending on the subjects of analysis, that is, from those bodies that conduct it. The most comprehensive and comprehensive is the internal analysis conducted by the functional departments and services of the organization. Internal analysis examines the efficiency of using own and borrowed capital, examines the indicators of profit, profitability, identifies the growth reserves of the latter and strengthening the financial condition of the organization, as well as examines issues related to the organizational and technical level and other conditions of production using certain types of production resources (labor resources, fixed assets, materials), analyzes the volume of output, its cost.

Analysis of the external environment is carried out by tax authorities, banks, statistical agencies, parent organizations, suppliers, buyers, investors, shareholders, auditing firms, etc. The main task of external economic analysis is to assess the sustainability of the financial condition of the analyzed organization, its solvency and liquidity as at reporting dates, so in the future. Using the results of economic analysis, you can determine the degree of investment attractiveness of an enterprise.

Attracting investment resources has a positive effect on the development of the company. In the most general form, experts consider the possibility of expanding production, updating basic production assets, developing and introducing new technologies, improving the quality and competitiveness of products, and so on as positive consequences. On the other hand, the investor's benefit obtained in the form of income and compensation for the risk taken on itself is also well known.

This work consists of four honors: an introduction, a theoretical part, a practical part, and a conclusion. Theoretical part of the work describes the methods of economic analysis and factors affecting the productivity of the company. The practical part of the work is based on the application of the described analyzes on the example of companies such as Google, Facebook and Twitter.

1.1. Objectives

Thus, the main purpose of this bachelor thesis is to assess the investment attractiveness of Google, Facebook and Twitter.

To achieve this goal it is necessary to solve the following tasks:

- highlight methods and approaches to the assessment and analysis of the economic activity and financial condition of the company
- to analyze the economic activity and financial condition of companies
- to compare the investment attractiveness of companies to identify the best one

1.2. Methodology

The research in this bachelor thesis is built on a four-step system, which consists of:

1. Collection and study of all necessary information on the basis of scientific literature, official documents and Internet resources
2. Conducting a fundamental analysis, based on the primary analysis of the companies to identify them the most competitive, as well as on the financial analysis of companies to identify the most solvent of them.
3. Carrying out technical analysis based on graphical and mathematical methods for the study of market dynamics and the price movement of securities of these companies.
4. Comparison and description of the results and make a conclusion about the investment attractiveness of companies

2. Theoretical part

2.1. Fundamental analysis

Fundamental analysis is an assessment of a variety of external and internal factors that significantly affect the financial and economic activities of a company, the results of which are reflected in the market value of its securities.

There are a lot of such factors:

- the activities of competitors
- the political situation in the country
- the effectiveness of company's management
- strict observance of the rights of shareholders
- the financial situation of the company

The main purpose of the fundamental analysis is to determine the current market value of the security and its subsequent monitoring to make appropriate investment decisions.

The main objectives of the fundamental analysis are:

- search for investment opportunities to invest in corporate stocks with the highest possible return and minimum risk, i.e. in fact - the definition of the investment attractiveness of the enterprise (country, region, industry) according to economic indicators
- liquidity research of the company's financial instruments
- determination of the degree of their valuation and their comparison with indicators of securities of similar companies
- calculation of the real value of the most investment-attractive and undervalued company and its comparison with the current market capitalization
- determination of the price level, upon reaching which it is advisable to invest in the securities of this company

There are two methods of forecasting: “top-down”, in which the state of the economy as a whole is initially considered, then an analysis of individual industries and then specific companies; “down-top”, in which the prospects of individual companies are first assessed, then the prospects for industries and, as a result, for the economy as a whole are evaluated.

According to the traditional approach, fundamental analysis is carried out at three stages:

1. the analysis of the country's economy or macroeconomic analysis
2. the analysis of industry

3. the analysis of the company's investment attractiveness

Each stage has its own specific features.

1. Macroeconomic analysis

One of the main factors determining the dynamics of the firm’s income is the macroeconomic situation in the market. A fast-growing economy is attractive to firms, as there are opportunities for increasing revenues. The state of the country's economy largely determines its investment attractiveness on the international market. The state of macroeconomics is described by a number of key indicators such as GDP, inflation, interest rate, unemployment, budget deficit.

There are quite a few macroeconomic indicators that can be used to characterize the state of the economy with some degree of certainty. The macroeconomic stage of fundamental analysis is designed to identify general trends characterizing the state of the country's economy as a whole. It allows to find out how the overall situation is favorable for investment and makes it possible to determine the main factors that determine the dynamics of stock prices.

At the macroeconomic level of fundamental analysis, the following blocks can be distinguished:

- GDP
- payment balance
- monetary policy
- exchange rates
- financial policy
- stock market, stock index dynamics
- degree of economic growth
- political situation
- legal regulation
- inflation

2. Industrial analysis

After studying the state of the market as a whole, an analysis of individual sectors of the economy is carried out in order to identify those that are most favorable for placing funds in the current general economic conditions, in terms of selected investment goals and priorities. At the same time, the state of both individual industries and subsectors of the economy is considered.

Industry analysis involves the study of legislative regulation of the industry, the business cycle of the industry, its structure, competitiveness, costs, labor relations, the duration of the production cycle. Further, the classification of industries in relation to the level of stages of development is carried out and a qualitative forecast of the development of the industry is given.

Investment attractiveness of industries can be characterized by the following indicators:

• growth rate of industry volumes;

• profitability of production

• growth rates of prices for factors of production in the industry, etc.

According to these indicators of sectors of the economy can be grouped into the following groups: growing industries, stable industries, fading industries, speculative industries.

Another important aspect of the fundamental analysis of the industry is to determine the stage of its development, or in other words, the life cycle of the industry. A typical market life cycle can be described in four stages: startup, growth, maturity, recession.

For the movement of stock exchange rates, along with industry profits, two indicators are of particular importance. They indicate the expected dynamics of turnover and profits of the relevant industry. Indicators of the receipt of orders and the volume of industrial production allow to make a forward estimate of future industry profits. When focusing on the turnover should not forget about the components of costs. The dynamics of profit of the relevant industry is a significant factor in influencing the movement of stock prices. In addition, along with indicators of the receipt of orders and the volume of industrial production, profit depends on the movement of exchange rates, especially the dollar, as well as on whether the industry is oriented towards export or import.

3. Company analysis

The identification of the most preferred areas of placement of funds creates the basis for the selection within their framework of specific types of securities, investments in which would ensure the most complete implementation of investment objectives. Therefore, in the third stage of the analysis, the state of individual firms and companies whose equity or debt equity instruments circulate in the market is described in detail. Analysis at this stage is the most time consuming and difficult. At this stage, an analysis of the financial statements of the company for several years. Sources of information for this analysis are:

- Official company reporting
- Publications, articles of the company
- Various database

This makes it possible to decide which securities are attractive.

The first step is to consider the general position of the company in the market, the management of the company, the life cycle of the company. Next is the financial - economic analysis of the company.

2.1.1. Strategic analysis of a company

Strategic management is the process of making and implementing strategic decisions, the central element of which is a strategic choice based on comparing the company's own resource potential with the capabilities and threats of the external environment in which it operates.[1]

It can be point to several constructive definitions that have been proposed by authoritative developers of the theory of strategic management. Schendel and Hatten viewed it as "the process of defining and linking an organization with its environment, consisting in realizing the chosen goals and trying to achieve the desired state of relationships with the environment through resource allocation, allowing the organization and its units to operate effectively and efficiently."

According to Higgins, "strategic management" is a management process designed to fulfill an organization's mission through managing an organization's interaction with its environment." And Pierce and Robinson defined strategic management as a set of decisions and actions to formulate and implement strategies designed to achieve organization's goals."

Like any management process, strategic management necessarily includes the steps of strategic analysis, strategic choice and strategy implementation.

The stage of strategic analysis interprets the strategic position of the organization through, first, identifying changes that have arisen in the economic environment and identifying their impact on the organization and its activities, and secondly, determining the benefits and resources of the organization depending on these changes.

The main goal of the strategic analysis is to assess the key impacts on the current and future position of the organization and determine their specific impact on the strategic choice.

Strategic analysis is very useful for investors, since on the basis of the results of this analysis it is possible to assess the state of the company, answering the following questions.

1. How effective is the current strategy?
2. What are the strengths, weaknesses of the company, what opportunities does it have and what is a threat to it?
3. Are the prices and costs of the company competitive?
4. How strong is the company's competitive position?

[1] HAVLICEK K., Small Business Management and controling. Ukraine, 2014. ISBN 978-966-388-494-3.

5. What are the strategic problems facing the company?

There are three components of strategic analysis:[2]

1. Purpose and objectives. This first component of the strategic analysis determines the goal, the main tasks, the power relations within the organization. The goal and the main objectives form the background in which the proposed strategies are formulated, as well as the criteria by which they are evaluated. The goal determines the meaning of the existence of the organization and the nature of its activities. The main objectives establish that the organization intends to perform in the medium and long term to achieve the goal.
2. Analysis of the external environment. The second component of the strategic analysis is the study of the external situation or characteristics of the external environment in which the organization operates. The organization exists against the backdrop of a complex external environment, which includes many elements (political, technological, social and economic). The external situation is undergoing significant changes, which raises strategic issues for the organization. A distinction needs to be made between two interrelated environments: the micro and macro environment of an organization. The micro environment is a direct or branch environment, i.e. the environment in which the organization operates. It includes an assessment of the competitive structure of the industry, as well as key parameters for the development of the industry. The micro environment is specific to the organization, each organization has its own micro environment, representing a unique combination of existing factors. Macro environment involves the study of macroeconomic, social, legal, international and technological factors that may affect the organization. Macro environment is the same for all organizations working in it. The external environment includes: the target group of customers, the external atmosphere of the organization and competitors. The external environment can create opportunities or threats to the organization.
3. Analysis of internal resources. The third component of the strategic analysis determines the completeness and quality of resources available to the organization in the areas of its activities. The method of researching internal resources is to take into account the key advantages and disadvantages of the organization. The purpose of the analysis is to develop an overall picture of the internal impacts and constraints imposed on the strategic choice. Internal analysis focuses on two areas: identifying the strengths and weaknesses of the organization and identifying expectations and opportunities to influence the

[2] HAVLICEK K., Small Business Management and controling. Ukraine, 2014. ISBN 978-966-388-494-3.

process of strategic planning for owners and staff. Workers are an important object of the internal analysis phase. The results of the analysis of the internal state of the company and the state of the external environment make it possible to assess the compliance of the company's capabilities with market opportunities, on the basis of which reasonable programs for the development of the company and its market behavior are developed, decisions are made to change or supplement the strategy

When conducting a strategic analysis, can be used various analytical tools, such as:[3]

- PEST analysis – this tool is designed to identify the political, economic, social and technological factors of the external microenvironment, which can significantly affect the business, their structuring and formulation of the organization's strategy.
- SWOT analysis – this is a definition of the strengths and weaknesses of the organization, as well as opportunities and threats emanating from its immediate environment (external environment).

2.1.2. Financial analysis of a company's performance

The financial condition of an organization is a characteristic of its financial competitiveness, the use of financial resources and capital, and the fulfillment of obligations to the state and other economic entities.[4]

The financial condition of the company can be:

- stable
- unstable (pre-crisis)
- crisis

The stable financial condition of the enterprise shows its ability:

- to make payments in full and on time
- to finance their activities on an expanded basis
- to endure unforeseen difficulties without serious consequences
- to maintain its solvency

In turn, the absence of these qualities indicates the instable financial condition of the company.

[3] HAVLICEK K., Small Business Management and controling. Ukraine, 2014. ISBN 978-966-388-494-3.
[4] BRIGHAM Eugene F. and Joel F. Houston. Fundamentals of Financial Management: Concise. 9th ed. USA, Cengage Learning, 2015. ISBN 13: 978-1-305-63593-7.

To ensure financial stability, an enterprise must not only have a flexible capital structure, but must be able to organize the movement of financial resources in such a way as to achieve a constant excess of income over expenditure in order to create conditions for maintaining solvency and self-reproduction.

Therefore, the financial stability of an enterprise is, first of all, the ability of an economic entity to function and develop, to maintain the balance of its assets and liabilities in a changing internal and external environment, which guarantees its permanent solvency and investment attractiveness within the acceptable level of risk.[5]

The financial condition of the company, its stability are directly dependent on the results of its industrial, commercial and financial activities. If the production and financial plans are successfully fulfilled, then this favorably affects the financial position of the company, and, conversely, due to the shortfall in the plan for the production and sale of products, its cost increases, the revenue and profit amount decrease and, consequently, the financial condition of the enterprise and its deterioration solvency. This means that a stable financial state of an enterprise is the result of a competent and skillful management of the whole complex of factors that directly determine the results of an enterprise's performance. A stable financial position in turn has a positive effect on the fulfillment of production plans and meeting the needs of production with the necessary resources.

Consequently, financial activities as an integral part of the economic activity of an enterprise should ensure:

- the systematic receipt and expenditure of financial resources
- the achievement of rational proportions of equity and debt capital and its most efficient use

The main purpose of financial activity is to decide where, when and how to use financial resources for the effective development of production and to obtain maximum profit.

To survive in a market economy and prevent bankruptcy of an enterprise, it is important to know well how to manage finances, what should be the capital structure, what share should own funds, and what share should be borrowed. Also it is important to aware of such a concept of a market economy as business activity, liquidity, solvency, creditworthiness of an enterprise, profitability threshold, financial stability margin (safety zone), risk level, effect of financial leverage and others, as well as methods for analyzing them.

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[5] BRIGHAM Eugene F. and Joel F. Houston. Fundamentals of Financial Management: Concise. 9th ed. USA, Cengage Learning, 2015. ISBN 13: 978-1-305-63593-7.

The main purpose of financial analysis – it is quickly identify and address deficiencies in the financial activities and find the reserves to improve the financial condition of the company and of its solvency.[6]

The financial condition of the company is analyzed by:

- company management
- company founders
- investors to explore resource efficiency
- banks - to assess credit conditions and determine the degree of risk
- suppliers - for timely receipt of payments
- tax inspectorates - to fulfill the plan for receipt of funds in the budget

Investors, suppliers of material and financial resources, control bodies conduct external analysis based on the published annual (quarterly) reporting of the company. The purpose of this analysis is to establish the possibility of investing profitably in order to ensure maximum profit and eliminate or minimize the risk of loss.

The basic information source for analyzing the financial condition of the company is the annual report, which included the following statements:[7]

- Balance Sheet
- Profit and Loss Statement (Income Statement)
- Statement of changes in equity
- Cash Flow Statement
- Appendix to the balance sheet

Summing up all the above, it can be said that the main indicator of a positive financial condition of any company is its financial stability - it is the ability of the company to function successfully and make a profit, regardless of various factors, to maintain the balance of assets and liabilities, have investment attractiveness, be solvent.

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[6] BRIGHAM Eugene F. and Joel F. Houston. Fundamentals of Financial Management: Concise. 9th ed. USA, Cengage Learning, 2015. ISBN 13: 978-1-305-63593-7.

[7] Investopedia.com https://www.investopedia.com/

2.1.2.1. Financial ratio analysis

Analysis of financial ratios - this is one of the most common systems of financial analysis, the methods of which are the calculations of the ratio of individual financial indicators characterizing various aspects of the financial activity of an enterprise.

In financial management the most common are the following groups of analytical financial ratios:

- Profitability Ratios
- Liquidity Ratios
- Market-based ratios
- Solvency ratios
- Efficiency ratios

2.1.2.1.1. Profitability Ratios

The profitability ratios indicate the percentage of profit to invested funds. The profitability ratios show how profitable the company's activities are, and are calculated in relation to gross and net profit.[8]

The following ratios of this group are distinguished:[9]

- Net Profit Margin represents the share of net profit in sales

$$NPM = \frac{Net\ Income}{Total\ sales}$$

- Gross Profit Margin shows how much profit a company will get from one dollar of sales.

$$GPM = \frac{Revenue - Cost\ of\ Goods\ Sold}{Revenue}$$

- Return on Assets (ROA) represents how much money (regardless of the source of their attraction) it took to get 1 dollar of profit.

$$ROA = \frac{Net\ Income}{(Opening\ Assets\ + Closing\ Assets)/2}$$

- Returns on Equity (ROE) allows to determine the efficiency of use of capital invested in the company by its owners (shareholders) in comparison with other areas of investment.

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[8] BRIGHAM Eugene F. and Joel F. Houston. Fundamentals of Financial Management: Concise. 9th ed. USA, Cengage Learning, 2015. ISBN 13: 978-1-305-63593-7.

[9] HILL Robert Alan. Portfolio Theory & Financial Analyses. 1st ed. bookboon.com [online], 2014 ISBN 978-87-7681-605-6.

$$ROE = \frac{Net\ Income}{(Opening\ \text{Equity}\ + Closing\ \text{Equity})/2}$$

- Return on Capital Employed (ROCE) represents how much money a company can receive from each 1 dollar invested in employed capital.

$$ROCE = \frac{Earnings\ before\ Interest\ and\ Taxes}{(Total\ Assets - \ Current\ Liabilities)}$$

2.1.2.1.2. *Liquidity Ratios*

Liquidity ratios are calculated in order to know how quickly the company is able to fulfill all of its financial obligations. The concept of liquidity and its ratios is closely related to the concepts of assets and liabilities. For the successful performance of the company to calculate the liquidity ratios and correctly carry out the analysis necessary.[10]

The following ratios of this group are distinguished:[11]

- Current Ratio indicates whether the company has enough funds that can be used to repay short-term liabilities. Recommended values are 1-2.

$$CR = \frac{Current\ Assets}{Current\ Liabilties}$$

- Quick Ratio assesses the company's ability to meet its short-term obligations at the expense of its most liquid assets. Recommended values are 0.3-1.0.

$$QR = \frac{Total\ Current\ Assets - Inventory - Prepaid\ Expenses}{Current\ Liabilities}$$

- Cash Ratio allows to determine whether the company has the resources to meet the requirements of creditors in a critical situation. Recommended values are 0.2-0.5.

$$Cash\ Ratio = \frac{Cash + Cash\ Equivalents}{Total\ Current\ liabilities}$$

- Defensive Interval Ratio shows the number of days during which the company can work with existing liquid assets, based on the expected amount of upcoming operating expenses.

$$DIR = \frac{Defensive\ Assets}{Daily\ Operational\ Expenses}$$

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[10] Investopedia.com https://www.investopedia.com/

[11] HILL Robert Alan. Portfolio Theory & Financial Analyses. 1st ed. bookboon.com [online], 2014 ISBN 978-87-7681-605-6.

2.1.2.1.3. Market-based ratios

Market activity is analyzed based on the valuation of the company's shares. A simple share of a company has a nominal, emission, balance, market and real (recalculated taking into account the time value of money) value. For an efficiently operating company, these costs should increase from nominal to real.[12]

The following ratios of this group are distinguished:[13]

- Earnings Per Share characterizes the share of net profit attributable to one ordinary share in circulation.

$$EPS = \frac{Net\ Income - Preferred\ Dividends}{\begin{array}{c}Weighted\ Average\ Common\\ Sheres\ Outstanding\end{array}}$$

- Book value per share reflects the value of the net assets (equity capital) of an enterprise, which is accounted for one ordinary share in accordance with the accounting and reporting data.

$$BVPS = \frac{\begin{array}{c}Common\ Shereholder's\ Equity\\ - Preferred\ stock\end{array}}{Number\ of\ shares\ outstanding}$$

- Price/Sales Ratio is a fairly convenient means of determining revalued stocks: the fundamental principle in this case is that the lower the value of this ratio, the less likely it is that these stocks are overvalued.

$$P/S = \frac{Stock\ price\ per\ share}{Net\ sales\ per\ share}$$

- Price-to-cash flow ratio characterizes the ratio of the company's market value and the value of its cash flow from operating activities and makes it possible to judge the size of the cash flow generated by it from its main (operating) activity.

$$P/CF = \frac{Stock\ price\ per\ share}{Operating\ cash\ flow\ per\ share}$$

- Price-Earnings Ratio shows how much money the shareholders are willing to pay for one monetary unit of the company's net profit.

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[12] Investopedia.com https://www.investopedia.com/

[13] Yahoo Finance https://finance.yahoo.com

$$P/E = \frac{Market\ VaLue\ Price\ per\ Share}{Earnings\ per\ Share}$$

- Price/Earnings to growth shows the relationship between P / E and the projected rate of revenue growth over a certain period of time. The optimal value of Price / Earnings to growth is 1. It reflects the correct assessment of the value of shares and their potential return.

$$PEG\ Ratio\ = \frac{P/E\ ratio}{Annual\ EPS\ growth}$$

- Dividend yield represents the amount of dividends, which will receive the owner of the action.

$$Dividend\ yield\ = \frac{Dividend\ per\ share}{Price\ per\ share}$$

- Enterprise value multiple ratio shows the undervaluation or revaluation of the market of any company.

$$EV/EBITDA\ = \frac{Enterprise\ value}{EBITDA}$$

- Price-to-book ratio shows the market value of one share in comparison with its book value.

$$P/B\ Ratio\ = \frac{Price\ per\ share}{Book\ value\ per\ share}$$

2.1.2.1.4. Solvency ratios

Solvency is the presence of the company cash and cash equivalents sufficient to repay debt. This group of solvency ratios, characterizes the independence of each element of the assets of the company and of the property as a whole and makes it possible to measure whether the company is sufficiently stable financially.[14]

[14] BRIGHAM Eugene F. and Joel F. Houston. Fundamentals of Financial Management: Concise. 9th ed. USA, Cengage Learning, 2015. ISBN 13: 978-1-305-63593-7.

The following ratios of this group are distinguished:[15]

- Debt to Equity Ratio gives the most general assessment of financial sustainability. It shows how many units of attracted funds fall on each unit of own funds.

$$DER = \frac{Total\ Liabilities}{Total\ Equity}$$

- Debt to Capital Ratio is a measurement of a company's financial leverage and shows the proportion of a company's debt to its capital.

$$DCR = \frac{Total\ Debt}{Total\ Debt + Shereholde's\ Equity}$$

- Debt to Asset Ratio characterizes dependence on external sources of financing (i.e., what share of borrowed funds in the entire capital structure). The indicator is defined as the ratio of total debt (the sum of short-term liabilities and long-term liabilities) and total assets.

$$DAR = \frac{Total\ Debt}{Total\ Asset}$$

- Interest Coverage Ratio characterizes the organization's ability to service its debt obligations. The indicator compares earnings before interest and taxes (EBIT) for a certain period of time (usually one year) and interest on debt obligations for the same period.

$$ICR = \frac{EBIT}{Interest\ Expense}$$

[15] HILL Robert Alan. Portfolio Theory & Financial Analyses. 1st ed. bookboon.com [online], 2014 ISBN 978-87-7681-605-6.

2.1.2.1.5. *Efficiency ratios*

Efficiency ratios allow to analyze how effectively the company uses its own funds. The indicators of this ratios group are especially important to compare with the industry average values, since their value may vary significantly depending on the industry.[16]

The following ratios of this group are distinguished:[17]

- Accounts Receivable Turnover characterizes the rate of payment of the company's receivables, that is, how quickly the company receives payment for goods sold (works, services) from its customers.

$$ART = \frac{Net\ Credit\ Sales}{Average\ Accounts\ receivables}$$

- Inventory Turnover shows how many times during the analyzed period the company used the average available balance of stocks. The higher the inventory turnover of a company, the more efficient is the production and the less need for working capital for its organization.

$$IT = \frac{Cost\ of\ Goods\ Sold}{Average\ Inventory}$$

- Accounts Payables Turnover characterizes the rate of repayment of accounts payable to suppliers and contractors. The coefficient is used to quantify the rate at which a company pays its own debt.

$$APT = \frac{Total\ Purchases}{Average\ Accounts\ Payable}$$

- Working Capital Turnover shows how efficiently a company uses investment in working capital and how it affects sales growth. The higher the value of this indicator, the more effectively the company uses working capital.

$$WCT = \frac{Sales}{Working\ Capital}$$

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[16] BRIGHAM Eugene F. and Joel F. Houston. Fundamentals of Financial Management: Concise. 9th ed. USA, Cengage Learning, 2015. ISBN 13: 978-1-305-63593-7.

[17] HILL Robert Alan. Portfolio Theory & Financial Analyses. 1st ed. bookboon.com [online], 2014 ISBN 978-87-7681-605-6.

- Fixed Assets Turnover characterizes the efficiency of use by the enterprise of its available fixed assets. The higher the coefficient value, the more efficiently the company uses fixed assets. A low level of capital productivity indicates a lack of sales or a too high level of capital investments.

$$FAT = \frac{Net\ Sales}{Fixed\ Assets - Accumulated\ Depreciation}$$

- Total Asset Turnover characterizes the efficiency of the use of resources attracted for the organization of production. It is an indicator that indirectly reflects the potential profitability of the company. This ratio shows how many times a year a full cycle of production and circulation takes place, bringing a corresponding effect in the form of profit.

$$TAT = \frac{Net\ Sales}{Average\ Total\ Assets}$$

2.2. Technical analysis

Technical analysis as a whole can be defined as a method of price forecasting, based on the study of the movement of the price itself, and not on economic indicators. Technical analysis is a study of market dynamics, most often through graphs, in order to predict the future direction of price movement.[18]

Repeated movement of market prices is the source of all trading profits, since it gives the trader the opportunity to strengthen his advantages in trading due to a small statistical advantage over random behavior.[19]

As is known, the most important factor influencing the price movement of an individual stock is the trend of the entire market represented by the Dow Jones industrial index and other indices. If the stock market grows, then the prices of the overwhelming majority of shares increase. Also, when the stock market falls, there is a simultaneous fall in many stocks.

In the theory of Charles Dow, we can distinguish six basic postulates, which became the starting point in the development of technical analysis:

I. Stock indices do not take into account anything in advance. All market participants simultaneously own all the information important for interpreting the value of a share, and this knowledge is not taken into account when market prices fluctuate.

II. The market has three movements - “primary”, “secondary” and “third-rate”. Price fluctuations are always a consequence of these three types of movements, acting simultaneously, but not necessarily in the same direction. The biggest movements are “primary”, these are trends of several years. The second movement lasts from three weeks to several months, often combining a correction in depth from one third to two thirds of the previous first phase. The third movement lasts less than three weeks.

III. Support and resistance zones give price signals. When the price fluctuates in a narrow range from two to three weeks or more, it is possible to “accumulate” securities from a small group of professionals (before the rise begins) or to “distribute” securities among many hobbyists (on the threshold of a fall).

IV. Volume maintains price. The strength of the price movement as a signal increases when a large volume occurs. The volume follows the direction of the trend. If the

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[18] Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications (New York Institute of Finance) Hardcover – January 1, 1999. ISBN 0-7352-0066-1

[19] Yahoo Finance https://finance.yahoo.com

volume is high, with the rise of the market, and small at a decrease, we should expect its growth.

V. The trend must be confirmed by peaks and valleys. The uptrend remains unshakable until all new peaks and valleys stop rising. The downtrend is accordingly stable, until the reduction of all peaks and valleys stops.

VI. Both indices must confirm the trend of the stock. The primary trend of the stock market cannot really be established until both indices - both the index of shares of industrial companies and the index of shares of transport companies - start a unidirectional trend movement.

From the above postulates of Charles Dow for the analysis of the securities market, John J. Murphy identifies three principles on which all technical analysis is based:

I. Price discounts everything else. Any factor affecting the price - economic, political or psychological - is already taken into account by the market and included in the price. Therefore, studying the price chart is all that is required for forecasting. Any economic forecasting is based on the following axiom: if demand exceeds supply, prices will increase; if supply exceeds demand, prices go down. However, the technical analyst argues as follows: if for whatever reason prices in the market have gone up, then demand exceeds supply.

II. Price moves in trend. This assumption is the basis for trend analysis and serves as the core of all technical analysis. As a rule, prices do not move linearly up or down. However, on a rising trend, prices rise more and faster than they fall.

III. History repeats itself. The essence of this statement is the immutability of the laws of physics, economics, and psychology in different periods of history. Consequently, those rules that operated in the past - they act now, and will also act in the future. It is this statement that gives us the basis to carry out a technical analysis of reality and, with some kind of more or less accurate assessment, predict the future.

In modern literature, the name of two approaches to technical analysis: “graphical analysis” and “mathematical analysis”, is common.

2.2.1. Graphical analysis

Graphic analysis involves working with the graphical display of the history of price fluctuations. Price data is processed through their direct visual perception. Graphic analyst usually operates with such categories as: support / resistance levels, trend lines, channel lines, definition of various price models, etc. An important feature of the graphical analysis of prices is that there is a place for its subjective interpretation, but at the same time it allows the use of formalized approaches.[20]

Technical analysts for visual perception use four main types of graphs:

I. A line chart is a broken line connecting individual price values over a selected time interval (for example, prices at the close of a trading session). The disadvantage is that they do not allow to display price fluctuations between connecting points.
II. The chart of bars allows to display four important indicators: the maximum price, the minimum price, the price of the beginning of the period and the price of the end of the period. It also reflects the range of price changes for the selected period.
III. The chart of candles on in formativeness is similar to the chart of bars or bars, the difference from the latter only in visual display. The chart of candles is attractive because it reflects the same information as the western bar chart gives additional information. First, the color of the bars reveals the bearish or bullish inclination of this market; secondly, the candles themselves form bullish or bearish patterns that are not visible on the bar graph
IV. Point-to-point graphs display only the price movement, they do not take into account time. When the course goes up, its change is depicted by crosses, the downward movement is represented by zeros. The graph allows you to reduce the statistical noise, as it changes the direction to the opposite only after the course turns and passes a certain number of points.

Also there are three types of graphic models:[21]

- models of continues trend
- models of reversal trends
- models of uncertainty

2.2.2. Mathematical analysis

Mathematical methods include methods that use filtering or mathematical approximation of time series. In technical analysis, the series of price values for a certain period of time, the volume of trade and the number of open positions are used as the base time series.

[20] Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications (New York Institute of Finance) Hardcover – January 1, 1999. ISBN 0-7352-0066-1
[21] Investopedia.com https://www.investopedia.com/

The main tool of analytical methods is the indicator, which in turn is a set of functions from one or several basic time series, with a specific time window.[22]

Indicators can be divided into five categories:[23]

I. Trend indicators. These include indicators that measure the trend, its strength and duration. A classic example of confirming trend indicators is the “moving average”.
II. Indicators of variability. Indicators of the second category are used to measure the measure of price asset volatility. Variability is a concept that describes the magnitude of daily, price-independent fluctuations of the price. Such indicators are especially important for the analyst of the futures market on a trend change, or in a side trend. The signals of such indicators, built with a small time window, allow you to enter and exit the market during the day.
III. Indicators of the moment. Representatives of this category are used to measure the rate of price change over a certain period of time, but nothing prevents to use the signals of moment indicators both for confirming the trend and for predicting the moment of its end, which most specialists do.
IV. Cycle indicators. These indicators are used to identify cyclical components and their length. Such indicators work well only on side trends. These indicators are very important for futures traders operating in the commodity markets of sugar or oil grains - in markets with a very high cyclical component.
V. Indicators of market power. This category uses as one of the basic independent variables either the volume of transactions or the number of open positions. Indicators of this category, based on data series of volume, give signals about the strength of the current trend.

[22] Yahoo Finance https://finance.yahoo.com

[23] Technical Analysis of the Financial Markets: A Comprehensive Guide to Trading Methods and Applications (New York Institute of Finance) Hardcover – January 1, 1999. ISBN 0-7352-0066-1

3. Practical part

3.1. Fundamental analysis of companies

3.1.1. Strategic analysis

3.1.1.1. Google Inc.

Google Inc. is an American international public corporation that was founded by Sergey Bring and Larry Page on September 4, 1998. Later on October 2, 2015, the company was reorganized into the international conglomerate Alphabet Inc. The company mainly invests in Internet search, cloud computing and advertising technologies. Google supports and develops a range of online services and products, and makes a profit primarily from advertising through its AdWords program.[24]

Type of activity:

Google's core business focuses on providing search services through the global Internet. The quality, accuracy, ease of use and speed of searching the information resources of the global network have made the company a leader in its field in many countries.

Another important activity of Google is working with advertisers, web publishers, website administrators who have developed effective ad placement capabilities and a wide range of profitable search-based services.

Also, the company's activities include:

· Software development, applications

· Creation of innovative products and services

The rapid growth of Google since its inception has led to the emergence of a large number of products that are not directly related to the main product of the company - the search engine. Most of them are web applications that require the user only to have a browser in which they work and an internet connection.

The largest Google services and tools:[25]

- Google search – is the largest internet search engine and the main google product
- YouTube – is the most popular video hosting
- Gmail – is Email service
- Google maps – is cartographic system
- Google drive – is a cloud storage
- Google play – is App store for Android

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[24] About Google https://about.google/

[25] STROSS Randall. Planet Google: One Company's Audacious Plan to Organize Everything We Know Archived. New York, Free Press, 2008. ISBN 978-1-4165-4691-7

- Google translate – is system for translation of words, texts, phrases, web pages
- Google books – is a book library search
- Google docs – is a system for relatively simple editors of texts, presentations, drawing diagrams and spreadsheets, respectively.
- A service that allows you to embed maps on external sites using JavaScript
- Google sites – is a system for creation and hosting of Internet sites with many additional features (editing sites by a large number of users based on wiki technology, using other services, etc.)
- Google Analytics – is a system for detailed website traffic statistics
- Google AdWords – is a system for contextual advertising service that works with keywords
- Google App Engine – is a platform for creating and hosting scalable web applications on Google's servers

Employees: 80.110 (2018)

Main Competitors: Amazon.com, Inc., Apple Inc., Facebook Inc., Microsoft Corporation, Samsung Electronics Co., Ltd., International Business Machines Corporation and many other Internet, computer software and consumer electronics companies.

Shareholders:

Main shareholders:

- Larry Page, Google Inc.
- Eric E. Schmidt, Google Inc.
- Sergey Brin, Google Inc.
- L. John Dörr, Kleiner Perkins Caufield & Byers
- John L. Hennessy, Stanford University
- Paul S. Otellini, Intel Corporation
- K. Ram Sriram, Sherpalo Ventures
- Shirley M. Tilman, Princeton University

Vision and mission statements:

Vision - "To provide access to the world's information in one click."

Mission - "To organize all information available in the world, making it accessible and convenient to use."

Company principles:

- The main thing is to focus all attention on the user, and the rest will follow.
- It is better to do one thing, but to do it very, very well.

- Better faster than slower.
- Democracy on the Internet is.
- To get an answer, a computer is not needed.
- Money can be earned without causing harm.
- Information is always much more than it may seem.
- There is no limit to finding information.
- You can be serious without a tie.
- Excellent - this is not the limit.

Company objectives:[26]

When developing a new product, Google’s usability experts try to make it useful, fast, simple, attractive, innovative, versatile, profitable, beautiful, reliable, individual.

The company constantly maintains a balance between these ten goals. If you manage to realize their harmonious combination, it means that the product is designed "in the spirit of Google."

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[26] STROSS Randall. Planet Google: One Company's Audacious Plan to Organize Everything We Know Archived. New York, Free Press, 2008. ISBN 978-1-4165-4691-7

PEST analysis of Google Inc.

Political factors	Economic factors
1. It is believed that Google is a monopoly. This has led to antitrust actions, especially in Europe. 2. There is also some excitement that Google has too much control over the flow of information. That in turn can lead to calls for nationalization or toughening of state control by Google. 3. Google is one of the many companies that keeps money in non-country banks in order to avoid high income taxes. If the US has been trying to increase political pressure to force companies to keep this money in the country it can reduce Google's cash flow, and it can also force Google to make expensive overseas acquisitions in order to avoid taxes. 4. Google also cannot reach some potentially profitable markets, such as China, for political reasons. This may limit the future growth of the company.	1. The cash accumulations of the company are huge, which in turn makes the company very dependent on inflation. A sudden drop in the value of a currency can reduce the value of a company. 2. Due to the fact that Google keeps a large amount of money abroad, it makes it very vulnerable in terms of exchange rates and the foreign exchange market. 3. A sudden drop in the high price of Alphabet shares could damage the company, reducing its market capitalization.
Social factors	**Technological factors**
1. The popularity of mobile devices has risen, which has reduced the use of laptops and computers, which in turn are the most convenient and traditional means of using all Google services. 2. Development and creation of new solutions for events traditionally held on the Internet, including search, streaming video, purchases and money transfer, greatly affect the stability of the company. 3. Now about 30% of all online shoppers start searching in Amazon. This prevents Google from making money on such transactions. 4. Growth suspicion and distrust of Google.	1. Some of mobile devices, including Apple products, have their own search engines that compete with Google. 2. The growing sophistication of solutions for social networking and instant messaging and can now be used to send news, audio messages and even streaming video and some can be used to complete financial transactions. It provides an alternative to Google's not computer-based products. 3. Many companies are now developing their own applications to allow customers to bypass search engines. Examples of this include shopping apps. 4. Growing sophistication of applications. It's easier for designers than ever to come up with alternatives to Google products.

Table 1: PEST Analysis of Google Inc. (source: own)

SWOT analiysis of Google Inc.

Analysis of external factors:

Most influencing macroenvironmental factors are:

- Economic situation

The overall unfavorable economic situation may affect the stock price of the company in the stock market, which will immediately affect the state of the corporation.

- Political situation

Changing legislation has long been considered one of the most serious stumbling blocks in the development of strategies.

- Socio-cultural situation

Nowadays the global network is part of the culture of modern society and as long as it is, this factor will only contribute to the development of the company.

- Physical and geographical conditions

Google Inc. is a multinational corporation with many affiliates around the world. This territorial coverage allows to know more fully the desires and specifics of the consumer.

- Scientific and technical development

Scientific and technical development is the factor that helps the corporation, thanks to its amazing ability to track innovative inventions, keep up with the timeline and amaze its consumer guessing his wishes.

- International situation

The company should not lose its partners in other countries due to possible international conflicts, etc.

Speaking about the microenvironment, we can note such factors as:

- Competitors

Google Inc. owns the first most popular (77.04%) search engine in the world which processes 41.345.000.000 queries per month (market share 62.4%).

- Consumers

The company works for an audience of all ages and wealth levels.

- State

Due to the nature of the product offered by the company, there may be unforeseen situations that may lead to legal proceedings.

Based on all this, it can be noted that having achieved success, Google Inc. developing further, becoming more and more successful.

Analysis of the internal environment:

For a complete analysis of the internal environment of Google, it is necessary to explore three functional areas:

- structure;
- resources;
- organizational culture.

Analyzing the organizational structure of the company, we can conclude that it is consistent with existing corporate goals and objectives. Each employee is responsible for the work performed by him, according to the position. Departments and divisions interact with each other thanks to people in leadership positions who also manage personnel in their field.

Google's organizational culture is top notch. Employees do not interfere. The company gives everything that is needed for the workplace to become home. Each person is part of a huge mechanism performing his work. But this is not a dull routine work but a creative process. The employee feels needed, feels valued, because Google gives him a huge amount of benefits, a chic workplace that you can only dream of.

But Google is not a magical world where everything is perfect. I would like to highlight a few weaknesses:

1. Google is not represented in the social networks
2. Strong dependence on advertising
3. The relative low accuracy of search queries (50-60%)

SWOT Matrix

Strengths-Opportunities	**Weaknesses-Opportunities**
Improvement of technologies and development of new markets is possible due to the large financial opportunities. Google can easily master and conquer new markets due to the presence of highly qualified specialists	In case competitors become united and create a more powerful and attractive corporation, they can entice some highly qualified specialists A large number of information channels may add new problems with the law.
Sthength-Threats	**Weaknesses-Threats**
If Google starts to present itself in social networks, they can discover a new market for themselves and entice a huge number of users. Technology is constantly improving therefore, low search accuracy can be compensated in the future	Competitors can lure users to their side by increasing the accuracy of search queries Competitors may be the first to occupy the market by starting to present themselves in social networks.

Table 2: SWOT Analysis of Google Inc. (source: own)

3.1.1.2. Facebook Inc.

Facebook is one of the five most visited websites in the world. As of April 2017, the network's monthly audience is 1.968 billion people. As of June 2017, Facebook's audience reached 2 billion users — those who visited the site at least once a month or for a specified period of time were recorded using the Like button and tracking cookies. The daily active audience in March amounted to 720 million people - so much is fixed by the tracking network Facebook daily.[27]

Type of activity:

The company belongs to the technology sector.

The Company's business aims to create value for users, advertisers and developers. Advertisers can interact with more than 1.2 billion active users on Facebook or groups of users based on information users choose to share, such as age, location, gender, or interests. The company offers advertisers such advantages as the target audience, interoperability, Facebook ads, Facebook ad system and quantitative data on their ads.

Developers get the opportunity to use Facebook services for developers to create, develop and monetize their mobile and web applications that integrate with the Facebook network quickly and successfully.

The company receives almost all of its revenue from advertising and commissions related to the infrastructure for payment services, which allows users to purchase virtual and digital products from developers on Facebook.

The largest Facebook services and tools:

Facebook Inc. company is the owner of other popular services such as Instagram, WhatsApp, Facebook Messenger App, Business tools for targeting advertising.

Employees: 35.587 (2018)

Main Competitors: Snapchat, LinkedIn, Google, Twitter, Telegram.

Shareholders:

- Mark Zuckerberg - 28.2% (for 2012) (taking into account agreements with shareholders on the delegation of votes, Mark Zuckerberg controls approximately 57% of voting rights)
- Dustin Moskowitz (for 2012) - 7.6%

Institutional investors As of 2017, institutional investors hold 71.8% of Class A shares of the company. The largest of them are:

- The Vanguard Group
- BlackRock

[27] About Facebook https://newsroom.fb.com/company-info/

• FMR, LLC

• State Street Corporation

• T. Rowe Price

Vision and mission statements:[28]

Facebook, Inc. considers its mission to provide people with the opportunity to share information, make the world more open and build connections. The company creates technology to make communication faster, easier and richer.

Company principles:

- Freedom of communication and information sharing - People should have the freedom to share any information, in any medium and in any format.
- Ownership and control of information - People need to own their information. They should be able to share information with whom they want, and use it wherever they want, including outside Facebook.
- Free distribution of information - People should have freedom of access to all information open to them by other users.
- Fundamental equality - Everyone - be it a user, advertiser, developer, organization, or other legal entity - should have access to disseminating information on Facebook, regardless of its main activity.
- Social value - People should be free to establish trust and build reputation based on their personal qualities, and cannot be removed from Facebook for reasons other than those set forth in the Facebook Users Rights and Responsibilities Statement.
- Open platforms and standards - People should have program interfaces for sharing and accessing existing information. Requirements for these interfaces must be published and accessible to all.
- Basic services - To express themselves, communicate with other people and share information with them, people should be able to use Facebook for free.
- Universal well-being - The rights and obligations of Facebook and the users of the site should be described in the Regulations on Rights and Responsibilities, which should not contradict the principles outlined above.
- Clarity of process - Facebook should publicly provide information about its goals, plans, policies and operations.

[28] About Facebook https://newsroom.fb.com/company-info/

- One World - Facebook must cross geographical and national boundaries and be accessible to everyone in the world.

PEST anslysis of Facebook

Political factors	Economic factors
1. Many governments and users are worried that Facebook has a lot of user information. 2. The political stability of developed countries, as well as the support of the globalization of these states enables Facebook to expand its social networks and show advertising services around the world. 3. Political barriers in the Chinese market. The company's global growth is limited due to Chinese censorship.	1. Revenues stopped growing at the same pace as before. 2. A strong and strong US dollar led to monetary losses in foreign currencies. 3. Due to the expansion of the company, many jobs are provided, which has a positive effect on the economy. 4. Facebook is not only a social network but also a business platform that allows others to develop their business.
Social factors	**Technological factors**
1. Facebook is a social network and its initial purpose is to unite people and allow them to communicate freely at any time. 2. However, after the emergence of a business platform, the Facebook policy has changed, now in the news feed the user has more advertising than his friends' posts, which annoys users and the social interest in the platform decreases, but the commercial increases. 3. Data leakage pushes users away.	1. The company offers a messaging application that helps simplify communication without visiting the website. 2. The acquisition of such platforms and technologies as Instagram and WhatsApp helped to increase the company's market share. 3. Constant development and improvement of technology of business and other platforms.

Table 3: PEST Analysis of Facebook Inc. (source: own)

SWOT anslysis of Facebook Inc.

Analysis of external factors:

Facebook has a unique culture inside the company which encourages innovation and taking risks. Zuckerberg says “The riskiest thing is to take no risks”

Two main competitors are strong social networks: Instagram and WhatsApp but they both were acquired by Facebook Inc.

Facebook Inc. has the ability to diversify its activities outside of its main social networks and online advertising. The company has taken steps to use this external factor. Recently the company bought Oculus VR - virtual reality technology business that can complete social networking services. However, it needs further diversification to reduce business risks.

Increase in cybercrime can adversely affect user experience and, consequently, business performance.

Analysis of internal factors

The corporation adapts to changes in technology. Facebook users who have been users for a long time, have seen changes in the interface and several new changes in the layout every year. For example, video calls and timeline introduction. Like buttons, mobile integration and marketplace. Supports more than 70 languages.

SWOT Matrix

Strengths-Opportunities	**Weaknesses-Opportunities**
Attract new users using marketing strategies through social media Expansion of activities beyond basic services to increase growth	Invest money in acquiring own property, in order not to waist money on rent Provide more benefits to employees to increase their interest even more Implement and develop innovative solutions to extend the functionality of the web site and applications
Sthength-Threats	**Weaknesses-Threats**
Invest in intellectual property rights to fights with an increasing competition Use a strong distribution network to reach out to customers and fight off new entrants into the market	Increase spending on R&D to enable Facebook Inc to better compete with competition Provide a better work environment to retain talent and to ensure that employees don’t leave and join competitors. Strengthen security to avoid cybercrimes

Table 4: SWOT Analysis of Facebook Inc. (source: own)

3.1.1.3. Twitter Inc.

Twitter Inc. Founded by Jack Dorsey in 2007 and a corporation, Twitter is a global platform for public expression and real-time communication. Having developed a fundamentally new way to create, distribute and open content, the Company democratized the creation and distribution of content, allowing everyone from every corner of the world to be heard immediately and without hindrance. Users create about 500 million messages daily.[29]

Type of activity:

The company belongs to the technology sector.

The company offers people an attractive and effective way to get information on topics of interest to them, find out what is happening in the world right now and interact directly with each other. The company enables the timely creation and dissemination of ideas and information among people and organizations at the local and global level. Its platform allows users to quickly view messages and explore the content in more detail through links, photos, media and other applications that can be part of each message. Due to this, when some events take place in the world, such as planned, for example, sports competitions and television shows, as well as unexpected events, such as natural disasters and political revolutions, the Company's service creates a digital experience of these events in real time.

The largest Twitter services and tools:

- Web site and mobile applications - microblogging service, SMS – engineering
- Service and app "Moments" – 2015 - 25.02.2019
- Service Customer Feedback – for studding the NPS loyalty index and customer satisfaction index (CSAT).
- Targeted advertising

Twitter (TWTR) earns 85% of its advertising revenue. Twitter uses advertised tweets to promote accounts and thereby promotes trends. Twitter sells advertised tweets to marketers, and they then appear on Twitter user feeds. The company creates individual advertising opportunities using an algorithm to make sure that advanced tweets turn it into the correct timeframe of users. Promoted accounts are those that the advertiser pays for, who posts, tweets, in the list of target users. Twitter gets extra money by licensing data.

Employees: 3.372

Main Competitors: Facebook (including Instagram and WhatsApp), Alphabet (including Google and YouTube), Microsoft (including LinkedIn), Snap and Oath (formerly known as Yahoo), other digital distributors and traditional television providers.

[29] About Twitter https://about.twitter.com/ru/company.html

Shareholders

- The Vanguard Group, Inc. - 9.46%
- Morgan Stanley Investment Managem - 5.67%
- BlackRock Fund Advisors - 4.56%
- SSgA Funds Management,Inc. - 3.63%
- ClearBridge Investments LLC - 3.60%
- D. E. Shaw & Co. LP - 1.68%
- Northern Trust Investments, Inc. - 1.41%
- Capital Management LLC - 1.30%
- Geode Capital Management LLC - 1.20%
- Coatue Management LLC - 1.12%

Vision and mission statements:[30]

Mission: to give everyone the opportunity to create and share ideas and information instantly, without obstacles.

Company objective:

The main goal of the Company is to maximize its long-term shareholder value while respecting the laws of the jurisdictions in which it operates and while respecting the highest ethical standards.

Company principles:

- Telief in free speech
- Every voice can affect the world
- Twitter - for good deeds
- Transparency - twitter does not hide our political activities and donations

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[30] About Twitter https://about.twitter.com/ru/company.html

PEST Analysis of Twitter Inc.

Political factors	Economic factors
1. Shares of the company Twitter continued to fall after US President Donald Trump accused the social network of "shadow blocking" messages of republican politicians. 2. Twitter, due to censorship, loses to other competitors, such as Sina Weibo, in markets such as China, Iran and North Korea.	1. Interest in digital video advertising is growing, by 2020, streaming video will account for 82% of all web traffic, a hundred will come to significant changes in advertising, which in turn will have a big impact on the company as Twitter revenues directly depend on advertising 2. Twitter Inc. must comply with the various regulations in the different markets in which it is present. Over the past few years, many countries have changed the rules regarding not only entering the market, but also how computer service companies can operate at the local level
Social factors	**Technological factors**
1. Decrease in trust, and therefore decrease in users - a video was taken on YouTube, shot by a hidden camera, in which Twitter employees confirmed that they had free access to users' personal correspondence, which resulted in a decrease in the number of users 2. Twitter has a high popularity among users in Japan, as Twitter maintains anonymity, which means it is less aggressive in terms of confidentiality than Japanese culture is highly valued. 3. Twitter is often created and openly maintained blogs directly related to such movements as a campaign to protect the rights of women, animals, etc., which attracts new users.	1. The current trend is advertising its brand, services and products through the social network. In the annual report for 2017, the company stated that it actively promoted its solutions for business accounts and continued to invest in developing and improving opportunities for business accounts. 2. Today, users of social networks are 53% more likely to use mobile devices than regular laptops or computers, and this percentage will continue to grow, which has a positive effect on the company, since according to statistics, 82% of users visit the platform from mobile phones

Table 5: PEST Analysis of Twitter Inc. (source: own)

SWOT analysis of Twitter Inc.

Analysis of external environment:

In the past, Twitter was very adaptable to user requests, and even more so to the demands of the government. This is of course good for users. Also, it will be essencial for Twitter to ensure user privacy with maximum privileges because of the number of data leaks recently. This is due to the fact that in the past few years, the safety and privacy of users have been on the social radar. How Twitter cope with these demands will become a powerful or destructive asset for the company.

Internal environment:

Twitter has large user base which is more than 328 million. It was the first social network that created hashtags and appears to be a leading teal-time news platform. However it’s facing a large problem with user verification mechanism. Large number of the accounts are bots. Twitter Inc is unable to gather demographic data about the users as Facebook can, which makes impossible to apply targeting. The company is doing not so well in demand forecasting, but they built a reliable distribution network. Twitter is attractive for people and organizations, they use blogging for advertising and announcements. But recently, the user retention rate has dropped to 40%, indicating that users are passing to other social networks. According to the company's blog on Twitter, you can determine the popularity and market value of the organization. This makes it one of the most important companies in the world in the modern digital world.

SWOT Matrix

Strengths-opportunities	**Strengths-Threats**
Leveraging brand recognition in new segments	Provide new services and products keep creating new ideas, act quicker than competitors
Weaknesses-Opportunities	**Weaknesses-Threats**
Twitter, rarely innovates, and they can focus on improving the user experience, which ultimately leads to increased user activity. Twitter may offer new marketing and communication solutions for business accounts, which will affect the increase in the use of a sign on advertising and an increase in revenue. Investing into customer-oriented services and supply chain	Increase revenue that comes not from advertising to reduce risk Prevent leaks and cybercrimes Raise retention rate

Table 6: SWOT Analysis of Twitter Inc. (source: own)

3.1.2. Financial analysis

3.1.2.1. Google Inc.

Every year Alphabet revenue increases and in 2018 amounted to $ 136.82 billion, which is 23% more than in 2017. The bulk of the turnover comes from advertising revenue. Net income (EAT) decreases from 2016 to 2017, which is associated with an increase in Income Tax by 70%. From 2017 to 2018 Net Income increases by 58%.

In millions	2015	2016	2017	2018
Revenue	$74 989	$90 272	$110 855	$136 958
COGS	$23 101	$28 994	$38 668	$50 514
Sales	$74 989	$90 272	$110 855	$136 958
EBITDA	$24 818	$30 418	$34 217	$44 062
EBIT	$19 360	$23 716	$26 146	$31 531
EBT	$19 651	$24 150	$27 193	$34 913
EAT	$16 348	$19 478	$12 662	$30 736

Table 7. Income Statement: Alphabet Inc. (source: Annual Report of Alphabet Inc. 2015-2018)

Key financial indicators are also increasing every year. Total Assets in 2018 amounted to 135.6 billion, which is more for 59% than Total Liabilities that in 2018 was 55.2 billion.

In millions	2015	2016	2017	2018
Current assets	$90 144	$105 408	$124 308	$135 676
Cash	$73 066	$86 333	$101 871	$109 140
Account receivables	$13 909	$14 232	$18 705	$21 193
Average account receivable	$12 379	$14 071	$16 469	$19 949
Inventory	$491	$268	$749	$1 107
Operating long term assets	$57 317	$62 089	$72 987	$97 116
Fixed assets	$29 016	$34 234	$42 383	$59 719
Average total assets	$138 324	$157 479	$182 396	$215 044
Current liabilities	$19 310	$16 756	$24 183	$34 620
Account payables	$1 931	$2 041	$3 137	$4 378
Average account payable	$1 823	$1 986	$2 589	$3 758
Long term liabilities	$7 820	$11 705	$20 610	$20 544
Total debt	$1 995	$3 935	$3 969	$3 969
Total liabilities	$27 130	$28 461	$44 793	$55 164
Equity	$120 331	$139 036	$152 502	$177 628

Table 8. Balance Sheet: Alphabet Inc. (source: Annual Report of Alphabet Inc. 2015-2018)

Profitability ratios:

Profitability ratios	2015	2016	2017	2018	Industry Ratio
Net Profit Margin	21,80%	21,58%	11,42%	22,44%	20,7%
Gross Profit Margin	69,19%	67,88%	65,12%	63,12%	52,64%
Return on Assets (ROA)	0,012%	12,37%	6,94%	14,29%	9,11%
Returns on Equity (ROE)	0,014%	14,01%	8,30%	17,30%	20,55%
Return on Capital Employed (ROCE)	16,09%	17,06%	17,14%	17,75%	-

Table 9. PR of Google Inc. (source: own)

- Net Profit Margin decreased in 2016 and in 2017 too due to decrease in EAT according to increase in income tax. In 2018 ratio increased by 96% and was 22,44% that is more by 8% more than average industry ratio. From Net Profit Results shows that for every 1$ of Seles revenue after all expenses the company made:
    - in 2015 – 0,218 $
    - in 2016 – 0,2158 $
    - in 2017 – 0,1142 $
    - in 2018 – 0,2244 $
- Gross Profit Margin decreased by 4% for last three years. Gross Profit Margin in2018 is squeal to 63,12% which is higher by 16% than average Industry Ratio. GPM represents that the company has:
    - in 2015 – 69,10 %
    - in 2016 – 67,88 %
    - in 2017 – 65,12 %
    - in 2018 – 63,12%

  of its revenues left over after the direct costs that associated with cost of goods sold was paid.
- Total Assets of the company is increasing every year, so Return on Assets should also increasing, but it decreased in 2017 according to decrease in Net Income. And ROA again increased in 2018 due to increase in net income. ROA represents that every invested dollar in assets produced of net income:
    - in 2015 – 0,00012 $
    - in 2016 – 0,1237 $
    - in 2017 – 0,0694 $
    - in 2018 – 0,1429 $
- Total Equity of the company is increasing every year, but ROE decreased in 2017 according to decrease in Net Income. ROE again increased in 2018 and it was 17,30%

that is less than average industry ratio by 16%. ROE represents every 1 $ of shareholder's earned about

  - in 2015 – 0,00014 $
  - in 2016 – 0,14 $
  - in 2017 – 0,083 $
  - in 2018 – 0,173 $

- Return on Capital Employed was increasing for last 4 years. As higher ratio as more dollars of profits company made for every invested dollar. From the table can be seen that the company generated:
  - in 2015 – 0,16 $
  - in 2016 – 0,17 $
  - in 2017 – 0,171 $
  - in 2018 – 0,177 $

From the analysis of profitability ratios can be concluded that mostly the company operates effectively.

Liquidity Ratios:

Liquidity Ratios	2015	2016	2017	2018	Industry Ratio
Current Ratio	4,67	6,29	5,14	3,92	2,32
Quick Ratio	4,64	6,27	5,11	3,89	2,11
Cash Ratio	3,78	5,15	4,21	3,15	1,68

Table 10. LR of Google Inc. (source: own)

- Current Ratio increased in 2016 due to decrease in current liabilities, and decreased in 2017 and in 2018 by 18% and 23,7% - this is a negative trend, but the company has enough current assets to pay current liabilities and have current assets left over. Also CR in 2018 is still higher than industry ratio.
- According to changes in current liabilities Quick Ratio increased in 2016 and decrease in 2017 and in 2018. Quick Ratio in 2018 is greater than industry ratio by 44%. Quick Ratio results represents that the company has enough quick assets to pay quick liabilities and have also quick assets left over.
- Cash and cash equivalents was increasing from 2015 to 2018, Cash Ratio increasing in 2016 and decreasing in 2017 and in 2018 according to changes in current liabilities. Cash Ratio in 2018 is higher than industry ratio by 46%. Cash Ratios above 1 which means that with cash and equivalents all the current liabilities can be paid.

From the analysis of Liquidity ratios can be concluded that liquidity of the company is high.

Solvency ratios:

Solvency ratios	2015	2016	2017	2018	Industry Ratio
Debt to Equity Ratio	0,23	0,20	0,29	0,31	0,60
Debt to Capital Ratio	0,02	0,03	0,03	0,02	0,37
Debt to Asset Ratio	0,01	0,02	0,02	0,02	
Interest Coverage Ratio	186,15	191,26	239,87	312,19	21,58

Table 11. SR of Google Inc. (source: own)

- Debt to Equity Ratio decreased in 2016 and increased in 2017 and in 2018, but still lower than industry ratio. As lower DTER as better for investors. Debt to Equity Ratio represents how much liabilities is greater than there is equity:
    - 0,23 in 2015
    - 0,20 in 2016
    - 0,29 in 2017
    - 0,31 in 2018

  In other words, the assets of the company are funded
    - 4-to-1 by investors to creditors (investors own 80 cents of every 1 $ of assets while creditors only own 20 cents on the dollar)
    - 5-to-1 by investors to creditors (investors own 83,3 cents of every 1 $ of assets while creditors only own 16,6 cents on the dollar)
    - 3-to-1 by investors to creditors (investors own 75 cents of every 1 $ of assets while creditors only own 25 cents on the dollar)
    - 4-to-1 by investors to creditors (investors own 80 cents of every 1 $ of assets while creditors only own 20 cents on the dollar)
- Debt to Capital Ratio increased in 2016, saved position in 2017 and decreased in 2018 and it is lower than industry ratio. As lower ratio as the lower the risk to lenders and shareholders, the ratio is less than 1, which means that the debt levels are manageable efficiently.
- Debt to Asset Ratio is stable according to no change in Total Debt.
- Interest Coverage Ratio was increasing in years from 2014 to 2018 due to increase in EBIT and decrease in Interest expenses. ICR in 2018 is much higher than industry ratio and it is greater than 1, which means that the company well afford to pay its interest on company's debt along with its principal's payment.

From the analysis of Solvency ratios can be concluded that the company is able to make payments and pay off its long-term obligations to creditors and banks.

Efficiency ratios:

Efficiency ratios	2015	2016	2017	2018	Industry Ratio
Accounts Receivable Turnover	6,06	6,42	6,73	6,87	7,94
Inventory Turnover	47,05	108,19	51,63	45,63	12.01
Accounts Payables Turnover	12,67	14,60	14,94	13,44	4,44
Working Capital Turnover	1,06	1,02	1,11	1,36	1,79
Fixed Assets Turnover	2,58	2,64	2,62	2,29	4,45
Total Asset Turnover	0,54	0,57	0,61	0,64	0,51

Table 12. ER of Google Inc. (source: own)

- Accounts Receivable Turnover was increasing during last four years. ART ratio in 2018 is lower than industry ratio by 13,4%, but from positive tendency can be conclude that ART in 2019 will do up and will be on the line with average industry ratio. ART ratio represents that the company collect its receivables about:
    - in 2015 – 6, 06 times a year
    - in 2016 – 6,42 times a year
    - in 2017 – 6,73 times a year
    - in 2018 – 6,87 times a year
- Inventory Turnover increased in 2016 according to decrease in inventory, and decreased in 2017 and in 2018. IT ratio is twice higher than Industry Ratio, which means that the company more efficiently control it merchandise than its competitors.
- Accounts Payables is much higher than Industry Ratio, which means that the company can easily c pay off its current suppliers and vendors than its competitors. AP ratio results shows that the company is able to pay its vendors back on average once every month during year.
- Working Capital Turnover during last four years was increasing, but lower than industry ratio.
- Fixed Assets Turnover ratios for last four years are lower than Industry ratios, which means that Google used its fixed assets less efficiency than its competitors.
- Total Asset Turnover was increasing during last 4 years. TAT ratio in 2018 is still higher than Industry ratio, which means that the the company more efficiently use us assets to generate sales than its competitors. TAT ratios of Google represent that the company for every dollar in assets generates:
    - in 2015 – 54 cents
    - in 2016 – 57 cents
    - in 2017 – 61 cents

- in 2018 – 64 cents

From the analysis of Efficiency ratios the company should improve the utilization of their assets to generate income.

Market-based ratios:

	2015	2016	2017	2018
Stock price	758,88	771,82	1046,4	1035,61
TTM Sales per Share	100,79	120,78	147,73	182,25
TTM FCF per Share	55,04	84,63	80,98	71,08
TTM Net EPS	22,92	27,83	17,97	43,7
EPS Growth	11,03	22,06	-35,44	142,85
Enterprise Value	453,77	452,153	629,115	615,2
Book value per share	175,07	209,12	219,50	255,38

Table 13: Market-based ratios of Google.Inc.

- Earnings Per Share or TTM Net EPS in 2018 was 43,7 $, which is 1,9 times more than it was in 2015 – this is the better result than in 2017, when EPR decreased and was less by 35% than it was in 2016.

Market-based ratios	2015	2016	2017	2018	Industry Ratio
Price/Sales Ratio	7,53	6,39	7,08	5,68	4,83
Price-to-cash flow ratio	13,79	9,12	12,92	14,57	11.07
Price-Earnings Ratio	33,11	27,73	58,23	23,70	27,19
Price/Earnings to growth	3,00	1,26	-1,64	0,17	-
Price-to-book ratio	4,33	3,69	4,77	4,06	5,59

Table 14. M-BR of Google Inc. (source: own)

- Price/Sales Ratio – is not stable for last four years. P/S Ratio in 2018 is greater than Industry ratio and shows that how much investors put on the company for each 1 $ of revenue generated by the firm. The highest value was in 2015, which is greater by 24,5% than in 2018.
- Price-to-cash flow ratio in 2018 is higher than Industry ratio and. P/CF ratio shows that how much an investor is willing to pay for the cash flow generated by the company. After the decrease in 2016 ratio increased in 2017 and 2018.
- Price-Earnings Ratio is not stable: decreased in 2016, then increased in 2017, and again degreased in 2018.
- Price/Earnings to growth in 2018 is 0,17. When PEG ratio below 1 and shows that it is undervalued relative to its growth potential.
- Price-to-book ratio in 2018 is less than industry ratio, but still greater than 1, which means that the investors are willing to pay more for the company's net assets are worth.

3.1.2.2. Facebook Inc.

Revenue of Facebook Inc. is increasing for last four years and in 2018 it amounted to $ 55.83 billion, which is 23% more than in 2017. EBIT equals to EBT due to lack of interest expenses Net income (EAT) is increasing from 2015 to 2018 too. In 2018 Net income amounted to 22.11 billion that is greater by 31% than in 2017.

In millions	2015	2016	2017	2018
Revenue	$17 928	$27 638	$40 653	$55 838
COGS	$922	$1 447	$2 429	$4 040
EBITDA	$8 162	$14 870	$23 625	$29 685
EBIT	$6 194	$12 518	$20 594	$25 361
EBT	$6 171	$12 518	$20 594	$25 361
EAT	$3 688	$10 217	$15 934	$22 111

Table 15. Income Statement: Facebook Inc. (source: Annual Report of Facebook Inc. 2015-2018)

Total Assets is increasing every year and in 2018 amounted to 50.48 billion, which is more for 84% than Total Liabilities that in 2018 was 7.017 billion. Total cash assets decreased from 2017 to 2018 by 1,4%. Fixed assets increased by 67% from 2017 to 2018. Long term liabilities increased from 2015 to 2017 and decreased in 2018 by 3,5%.

In millions	2015	2016	2017	2018
Current assets	$21 652	$34 401	$48 563	$50 480
Cash	$18 434	$29 449	$41 711	$41 114
Account receivables	$2 559	$3 993	$5 832	$7 587
Average account receivable	$2 119	$3 276	$4 913	$6 710
Inventory	$-	$-	$-	$-
Operating long term assets	$27 755	$30 560	$35 961	$46 854
Fixed assets	$7 819	$11 803	$10 337	$31 573
Total assets	$49 407	$64 961	$84 524	$97 334
Average total assets	$44 796	$57 184	$74 743	$90 929
Current liabilities	$1 925	$2 875	$3 760	$7 017
Account payables	$196	$302	$380	$820
Average account payable	$186	$249	$341	$600
Long term liabilities	$3 264	$2 892	$6 417	$6 190
Total debt	$107 000	$-	$-	$-
Total liabilities	$5 189	$5 767	$10 177	$13 207
Equity	$44 218	$59 194	$74 347	$84 127

Table 16. Balance Sheet: Facebook Inc. (source: Annual Report of Facebook Inc. 2015-2018)

Profitability ratios:

Profitability ratios	2015	2016	2017	2018	Industry Ratio
Net Profit Margin	20,57%	36,97%	39,20%	39,60%	20,7%
Gross Profit Margin	84,01%	86,29%	86,58%	83,25%	52,64%
Return on Assets (ROA)	8,23%	17,87%	21,32%	24,32%	9,11%
Returns on Equity (ROE)	8,34%	17,26%	21,43%	26,28%	20,55%
Return on Capital Employed (ROCE)	14,01%	21,15%	27,70%	30,15%	-

Table 17. PR of Facebook Inc. (source: own)

- Net Profit Margin increased over last four years. In 2018 ratio increased just by 1,5% and it is more by 53% more than average industry ratio. From Net Profit Results shows that for every 1$ of Seles revenue after all expenses the company made:
  - in 2015 – 0,205 $
  - in 2016 – 0,369 $
  - in 2017 – 0,392 $
  - in 2018 – 0,296 $
- Gross Profit Margin increased over last four years bad decreased in 2018, because the increase in sales was insignificant. Gross Profit Margin in 2018 is squeal to 83,25% which is higher by 62% than average Industry Ratio. GPM represents that the company has:
  - in 2015 – 84,01 %
  - in 2016 – 86,29 %
  - in 2017 – 86,58 %
  - in 2018 – 83,25%

  of its revenues left over after the direct costs that associated with cost of goods sold was paid.
- Return on Assets ratio of the company is increasing every year. In 2018 ROA is higher than average industry ratio by 63%. ROA represents that every invested dollar in assets produced of net income:
  - in 2015 – 0,0823 $
  - in 2016 – 0,1787 $
  - in 2017 – 0,2132 $
  - in 2018 – 0,2432 $

- ROE of the company is increasing every year. In 2018 and it was 26,28% that is greater than average industry ratio by 21%. ROE represents every 1 $ of shareholder's earned about
    - in 2015 – 0,0834 $
    - in 2016 – 0,1726 $
    - in 2017 – 0,2143 $
    - in 2018 – 0,2628 $
- Return on Capital Employed was increasing for last 4 years. As higher ratio as more dollars of profits company made for every invested dollar. From the table can be seen that the company generated:
    - in 2015 – 0,14 $
    - in 2016 – 0,21 $
    - in 2017 – 0,277 $
    - in 2018 – 0,30 $

From the analysis of profitability ratios can be concluded that mostly the company operates effectively.

Liquidity Ratios:

Liquidity Ratios	2015	2016	2017	2018	Industry Ratio
Current Ratio	11,25	11,97	12,92	7,19	2,32
Quick Ratio	11,25	11,97	12,92	7,19	2,11
Cash Ratio	9,58	10,24	11,09	5,86	1,68

Table 18. LR of Facebook Inc. (source: own)

- Current Ratio increased from 2015 to 2017 and decreased by 45% in 2018 because the increase in current assets was insignificant, this is a negative trend, but it is still greater than industry ratio, so the company has enough current assets to pay current liabilities and have current assets left over.
- Quick Ratio are the same as Current Ratios, because the company has not inventory. increased in 2017 and decrease in 2017 and in 2018. Quick Ratio in 2018 is greater than industry ratio by 45%. Quick Ratio results represents that the company has enough quick assets to pay quick liabilities and have also quick assets left over.
- Cash and cash equivalents was increasing from 2015 to 2017 and decreased in 2018 due to decreased in Total Cash Assets. Cash Ratio in 2018 is higher than industry ratio by 70%. Cash Ratios above 1 which means that with cash and equivalents all the current liabilities can be paid.

From the analysis of Liquidity ratios can be concluded that liquidity of the company is high.

Solvency ratios:

Solvency ratios	2015	2016	2017	2018	Industry Ratio
Debt to Equity Ratio	0,12	0,10	0,14	0,16	0,60
Debt to Capital Ratio	0,71	0,00	0,00	0,00	0,37
Debt to Asset Ratio	2,17	0,00	0,00	0,00	
Interest Coverage Ratio	269,30	0,00	0,00	0,00	21,58

Table 19. SR of Facebook Inc. (source: own)

- Debt to Equity Ratio is increasing for last three years, but still lower than industry ratio. As lower DTER as better for investors. Debt to Equity Ratio represents how much liabilities is greater than there is equity:
  - 0,12 in 2015
  - 0,10 in 2016
  - 0,14 in 2017
  - 0,16 in 2018

  In other words, the assets of the company are funded
  - 8-to-1 by investors to creditors (investors own 87,5 cents of every 1 $ of assets while creditors only own 12,5 cents on the dollar)
  - 9-to-1 by investors to creditors (investors own 90 cents of every 1 $ of assets while creditors only own 10 cents on the dollar)
  - 6-to-1 by investors to creditors (investors own 84 cents of every 1 $ of assets while creditors only own 16 cents on the dollar)
  - 5-to-1 by investors to creditors (investors own 80 cents of every 1 $ of assets while creditors only own 20 cents on the dollar)
- Debt to Capital Ratio: from 2016 the company has not Long Term Debt.
- Debt to Asset Ratio: from 2016 the company has not Long Term Debt.

From the analysis of Solvency ratios can be concluded that the company is able to make payments and pay off its long-term obligations to creditors and banks.

Efficiency ratios:

Efficiency ratios	2015	2016	2017	2018	Industry Ratio
Accounts Receivable Turnover	8,46	8,44	8,28	8,32	7,94
Accounts Payables Turnover	4,96	5,81	7,12	6,73	4,44
Working Capital Turnover	0,91	0,88	0,91	1,28	1,79
Fixed Assets Turnover	2,29	2,34	3,93	1,77	4,45
Total Asset Turnover	0,40	0,48	0,54	0,61	0,51

Table 20. ER of Facebook Inc. (source: own)

- Accounts Receivable Turnover decreased in 2016 and in 2017, but again increased in 2018. ART ratio in 2018 is less than industry ratio. ART ratio represents that the company collect its receivables about:
  - in 2015 – 8, 46 times a year
  - in 2016 – 8,44 times a year
  - in 2017 – 8,28 times a year
  - in 2018 – 8,32 times a year
- Accounts Payables Turnover ratio in 2018 is greater than Industry Ratio, which means that the company can easier to pay off its current suppliers and vendors than its competitors.
- Working Capital Turnover during last four years was increasing, but lower than industry ratio.
- Fixed Assets Turnover decreased in 2018 and it is lower than Industry ratios, which means that Facebook used its fixed assets less efficiency than its competitors.
- Total Asset Turnover was increasing during last 4 years. In 2018 ratio is greater than Industry ratio, which means that the the company efficiently use its assets to generate sales than its competitors. TAT ratios of Facebook represent that the company for every dollar in assets generates:
  - in 2015 – 40 cents
  - in 2016 – 48 cents
  - in 2017 – 54 cents
  - in 2018 – 61 cents

From the analysis of Efficiency ratios the company should improve the utilization of their assets to generate income.

Market-based ratios:

	2015	2016	2017	2018
Stock price	109,11	130,98	193,09	166,69
TTM Sales per Share	6,3	9,56	13,99	19,56
TTM FCF per Share	5,42	9,21	13,9	13,8
TTM Net EPS	1,28	3,26	5,39	5,19
EPS Growth	1,27	3,47	5,39	7,57
Enterprise Value	278,487	303,275	471,421	334
Book value per share	15,54	20,48	25,59	29,28

Table 21: Market-based ratios of Facebook. Inc

- Earnings Per Share or TTM Net EPS in 2018 was 19,56 $, which is 3,1 times more than it was in 2015. Stock Price increased from 2015 – 2017 and decreased in 2018 by 13,6%.

Market-based ratios	2015	2016	2017	2018	Industry Ratio
Price/Sales Ratio	17,32	13,70	13,80	8,52	4,83
Price-to-cash flow ratio	20,13	14,22	13,89	12,08	11.07
Price-Earnings Ratio	85,24	40,18	35,82	32,12	27,19
Price/Earnings to growth	67,12	11,58	6,65	4,24	-
Price-to-book ratio	7,02	6,40	7,55	5,69	5,59

Table 22. M-bR of Facebook Inc. (source: own)

- Price/Sales Ratio is increasing for last four years. P/S Ratio in 2018 is greater than Industry ratio and shows that how much investors put on the company for each 1 $ of revenue generated by the firm. The highest value was in 2015, which is greater by 50% than in 2018.
- Price-to-cash flow ratio is decreasing for last four years, but in 2018 it is still higher than Industry ratio. P/CF ratio shows that how much an investor is willing to pay for the cash flow generated by the company and in 2018 it was 12,08.
- Price-Earnings Ratio is decreasing for last four years, but higher than industry ratio.
- Price/Earnings to growth in 2018 is 4,24. When the PEG coefficient is above 1 and shows that it is overvalued relative to its growth potential.
- Price-to-book ratio decreased in 2018, is still greater than industry ratio and greater than 1, which means that the investors are willing to pay more for the company's net assets are worth.

3.1.2.3. Twitter Inc.

Revenue of Twitter Inc. is increasing for last four years and in 2018 it amounted to $ 3.042 billion, which is by 19,6% more than in 2017. EBIT was negative in 2015 and 2016, because to fact that Total Operating Expenses was much higher than Gross profit. EBT was negative from 2015 to 2017, because the company had high increasing in Interest Expenses. EAT was negative from 2015 to 2017, after it increased in 2018 and became positive due to fact that Income Tax Expense in 2018 was -782 billion.

In millions	2015	2016	2017	2018
Revenue	$2 218	$2 530	$2 443	$3 042
COGS	$729	$883	$861	$967
EBITDA	$-124	$136	$441	$879
EBIT	$-437	$-266	$45	$453
EBT	$-533	$-441	$-95	$424
EAT	$-521	$-457	$-108	$1 206

Table 23. Income Statement: Twitter Inc. (source: Annual Report of Twitter Inc. 2015-2018)

Total Assets is increasing every year and in 2018 amounted to 10.163 billion, which is more for 67% than Total Liabilities that in 2018 was 3.357 billion. Total cash assets increased from 2017 to 2018 by 13%. Fixed assets decreased in 2016 and increased in 2018. Total debt Is increasing every year.

In millions	$2 015	$2 016	$2 017	$2 018
Current assets	$4 382	$4 652	$5 322	$7 111
Cash	$914	$998	$1 647	$1 894
Account receivables	$639	$651	$664	$789
Average account receivable	$529	$645	$658	$727
Inventory	$-	$-	$-	$-
Operating long term assets	$2 060	$2 218	$2 090	$3 052
Fixed assets	$735	$784	$774	$885
Total assets	$6 442	$6 870	$7 412	$10 163
Average total assets	$6 013	$6 656	$7 141	$8 788
Current liabilities	$506	$584	$583	$1 516
Account payables	$134	$122	$171	$145
Average account payable	$94	$128	$147	$158
Long term liabilities	$1 568	$1 681	$1 782	$1 841
Total debt	$1 515	$1 606	$1 709	$1 755
Total liabilities	$2 074	$2 265	$2 365	$3 357
Equity	$4 368	$4 605	$5 047	$6 806

Table 24. Balance Sheet: Twitter Inc. (source: Annual Report of Twitter Inc. 2015-2018)

Profitability ratios:

Profitability ratios	2015	2016	2017	2018	Industry Ratio
Net Profit Margin	-23,49%	-18,06%	-4,42%	39,64%	20,7%
Gross Profit Margin	67,13%	65,10%	64,76%	68,21%	52,64%
Return on Assets (ROA)	-8,67%	-6,87%	-1,51%	13,72%	9,11%
Returns on Equity (ROE)	-11,93%	-9,92%	-2,14%	17,72%	20,55%
Return on Capital Employed (ROCE)	-10,00%	-5,78%	0,89%	6,66%	-

Table 25. PR of Twitter Inc. (source: own)

- Net Profit Margin was negative until 2017 as EAT. In 2018 ratio increased by 111% and was 39,64% that is more by 47% more than average industry ratio. From Net Profit Results shows that for every 1$ of Seles revenue after all expenses the company made:
  - in 2015 – -0,235 $
  - in 2016 – -0,18 $
  - in 2017 – -0,0442 $
  - in 2018 – 39,64 $
- Gross Profit Margin increased in 2018 by 5% from 2017. Gross Profit Margin in 2018 is equal to 68,21% which is higher by 22% than average Industry Ratio. GPM represents that the company has:
  - in 2015 – 67,13 %
  - in 2016 – 65,10 %
  - in 2017 – 64,76 %
  - in 2018 – 68,21%

  of its revenues left over after the direct costs that associated with cost of goods sold was paid.
- Return on Assets is increasing every year. ROA became positive in 2018 due to positive net income and it is higher than industry ratio. ROA represents that every invested dollar in assets produced of net income:
  - in 2015 – -0,0867 $
  - in 2016 – -006087 $
  - in 2017 – -0,0151 $
  - in 2018 – 0,1372 $
- Total Equity of the company is increasing every year. ROE is also increasing and in 2018 it became positive in 2018 due to positive net income according to positive in Net Income, but it is less than industry ratio. ROE represents every 1 $ of shareholder's earned about

- in 2015 – -0,1193 $
- in 2016 – -0,0992 $
- in 2017 – -0,0214 $
- in 2018 – 0,1772 $

- Return on Capital Employed was increasing for last 4 years. As higher ratio as more dollars of profits company made for every invested dollar. From the table can be seen that the company generated:
  - in 2015 – -0,10 $
  - in 2016 – -0,578 $
  - in 2017 – 0,0089 $
  - in 2018 – 0,666 $

From the analysis of profitability ratios can be concluded that from 2018 the company operates more effectively than before.

Liquidity Ratios:

Liquidity Ratios	2015	2016	2017	2018	Industry Ratio
Current Ratio	8,66	7,97	9,13	4,69	2,32
Quick Ratio	8,66	7,97	9,13	4,69	2,11
Cash Ratio	1,81	1,71	2,83	1,25	1,68

Table 26. LR of Twitter Inc. (source: own)

- Current Ratio decreased in 2016 due to increase in current liabilities, increased in 2017 and again decreased 2018 by 49% according to increase in current liabilities by 2,6 times from 2017 23,7% - this is a negative trend, but it is two times greater than industry ratio, so the company has enough current assets to pay current liabilities and have current assets left over.
- According to changes in current liabilities Quick Ratio decreased in 2016, increased in 2017 and again decreased 2018. Quick Ratio in 2018 is greater than industry ratio by 51%. Quick Ratio results represents that the company has enough quick assets to pay quick liabilities and have also quick assets left over.
- Cash and cash equivalents deceased from 2015 to 2016, Cash Ratio increasing in 2017 and decreasing in 2018 according to changes in current liabilities and in cash assets. Cash Ratio in 2018 is less than industry ratio, but it is above 1 which means that with cash and equivalents all the current liabilities can be paid.

From the analysis of Liquidity ratios can be concluded that liquidity of the company not stable and has negative trend.

Solvency ratios:

Solvency ratios	2015	2016	2017	2018	Industry Ratio
Debt to Equity Ratio	0,47	0,49	0,47	0,49	0,60
Debt to Capital Ratio	0,26	0,26	0,25	0,20	0,37
Debt to Asset Ratio	0,24	0,23	0,23	0,17	-
Interest Coverage Ratio	-0,45	-0,27	0,43	-3,43	21,58

Table 27. SR of Twitter Inc. (source: own)

- Debt to Equity Ratio is stable and does not decrease below 0.47 and does not rise above 0.49, but still lower than industry ratio. As lower DTER as better for investors. Debt to Equity Ratio represents how much liabilities is greater than there is equity:
  - 0,47 in 2015
  - 0,49 in 2016
  - 0,47 in 2017
  - 0,49 in 2018

  In other words, the assets of the company are funded
  - 1-to-1 by investors to creditors
- Debt to Capital Ratio decreased in 2016, saved position in 2017 and decreased in 2018 and it is lower than industry ratio. As lower ratio as the lower the risk to lenders and shareholders, the ratio is less than 1, which means that the debt levels are manageable efficiently.
- Debt to Asset Ratios decreasing for last four years.
- Interest Coverage Ratio increased from 2015 to 2017 due to increase in EBIT. ICR in 2018 is negative, because Interest Expenses in 2018 is negative. A negative net interest shows that the company paid more interest on its loans than received in interest on its investments.

From the analysis of Solvency ratios can be concluded that the company from 2018 is able to make payments and pay off its long-term obligations to creditors and banks.

Efficiency ratios:

Efficiency ratios	2015	2016	2017	2018	Industry Ratio
Accounts Receivable Turnover	4,20	3,92	3,72	4,19	7,94
Accounts Payables Turnover	7,80	6,90	5,88	6,12	4,44
Working Capital Turnover	0,57	0,62	0,52	0,54	1,79
Fixed Assets Turnover	3,02	3,23	3,16	3,44	4,45
Total Asset Turnover	0,37	0,38	0,34	0,35	0,51

Table 28. ER of Twitter Inc. (source: own)

- Accounts Receivable Turnover decreasing in 2016 and 2017 according to decrees in Accounts Receivable and increase in 2018 due to increase in Net Sales and in Accounts Receivable. ART ratio in 2018 is lower than industry. ART ratio represents that the company collect its receivables about:
  - in 2015 – 4,20 times a year
  - in 2016 – 3,92 times a year
  - in 2017 – 3,73 times a year
  - in 2018 – 4,19 times a year
- In 2018 Accounts Payables is higher than Industry Ratio by 1,68, which means that the company can easily c pay off its current suppliers and vendors than its competitors. AP ratio results shows that the company is able to pay its vendors back on average once every month during year.
- Working Capital Turnover is not stable during last four years, but lower than industry ratio.
- Fixed Assets Turnover ratios for last four years are lower than Industry ratios, which means that Twitter used its fixed assets less efficiency than its competitors.
- Total Asset Turnover is less than Industry ratio during last 4 years, which means that the the company less efficiently use its assets to generate sales than its competitors. TAT ratios of Twitter represent that the company for every dollar in assets generates:
  - in 2015 – 37 cents
  - in 2016 – 38 cents
  - in 2017 – 34 cents
  - in 2018 – 35 cents

From the analysis of Efficiency ratios the company should improve the utilization of their assets to generate income.

Market-based ratios:

	2015	2016	2017	2018
Stock price	23,14	16,3	24,01	28,74
TTM Sales per Share	3,37	3,62	3,34	3,94
TTM FCF per Share	0,15	1,89	2,46	2,31
TTM Net EPS	-0,79	-0,65	-0,16	1,56
Enterprise Value	14,169	9,673	15,323	18,389
Book value per share	6,29	6,38	6,76	8,49

Table 29: Market-based ratios of Twitter Inc.

- Earnings Per Share or TTM Net EPS was negative from 2015 to 2017. In 2018 became positive and was 1,56 $. Stock price is increasing for last four years

Market-based ratios	2015	2016	2017	2018	Industry Ratio
Price/Sales Ratio	6,87	4,50	7,19	7,29	4,83
Price-to-cash flow ratio	154,27	8,62	9,76	12,44	11.07
Price-Earnings Ratio	-29,29	-25,08	-150,06	18,42	27,19
Price-to-book ratio	3,68	2,55	3,55	3,39	5,59

Table 30. M-bR of Twitter Inc. (source: own)

- Price/Sales Ratio decreased in 2016 and increased in 2017 and in 2018. P/S Ratio in 2018 is greater than Industry ratio and shows that how much investors put on the company for each 1 $ of revenue generated by the firm.
- Price-to-cash flow ratio in 2018 became higher than Industry ratio and P/CF ratio shows that how much an investor is willing to pay for the cash flow generated by the company. After the decrease in 2016 ratio increased in 2017 and 2018.
- Price-Earnings Ratio increased in 2018, but it is still less than industry ratio.
- Price-to-book ratio in 2018 is less than industry ratio, but still greater than 1, which means that the investors are willing to pay more for the company’s net assets are worth.

1.1.2.4 Comparison

For comparison, analysis results for 2018 were taken.

Profitability ratios	Net Profit Margin	Gross Profit Margin	Return on Assets (ROA)	Returns on Equity (ROE)	Return on Capital Employed (ROCE)
Google	22%	63%	14%	17%	18%
Facebook	40%	83%	24%	26%	30%
Twitter	40%	68%	14%	18%	7%

Table 31. Profitability ratios: Comparison

Profitability ratios: it is clear from the table that Facebook Inc. shows better results, which means that the company can better than its competitors achieve profits from their operations.

Liquidity Ratios	Current Ratio	Quick Ratio	Cash Ratio
Google	3,92	3,89	3,15
Facebook	7,19	7,19	5,86
Twitter	4,69	4,69	1,25

Table 32. Liquidity ratios: Comparison

Liquidity ratios: it is clear from the table that Facebook Inc. shows better results, which means that liquidity of the company is higher than of its competitors and more attractive for investment.

Market-based ratios	Earnings Per Share	Book value per share	Price/Sales Ratio	Price-to-cash flow ratio	Price-Earnings Ratio	Price-to-book ratio
Google	43,70	255,38	5,68	14,57	23,70	4,06
Facebook	7,57	29,28	8,52	12,08	32,12	5,69
Twitter	1,56	8,49	7,29	12,44	18,42	3,39

Table 33. Market-based ratios: Comparison

Market-based ratios: Google Inc. has higher Earnings Per Share and Book Value Per Share, but Facebook Inc. has better ratio's results, which means that Facebook Inc. is more attractive for investment.

Solvency ratios	Debt to Equity Ratio	Debt to Capital Ratio	Debt to Asset Ratio	Interest Coverage Ratio
Google	0,31	0,02	0,02	312,19
Facebook	0,16	0,00	0,00	0,00
Twitter	0,49	0,20	0,17	-3,43

Table 34. Solvency ratios: Comparison

Solvency ratios: it is clear from the table that Facebook Inc. shows better results, because so lower DTER as better for investors and the company has not long term debt which means that the company is more attractive to investors better than its competitors.

Efficiency ratios	Accounts Receivable Turnover	Inventory Turnover	Accounts Payables Turnover	Working Capital Turnover	Fixed Assets Turnover	Total Asset Turnover
Google	6,87	45,63	13,44	1,36	2,29	0,64
Facebook	8,32	-	6,73	1,28	1,77	0,61
Twitter	4,19	-	6,12	0,54	3,44	0,35

Table 35. Efficiency ratios: Comparison

Efficiency ratios: Google Inc. shows better results, which means that the company better than its competitors utilize assets and generate them into income, better collect cash from customer.

3.1.3. Technical analysis

3.1.3.1. Google Inc.

The nature of the property of the company is private. In terms of legal status, Google is a public corporation: since August 19, 2004, the company's shares have been traded on the American NASDAQ. According to the ownership of the company on the capital and control of Google should be attributed to the national company. The main shareholders are the founders of the company are Americans Eric Schmidt, Sergey Brin and Larry Page, as well as the American companies Sherpalo, Genentech and Intel. On February 28, 2019, the closing price of the shares was $ 1122. The minimum and maximum share price for the last year: 1055 and 1147 US dollars, respectively.

Stock market of GOOG for from January 2018 to February 2019

Figure 1: Analysis of changes in the stock market of GOOG for from January 2018 to February 2019 [31]

1. After flat from 01.2018 to 03.2018 at 12.03.2018 there is bearish reversal and down-trend with open price – 1163 $ and close price 1135 $.
2. 09.04.2018: Open price – 1016 $, close price – 1029 $. Bullish reversal and up-trend.
3. 13.08.2018: Open price – 1236 $, close price – 1200 $. Bearish reversal and down-trend.
4. 24.12.2018: Open price – 973 $, close price – 1037 $. Bullish reversal and up-trend.

Moving Average, MASD and RSI, GOOG

Figure 2: Analysis of indecators: Moving Average, MASD and RSI, GOOG

At the end of February 2018:

1. Moving Average (5) is above Moving Average (25) – trend will go up.
2. MACD is under zero line, but it is going up, which means there is up-trend, but it is better to wait for confirmation of the trend.
3. RSI is 55 (near 50) – no trend.

Summary: buy or wait for confirmation.

3.1.3.2. Facebook Inc.

A truly grand event for Facebook and for the market as a whole was Facebook's initial public offering (IPO) on NASDAQ on May 18, 2012. Demand for Facebook shares exceeded supply by several times. On February 28, 2019, the closing price of the shares was $ 161. The minimum and maximum share price for the last year: 143 and 172US dollars, respectively.

Stock market of FB for from January 2018 to February 2019

Figure 3: Analysis of changes in the stock market of FB for from January 2018 to February 2019

1. 12.03.2018 there is bearish reversal and down-trend with open price – 185,23 $ and close price 185,09 $.
2. 09.04.2018: Open price – 157 $, close price – 164 $. Bullish reversal and up-trend.
3. 23.07.2018: Open price – 210 $, close price – 174 $. Bearish reversal and down-trend.
4. 24.12.2018: Open price – 123 $, close price – 133 $. Bullish reversal and up-trend.
5. During the last two weeks of February the price is moving down.

Moving Average, MASD and RSI, FB

Figure 4: Analysis of indicators: Moving Average, MASD and RSI, FB

At the end of February 2018:

1. Moving Average (5) is above Moving Average (25) – trend will go up
2. MACD is under zero line, but it is going up, which means there is up-trend, but it is better to wait for confirmation of the trend.
3. RSI is 54 (near 50) – no trend

Summary: buy or wait for confirmation.

3.1.3.3. Twitter Inc.

The Company's common shares are listed on the New York Stock Exchange LLC, where they are traded under the TWTR symbol. As of the end of 2018, 1,181 shareholders were registered in the shareholder register of the Company and 588,378,111 ordinary shares were issued and were outstanding. On February 28, 2019, the closing price of the shares was $ 30.6. The minimum and maximum share price for the last year: 29.42 and 35.25 US dollars, respectively.

Stock market of Twitter from January 2018 to February 2019

Figure 5: Analysis of changes in the stock market of Twitter from January 2018 to February 2019

1. 22.01.2018: Open price – 23,17 $, close price – 24,27 $. Bullish reversal and up-trend.
2. 19.03.2018: Open price – 35,13 $, close price – 31,03 $. Bearish reversal and down-trend.
3. 21.05.2018: Open price – 33,02 $, close price – 33,63 $. Bullish reversal and up-trend.
4. 09.07.2018: Open price – 46,74 $, close price – 44,49 $. Bearish reversal and down-trend.
5. From 09.2018 to 01.2019 there is no trend – flat.

Moving Average, MASD and RSI, TWTR

Figure 6: Analysis of indicators: Moving Average, MASD and RSI, TWTR

At the end of February 2018:

1. Moving Average (50) is above Moving Average (5) – trend will go down
2. MACD crossed the zero line in July, after that it is under zero line which means it is bad time to buy.
3. RSI is 47 (near 50) – no trend.

Summary: not to buy.

3.1.3.4 Comparison

1) 1 year stock market results:

At the end of February 2018

- GOOG is above zero line by 4,71% and there is up trend
- FB is under zero line by 8,48% and there is down trend
- TWTR is under zero line by 4,53% and there is down trend
    - Summary: GOOG has the best results, according to the uptrend.

Figure 7: Stock market comparison, 1 year (Yahoo Finance https://finance.yahoo.com)

2) 6 months stock market results:

At the end of February 2018

- GOOG is under zero line by 6,4%, but there is up trend
- FB is under zero line by 5,9% and there is down trend
- TWTR is under zero line by 11,7%, there is start of up trend
    - Summary: GOOG has the better result, according to the uptrend.

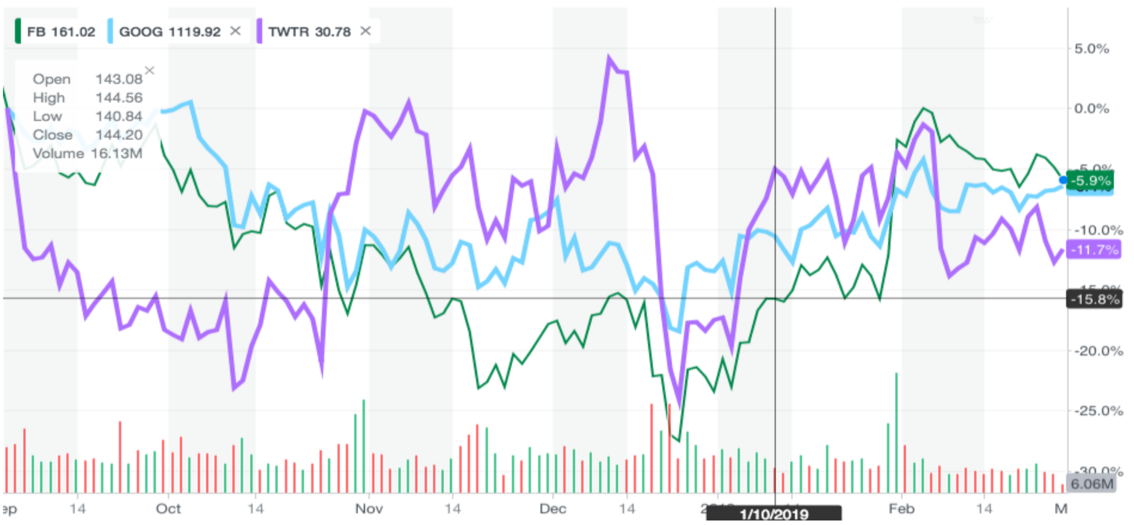

Figure 8: Stock market comparison, 6 months (Yahoo Finance https://finance.yahoo.com)

3) 3 months stock market results:

At the end of February 2018

- GOOG is above zero line by 0,8% and there is up trend
- FB is under zero line by 2,8% and there is down trend
- TWTR is under zero line by 7,3%, but there is start of up trend
    - Summary: GOOG has the better result, according to the uptrend.

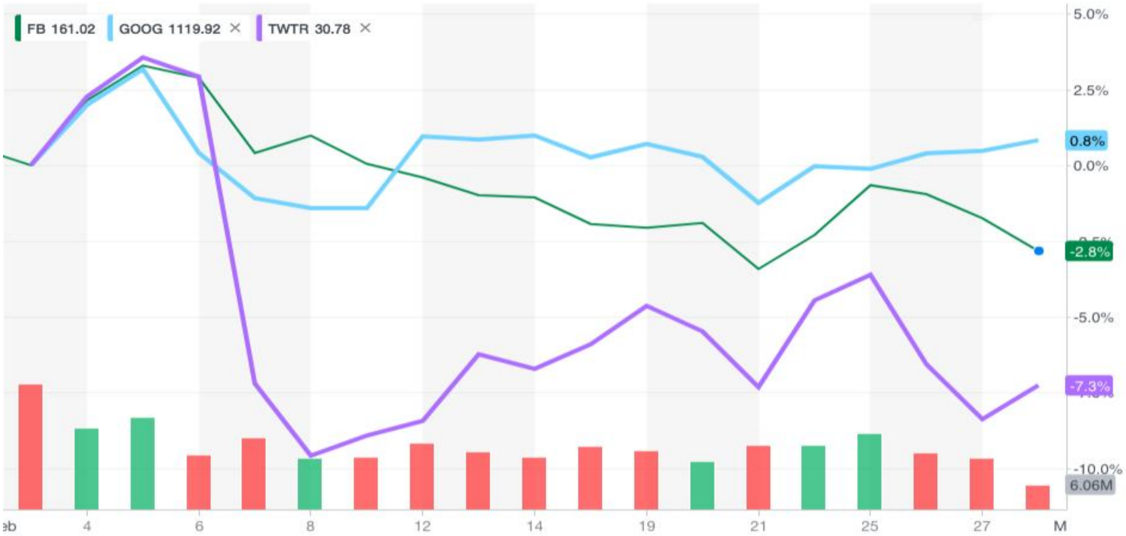

Figure 9: Stock market comparison, 3 months (Yahoo Finance https://finance.yahoo.com)

4) 1 month stock market results:

At the end of February 2018

- GOOG is above zero line by 1,22% and there is up trend
- FB is under zero line by 14,13% and there is down trend
- TWTR is under zero line by 8,56%, but there is start of up trend
    - Summary: GOOG has the better result, according to the uptrend.

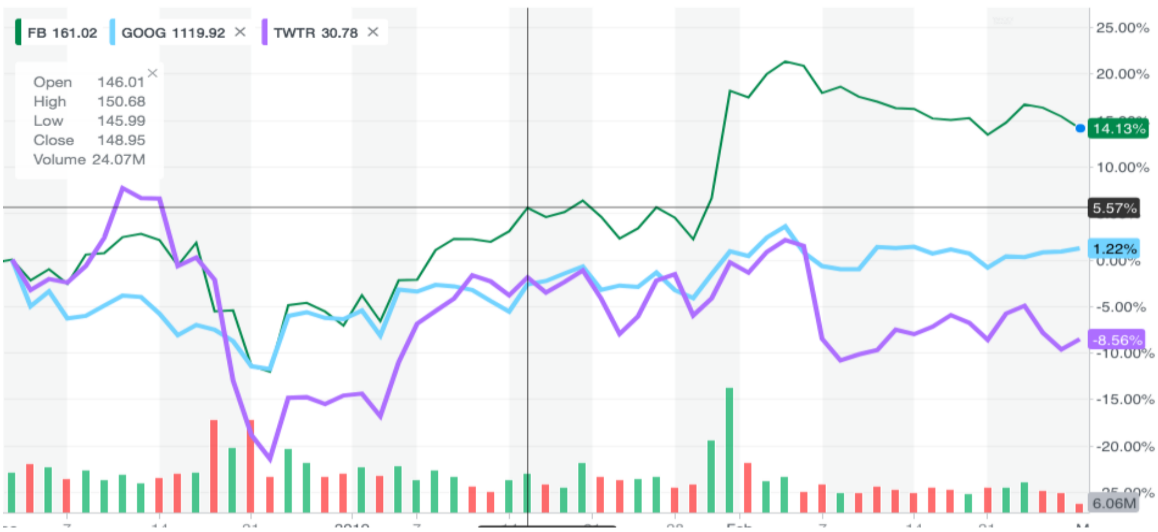

Figure 10:Stock market comparison, 1 month (Yahoo Finance https://finance.yahoo.com)

4. Conclusion

Google Inc., Facebook Inc. and Twitter are global technology companies that set trends on the market. All three companies have a strong brand, but not always behind the popularity and fame of the brand lies the high productivity of the company. After the analysis, it became clear that the main source of income for all three companies is advertising revenue, which is why companies compete. However, the types of technology for the advertising service that companies provide is different. Google is based on contextual advertising, and Facebook and Twitter provide targeted service. To the question "which is company more attractive to investors?" unequivocally difficult to answer. However, of the three in all respects, two can be distinguished: Google and Facebook. Google's total revenue is higher than Facebook's, but analysis of financial indicators showed that Facebook's more efficient. While Google is a leader on the stock market. In this case, it is important to remember about the diversification of investments. Diversification - investing in different assets to reduce risks. At the same time, ideally, risk reduction should have a minimal effect on portfolio returns. In order to diversify risks in investments, it is customary to include different classes of financial instruments in a portfolio, for example, different financial instruments of the same type - shares of several companies. An investor can distribute his funds between the shares of Google and Facebook to avoid risk.

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