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Bachelor Thesis

Information asymmetry, moral hazard and agency problem - Theoretical overview and practical implications

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Information asymmetry, moral hazard and agency problem – Theoretical overview and practical implications

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Objectives of thesis

The objective of the thesis is to show the relevance of the agency problem in corporations. For showing why the owners have to be ahead of managers actions and forecast the efficiency of each employee it is necessary to analyze the theoretical base of agency theory and conduct analytical research.

Methodology

The methodology of the thesis includes exploring the main ideas of the agency problem, information asymmetry, moral hazard and their relation to corporate structure and what measures could be implemented through a literature survey. Further, to achieve the goal of the thesis the analytical research with comparative analysis, KPI, efficiency and financial ratios of existing corporations will be provided.

The proposed extent of the thesis

30-40

Keywords

Agency theory, corporations, managers, contract agreement, asymmetric information, performance measure, CEO

Recommended information sources

Agrawal, A., Knoeber, C. (1996), "Firm Performance and Mechanisms to Control Agency Problems between Managers and Shareholders " , The Journal of Financial and Quantitative Analysis, vol. 31, no. 3, pp. 377-397, ISSN 0022-1090, DOI 10.2307/2331397

Braun, R. (2019), "Corporate Stakeholder Democracy: Politicizing Corporate Social Responsibility", Central European University Press, ISBN 978-963-386-292-6

Harris, M., Raviv, A. (2010), "Control of Corporate Decisions: Shareholders vs. Management" , The Review of Financial Studies, vol. 23, no. 11, pp. 4115-4147, ISSN 0893-9454, DOI 10.2139/ssrn.965559

Chennattu, A. (2020), "Managing with Integrity: An Ethical Investigation into the Relationship between Personal and Corporate Integrity", Fortress Press, ISBN 978-1-5064 5042

Shapiro, S. (2005), "Agency Theory. Annual Review of Sociology", Annual Review of Sociology, vol. 31, no. 1, pp. 263-284, ISSN 0360-0572, DOI 10.1146/annurev.soc.31.041304.122159

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Declaration

I declare that I have worked on my bachelor thesis titled "Information asymmetry, moral hazard and agency problem - Theoretical overview and practical implications" 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 any copyrights.

In Prague on 15.03.2022 ____________________________

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Information asymmetry, moral hazard and agency problem - Theoretical overview and practical implications

Abstract

The Thesis is focused on an agency problem Information asymmetry, moral hazard, and their relationship to each other. The theoretical part explains these concepts and what role they play in building employee relationships and business implementation. Firstly, it provides a theoretical basis for the history of occurrence and scientific discussion on the concept of the agency problem, information asymmetry and moral hazard. Further options are provided for the possibility of solving the principal-agent problem. In the first part of the practical part, the Enron case is shown in order to make it clear how important it is to reckon with agency problem, information asymmetry, and moral hazard, and what kind of collapse and losses ignoring these aspects can lead to. To do this, their fraudulent financial schemes are provided and based on their data. Further, the conclusion is made about the consequences of the collapse of Enron and suggests ways to solve the agency problem that could help in the company's situation. In the next part of the practical part, the possibilities for solving the principal-agent problem are applied at the branding agency. After conducting a study of the company and its employees, critical problems were identified. The data on the difference in the percentage of employees who are willing to distort information before and after the introduction of methods for solving the agency problem is presented. The significance of the results is assessed using the Wilcoxon Test. In conclusion, the results of the analysis are described.

Keywords: agency problem, moral hazard, information asymmetry, principal, agent, opportunistic behavior, managers, shareholders, Enron, control

Informační asymetrie, morální hazard a problém agentury-teoretický přehled a praktické důsledky

Abstrakt

Práce je zaměřena na problém agentury, informační asymetrie, morální hazard a jejich vzájemný vztah. Teoretická část vysvětluje tyto pojmy a jakou roli hrají při budování vztahů se zaměstnanci a při realizaci podnikání. Za prvé, poskytuje teoretický základ pro historii výskytu a vědeckou diskusi o konceptu agenturního problému, informační asymetrie a morální hazard. Další možnosti jsou poskytovány pro možnost řešení problému hlavního agenta. V první části praktické části je ukázán případ Enron, aby bylo jasné, jak důležité je počítat s agenturním problémem, informační asymetrií a morálním nebezpečím a jaký druh kolapsu a ztrát ignorování těchto aspektů může vést. Za tímto účelem jsou poskytovány jejich podvodné finanční systémy a na základě jejich údajů. Dále je učiněn závěr o důsledcích kolapsu společnosti Enron a navrhuje způsoby řešení problému agentury, které by mohly pomoci v situaci společnosti. V další části praktické části jsou aplikovány možnosti řešení problému principal-agent v brandingové agentuře. Po provedení studie společnosti a jejích zaměstnanců byly identifikovány kritické problémy. Jsou uvedeny údaje o rozdílu v procentech zaměstnanců, kteří jsou ochotni zkreslit informace před a po zavedení metod řešení problému agentury. Významnost výsledků se hodnotí pomocí Wilcoxonova testu. Na závěr jsou popsány výsledky analýzy.

Klíčová slova: problém agentury, informační asymetrie, morální hazard, hlavní, agent, oportunistické chování, manažeři, akcionáři, Enron, kontrola

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1 Introduction

The relevance of the topic lies in the fact that one of the central problems of any modern corporation is the agency problem. The owner hires managers to achieve certain goals, realizing at the same time that they may pursue goals that do not coincide with him. Therefore, it is very important for owners to understand how much the goal set for managers has been achieved. Nevertheless, the profit depends not only on the efforts of managers but also on certain external factors. The owner cannot determine how high the profit received due to the efforts of managers or the action of external factors is. This is, in fact, a typical agent problem, or a principal-agent problem. In the ordinary consciousness, the agency problem is associated with the fact that executive management seeks to get winnings at the expense of shareholders. However, the agency problem affects not only the distribution of winnings among the participants of corporate governance but also the value of the company.

1.1 Objectives

The objective of the thesis is to show the relevance of the agency problem in corporations. For showing why the owners have to be ahead of managers' actions, it is necessary to analyze the theoretical base of agency theory and conduct a research of the problem and its impact on the company's results.
To demonstrate how the knowledge proposed from the theoretical base can be applied to real companies. To give a conclusion about the usefulness and importance of implementing possibilities to solve the principal-agent problem

1.2 Methodology

The methodology of the thesis includes exploring the main ideas of the agency problem, information asymmetry, moral hazard and their relation to corporate structure, and what measures could be implemented to solve the problem through the analysis of the literature survey and existing materials.

Then, with the help of the Enron study case will be explored why principals should be ahead of agents' actions and what kind of collabs can lead to ignoring agency problems. It starts with a common description of the history of Enron and then the facts of the opportunistic behavior, information asymmetry, and a lot of problems connected with agency problem will be uncovered. As the main problems of Enron were associated with accounting frauds Enron's Net Income and Cash Flow from Operations, Declining Gross Profit Margin and Net Profit Margin, Free Cash Flow, and comparison of NASDAQ Composite index and Enron stock performance as the evidence of problems will be provided and analyzed. After this, to show what damage suffered to all the structures connected to Enron’s principal-agent problem, outcomes from this will be presented. The last part of the Enron study case consists of the measures of preventing all this collapse and the conclusion.

The second part of the practical part includes the case of the existing branding agency. With the help of provided company structure and employees responsibilities, which was formed from an interview with the managing partner of the agency will analyze what kind of agency problem, information asymmetry and moral hazard are related. Further, the anonymous survey will provide the percentage of employees in each department that are willing to distort information if they knew they would benefit from it. Thereafter, in each department, the methods of solving agency problems will be applied. After that, through the anonymous survey, a new percent of employees in each department who are willing to distort information if they knew they would benefit from it will be provided. Then, with the help of a statistical tool (Wilcoxon nonparametric test) will be known if there is a significant difference between the percentage of people willing to asymmetry information before and after introducing a solution to the principal-agent problem. Wilcoxon's test was chosen because it is a nonparametric statistical criterion used to compare two related (paired) samples by the level of a quantitative trait measured in a continuous or ordinal scale, used to evaluate the differences between two series of measurements performed for the same set of subjects, but under different conditions or at different times.

The results and discussion section covers the analyzed outcomes. Relevance of why principals should be warned about the appearance of agency problems and application of the methods to solve this will be compared to other authors' opinions.

Further, a conclusion will be made based on the above.

2 Literature Review

2.1.1 The history of the appearance of the agency

The problem of the relationship between the principal and the agent has taken an important place in modern theories of the firm and the economics of the public sector. Due to the fact that the asymmetry of economic information and the effect generated by it, precisely called the “principal-agent” problem, exert their influence on all markets.

The relevance of this topic lies in the fact that with the development of organizations and its forms of ownership, the problem of management arises. There is a conflict of interests between the principal and the agent that presents multiple negative effects on firm’s performance and challenges to address. In its turn, negative effects are realized in impact on the activities of the organization, including in terms of such indicators as, for example, profitability and productivity.

In 1932, the work of A. Berle and C. Means "Modern corporation and private property" was published, in which the authors stated the fact of separation of the functions of managers from the functions of owners in companies with a dispersed structure of share capital. (Berle and Means, Gardiner 1932) In 1937 R. Coase in his revolutionary study "The Nature of the Firm" pointed out the existence of transaction costs, costs of drawing up and executing contracts, and also put forward the theory that any firm exists in order to minimize transaction costs, and the size of the firm depends on the possibilities of saving on these costs. (Coase 1937) These two classic works initiated further research on corporate governance and related agency costs.

The elimination of shareholders from corporate management is a logical consequence of the development of a corporate form of ownership. The emergence and development of the institution of attracting external capital by issuing shares was due to the second industrial revolution, the enlargement of production, geographic expansion, and the rapid growth of industry. The expansion of the scale of commercial enterprises required the attraction of significant amounts of financial capital, which could be achieved by pooling the financial resources of various economic entities. The growth in the number of financial capital providers and, as a consequence, the reduction in the participation of each of them separately led to the fact that individual monitoring of the quality of investment capital management has become economically impractical and expensive due to high transaction costs. In addition, the large number of differently qualified and geographically dispersed capital providers has increased the cost of the decision-making process. These prerequisites made it economically justified to delegate decision-making functions to professional managers responsible for the operational management of capital formed from the contributions of the company's participants. (Coase 1937; Hart and Moore 1990; Braun 2013)

The growth in the size of the firm entails an increase in the cost of the principal to control the actions of the increased number of agents. As Frederick Taylor, the founder of the scientific organization of labor, noted, you can hardly find a competent worker who does not spend a significant part of his time researching how slowly he can work without causing the employer to question his integrity. (Taylor 1909)

So, as the organization grows, the process of complication and specialization of the information circulating in it takes place, which is not accompanied by the creation of an information circulation system comparable in efficiency with the price mechanism. The decision-making process within an organization includes many stages, at each of which qualitatively new information emerges. Moreover, this qualitatively new information is possessed only by those members of the organization who are directly involved in its receipt and processing. (Braun 2013)

Another factor that determined the separation of management from financing was such a phenomenon inherent in a market economy as the division of labor and specialization. The specialization of managerial work implies at least a partial separation of management from financing, even if there is a single supplier of capital. In a situation with many sources of funding, the separation of the operational management function is inevitable. In other words, the complication of production processes leads to the necessity for a high level and dedicated management professionals.(Braun 2013; Williamson 1985)

As a result of the separation of the functions of the owner and the manager, asymmetric information arises: a situation in which the managers of the enterprise are better informed about the state of affairs in the company than the investors (capital suppliers). For the first time, scientists started talking about information asymmetry in the consumer market in the late 1960s, and the first work in this direction was the study of J. Akerlof. The American scientist suggested that in some types of market (the used car market was studied) the quality of a particular product is known only to the seller. Akerlof called these products "lemons": their quality cannot be understood without trying. (Aklerof 1970)

Members of the organization possessing unique information are not interested in its spreading in general and in its share to the principal in particular. Indeed, the asymmetry of information creates the preconditions for opportunistic behavior of agents, i.e. their desire to maximize their utility, despite the commitments made at signing the employment contract, is to be satisfied with some fixed level of utility. Having received, through the employment contract, guarantees of a fixed remuneration in the event of natural unforeseen circumstances, the agent himself seeks to create "artificial" contingencies that would allow him, by manipulating the principal, to redistribute the results of activities in his favor, for example, by misleading the principal about the actual the complexity of the task N, assigned to them for execution. (Agrawal and Knoeber 2013)

Thus, the separation of management from property and the need to delegate management functions to professional managers, information asymmetry and incomplete contracts give rise to an agency problem in a corporation.(Coase 1937; Miligrom and Roberts 1992)

The theory of the principal-agent, the problem of the principal-agent (English principal-agent problem) is a theoretical model of economics, created with the aim of understanding management situations between unequal actors with different degrees of information (asymmetry of information): the person giving the order (the principal) is usually at the highest hierarchical position and expects the solution of the task in their own interests; on the other hand, the person executing the order (agent: manager or economic agent) is in the lower hierarchical position, but owns more information than the principal and can use this information either in the interests of the principal or in his own interests. To solve this problem, various strategies have been proposed, such as trust relationships, shared information systems, or purposeful incentives. (Guriev 2015; Agrawal and Knoeber 2013)

American economists Michael Jensen and William Meckling developed the principal-agent theory in their 1976 paper, The Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structures, and focused on the management problems of large American firms. At the center of the thinking is the question of how to reduce the desire of employees to waste branded material in their own interests.(Jensen and Meckling 1976)

The principal-agent theory, which developed primarily in the field of economics, is based on the assumption that different participants are dependent on each other in commercial relations. The principal gives instructions and hopes for the correct execution by the agent. The key point is information asymmetry. Since it is possible that the agent has more information, he can use this information advantage for his own purposes. The theory assumes that a person is an opportunist and acts primarily out of selfishness. (Dembe and Boden 2000)

2.1.2 The problem itself in the agency problem

In order to understood the problem, few definitions have to be given.

The principal is the owner, that is, the shareholder of the company. He is directly interested in the results of the company's work - his current income depends on this - the size of the.

An agent is an actor, a manager of a company. On the one hand, he is also interested in the performance of the company that hired him. On the other hand, their achievement in some cases presupposes infringement of the interests of shareholders. In other words, the principal is the one who gives the assignment, and the agent is the one who carries out the assignment. (Sanford and Oliver 1992; Jensen and Meckling 1976)

Both an individual, a firm, an organization, and a government agency can act as a principal and an agent.

An agency relationship, in turn, is understood as a relationship between two participants, one of which (customer / principal) transfers its functions to the other (manager / agent). (Sanford and Oliver 1992)

The “principal - agent” problem is the threat of manipulation by the agent of the principal when executing the instructions of the principal. Misleading the principal becomes possible on the basis of asymmetric information and high costs of control over the agent's activities. In other words, this problem is a conflict of interests of the parties to an economic agreement: the person giving the order (the principal) and the executor (agent). The latter, using the asymmetry of information, can pursue its own benefit: for example, an employee makes a decision that strengthens his position, but is not optimal for the company; the broker makes in his own interests a deal that is not the most profitable from the investor's point of view.(Waterman and Meier 1998)

Thus, the functioning of an organization inevitably raises the question of the agent's opportunistic behavior based on the unique information available to him. Therefore, the problem of the principal and the agent is a special case of the situation of moral hazard: the principal takes on the role of an insurer against “natural” risks, and the agent in the role of hiding important information about the client (state of health, business, etc.) from him. a system of incentives that facilitate or, conversely, prevent the agent from disseminating reliable information. In the marketplace, competition stimulates the dissemination of reliable information. On the contrary, in the usual variant of the relationship between the principal and the agent, the asymmetry of information and the prospects of opportunism stimulate the manipulation of the agent of the principal.(Sappington 1991; Sanford and Oliver 1992)

The agency problem in corporate governance is a contradiction between the interests of managers and capital providers, which arises due to the lack of desire of managers to maximize returns on investment. According to theoretical premises, managers with bounded rationality seek to increase their own wealth at the expense of investors. This assumption about the behavior of managers is key and is called managerial opportunism. (Sappington 1991)

The challenge for capital providers is to build a system of interaction that would stimulate managers to manage their investments in the most efficient way in the best interests of investors. Another words, the theory of corporate governance studies the ways in which the providers of financial capital ensure the return on investment. (Jensen and Meckling 1976; Taylor 1909)

The issues of corporate relations in terms of the agency problem in economics are investigated within the framework of the agency theory, or the theory of agency relations (agency theory). An example of corporate relations is the relationship between a shareholder and a manager, a lender and a loan recipient, etc. (Sanford and Oliver 1992)

2.1.3 Information asymmetry

Asymmetric information in microeconomics is the uneven distribution of information between the parties of the contract. In a situation of asymmetric distribution of information, one of the parties knows more than the other about the subject of the contract, the conditions for its conclusion or behavior in the process of its execution. For example, an employee is better aware of his professional qualities than an employer; the borrower is better informed about his financial situation than the lender; the seller is better aware of the hidden properties of the product than the buyer; the contractor is better aware of the quality of work execution than the customer; the buyer is more aware of his preferences than the seller. (Dierkens 1991)

For the first time, Kenneth Arrow drew attention to the existence of information asymmetry in his 1963 article "Uncertainty and the economics of welfare in health care" in the American Economic Review. Information asymmetry should not be confused with incomplete information. The parties may not have all the necessary information, but at the same time be on an equal footing. Each side knows as much as the other. (Arrow 1963)
There are two main types of information asymmetry: hidden (unobservable) properties and hidden (unobservable) actions. (Dierkens 1991; Arrow 1963)

Hidden properties

Hidden properties - a type of information asymmetry, in which one of the parties does not have complete information about the subject of the contract. This type of asymmetry occurs even before the conclusion of the contract and affects its terms.

In 2001, Joseph Stiglitz, George Akerlof, and Michael Spence shared the Nobel Prize in Economics for their study of asymmetric information in capital markets. Notably, Akerlof showed how the financial sector in developing countries could be distorted when financial service providers, armed with college degrees, deep networking, and privileged information exploited retail market participants who were not nearly as informed or connected. (Aklerof 1970)

In a classic article by George Akerlof "The Market for Lemons: Quality Uncertainty and the Market Mechanism" analyzes the used car market (lemons in American slang). If the car has a bad quality, then the buyer values it less (the utility from his purchase is less) and is willing to pay less for it. The problem is that he does not know if a particular car is of high quality or has hidden defects. Therefore, the buyer has to consider the likelihood of meeting a "lemon". If this probability is greater than zero, then he will be willing to pay no more than the expected utility, which is calculated as the weighted average utility from buying a good and bad car. If the proportion of bad cars is too high, the expected utility may be less than the price the seller of the good car wants to receive. In this case, only bad cars remain on the market. Negative selection occurs, in which the market for good cars completely disappears.(Aklerof 1970)

Similar situations arise when a person is applying for a job or is applying to a bank for a loan. In the first case, the hidden properties are the professional qualities of the employee, and in the second, the financial position of the borrower.

Hidden actions

Hiddent actions (moral hazard) - a type of information asymmetry in which one of the parties does not have complete information about the actions of the other party to fulfill the obligations fixed in the contract. This type of asymmetry arises after the signing of the contract. However, the possibility of such actions can be taken into account by the parties at the stage of contract negotiation process.

An example of a hidden action is the policyholder's bad faith. After the signing of the insurance contract, he/she may begin to treat the property not as carefully as before, and this leads to an increase in the likelihood of an insured event. As a result, the insurance company is forced to increase insurance rates to cover losses. Then the insurance company can refuse to conclude a contract, since the probability of an insured event turns out to be much less than the tariff. As a result, self-selection takes place, when only unscrupulous policyholders remain on the market, and tariffs turn out to be very high. (Dierkens 1991; Lambert, Luez, and Verrecchia 2012)

Similar situations arise after applying for a job. In this case, the employee, taking advantage of the fact that the employer cannot track all his actions, does not dedicate the efforts to the respinsibilities specified in the contract. As a result, labor productivity turns out to be less than originally anticipated.

Information asymmetry can influence business in three core ways.

Adverse selection: When the customer and a seller have access to different information, they run into adverse selection (at the same time one piece of information is not necessarily more advantageous the other). Each participant of the transactions makes moves based on knowledge they assume they possess but the other does not. Such kind of information asymmetry can gradually affect markets of retail and labor. (Lambert, Luez, and Verrecchia 2012)

Moral hazard: As economists say, a moral hazard is a case when a company or a person takes on increased risk because it has the opportunity not to personally bear the full consequences of that risky transaction. For example, the fund manager for a pension fund may invest in much riskier stocks than they would usually do in their own personal portfolio. The reason to is: if the funds collapse, they will not lose money invested as the individuals (however they may get fired as a result). Another words, the fund manager has opportunity to operate with an inside information about their investments that other participants in the pension fund do not, and most probably the pensioners would not apply of such kind of financial risk if given the option. (Dierkens 1991)

Monopoly of knowledge: In the case of a monopoly of knowledge, only few individuals are benefited with the necessary information to understand a situation and make relevant decisions. Monopolies of knowledge are possible in government, where only selected officials with security clearances can be allowed for access to privileged intelligence. In some businesses, only top management receives full access to enterprise information provided by a third party, at the same time, lower-level employees may be asked to make key decisions with only limited information at their disposal. (Tsvetkov 2014)

2.1.4 Moral hazard

Moral hazard (English moral hazard, the risk of unfair behavior) - the idea that one of the parties, somehow protected from risk, will act differently than in the absence of such protection.('What Is a Moral Hazard?' Investopedia.) The risk that one of the parties to the transaction entered into an agreement with bad faith, provided deliberately false information about its assets, liabilities or creditworthiness, or has an incentive to accept atypical risks before entering into a contract in an attempt to make a profit; the probability that the very fact of the existence of a contract will change the behavior of one of (or all) the parties involved in it. (Guriev 2015; Hart and Moore 1990)

The conditions for the occurrence of moral hazard are (Guriev 2015; Halonen 1997):

- availability of a base for joint activities (cooperation / exchange);
- mismatch, divergence of interests;
- lack of the possibility of reliable control over compliance with the terms of the contract;
- incomplete responsibility for the actions / omissions performed.

Initially, the term "moral hazard" appeared in the literature on insurance issues, in which it arises when the insurance company is unable to observe whether or not the insured client (policyholder) is making any efforts to prevent possible losses. (Miligrom and Roberts 1992) Insurance companies are concerned that accident compensation payments may actually encourage risk taking, which increases insurance premiums. (Williamson 1985)

However, at present, the concept is used much more broadly: moral hazard can appear every time two parties enter into a mutual agreement. Each of the parties may have the opportunity to win through behavior that is contrary to the principles laid down in the agreement. For example, when a salesperson receives a flat rate without a commission, there is a danger that he will not sell with a required incentive because his salary remains the same regardless of the volume of sales. (Williamson 1985; Myerson and Satterthwaite 2010)

Moral risk does not only arise in the insurance or financial markets.

For example, the owner of an enterprise is usually unable to exercise full control over the activities of the employees of this enterprise. This arises due to information asymmetry, that is, the parties to the contract have different opportunities for obtaining information in the process of implementing the contract. After the owner of the firm has hired a manager, he may not be able to observe how much effort the manager is making in fulfilling his responsibilities. These problems are of great importance in situations where one individual hires another in order for the latter to perform certain actions as an agent of the former. The problem of such drafting of contracts is called the “principal-agent” problem. (Braun 2013)

2.2 Possibilities for solving the "principal - agent" problem

The problem of opportunistic (from the point of view of owners) behavior of managers is solved by controlling the activities of managers. There are several ways used in practice to control and stimulate such behavior of managers that would satisfy the interests of the owners. However, none of the methods is a panacea. The most commonly used methods are listed below.

Agents Competition

This method of solving the problem of the principal and the agent is based on the development of competition between agents. Competition is created by creating rewards for the best workers. In this case, the success of a manager not just measured by the amount of work done, but the performance of the largest amount of work of the best quality in comparison with other agents. When competition between agents is created, they themselves begin to follow after the actions of each other. The productivity of workers will also increase, because the incentive for agents will be the desire to receive an increased payment and recognition for their extra work. However, there are several limitations for applying this solution. Firstly, the desire to receive a reward will push agents to make the riskiest decisions, that will lead to a “reverse selection” of agents, as a result of which only those who acted the riskiest will remain. Secondly, with competition between the employees of the company, they will have an increased distrust of each other, as a result of which the agents will not be a well-coordinated team. It will gradually complicate the performance of tasks requiring joint efforts. Also, the application of this method will be limited by the degree of risk appetite of agents. (Myerson and Satterthwaite 2010; Waterman and Meier 1998)

Renumeration of an agent as a result of joint activities

Another way to solve the "principal - agent" problem is to create a contract of employment between the principal and the agent, and this contract will imply a system of remuneration for agents, but the remuneration will not be fixed, but depend on the results of the firm's activities. This method includes various options for the participation of agents in the company's profits. The most effective are the simplest options for the agent's participation in profits, assuming a linear dependence of the remuneration of employees on the firm's profits. There are also such options when the principal actually leases the property to the agent, and he himself receives a fixed rent and a share of the profits. However, this option is more complicated due to the varying degrees of risk appetite of the agents and the limited ability of the agent to rent property or to give his assed for a lease/lending. Accordingly, he will have to take a loan from the bank, which is also quite difficult due to the asymmetry of information and the risk arising between him and the creditor bank. (Sappington 1991; Jensen and Meckling 1976)

The Firm as a Coalition of Agents

In this case, "agents" are allowed to receive direct share of profits of the company's financial result. Moreover, managers are participating in control and decision-making functions. The functions of control and distribution of tasks (functions of the principal) are alternately performed by the participants of the organization (agents). An agent occupying a position at the intersection of information flows and, therefore, having access to this information, becomes a principal. Such a structure is called "wheel-like". In this case, the problem of stimulating the transmission of only reliable information is resolved, and relations between agents are strengthened. In practice, this can be observed in a self-governing firm, and most importantly, this structure allows investor to reduce control costs and gain benefits from cooperation. Working in cooperation is more effective, due to joint efforts. Employees produce more product than if they acted individually. O. Williamson sees the emergence of trusting relationships among agents as the main prerequisite for the emergence of an "associative atmosphere" within the firm. An associative atmosphere encourages the rejection of opportunism as a strategy for maximizing utility - "productivity increases due to a sense of responsibility for making an equitable contribution to a common cause." (Williamson 1985)

The benefit associated with the existence of an associative atmosphere lies not only in savings on control costs, but also in the manifestation of a new source of gain from cooperation: not only on the basis of division of labor, but also on the basis of "team work".

However it is important to consider the factors limiting the spread of the model of the firm as a coalition of agents: (Jensen and Meckling 1976)

- the degree of risk appetite of agents;
- the number of members of the organization. To be effective, rotation should be applied in groups of 5-10 people, united on federal principles into a single organization. The total number of members of the organization should not exceed 100 people (10 groups of 10 people);
- naturally inherited traditions of mutual support and mutual trust, common goals and interests by acting agents: it is needed to start rotating agents in the first phase of an organization's existence.

External audit

When a company is undergoing and external check, without involving current agents (company's managers) it can gradually decrease the risk of principal-agent problem, since a third, not biased party gets involved. It could be auditors checking the representativity and quality of financial statements of the enterprise, or banks analyzing financial health of the company and other, non-financial risks for the business. (Myerson and Satterthwaite 2010; Braun 2013)

Influence of internal structure

Each firm has its own structure, which can also define various options for solving the "principal-agent" problem. There are four main models of intra-firm structures: unitary (Ystructure), holding (X-structure), multi-division (M-structure) and mixed (C-structure). (Blanchard, Caigne, and Mathieu 2010)

- Unitary structure

The unitary structure, as the name itself implies, supposes the maximum centralization of power relations. All major decisions are made by the principal, who also exercises control. The right to control the activities of agents is delegated by a functional (hierarchical) basis to the heads of functional departments: sales department, chief engineer, chief accountant, etc. Thus, the heads of functional units are both agents - in relation to the head office, and principals - in relation to the direct executors of tasks. In the case of unitary organization, the only option for solving the problem of the principal and the agent is to strengthen control based on the development of new control methods, associated with lower costs for implementation.(Sappington 1991; Braun 2013)

- Holding structure

The holding structure is at the other extreme - maximum decentralization of the decision-making process and control over the actions of agents. In fact, the principal retains only the authority to control the financial flows and financial performance of the agents. Agents are autonomous in making all decisions, except for the distribution of profits. In other words, the principal controls the activities of agents not directly, but through the organization of a competition among agents, in which the winner is determined by the criterion of financial results. O. Williamson gives the following definition to the holding: "A firm with many divisions, in which the head office is not engaged in strategic control of their activities." A holding structure does not exclude direct competition between divisions of the same firm, because competition is one of the methods of indirect control. Note that at the level of the holding's divisions, one can also find a unitary type of relationship between the principal (the head of the division, who is at the same time the agent of the head office) and the agent. (Williamson 1985; Waterman and Meier 1998)

- Multi-divisional structure

In the 1920s Pierre Dupont and Alfred Sloan (heads of Du Pont and General Motors, respectively) presented an idea of a multi-divisional structure of an enterprise. This structure "implies the creation of semi-autonomous production units, operating on the basis of the principle of self-sufficiency and formed depending on the type of product, brand or geographic location." A multi-divisional structure is a kind of synthesis of a unitary organization and a holding. Indeed, it retains the principle of centralizing strategic decision-making and at the same time decentralized operational control and management. Similarly, the principle of financial self-sufficiency of divisions (agents) allows them to participate in the results of their activities, but the head office (principal) at the same time retains the right to redistribute part of the profits of divisions in accordance with the goals and objectives of the firm as a whole. Examples of enterprises that in practice use the principle of a multi-divisional structure are conglomerates and multinational companies.(Blanchard, Caigne, and Mathieu 2010; Freeland 1996)

- Mixed structure

Finally, a mixed structure arises in the case when one of the divisions is fully controlled by the head office, as in a unitary enterprise, the second division depends on the main office only financially, as in a holding company, and the third division has operational independence and operates on the principles of self-sufficiency, as in multi-divisional structure. (Braun 2013)

3 Practical Part

3.1 Enron study case

Enron is one of the most notable examples of the agency problem - the company's employees used illegal financial schemes and provided irrelevant information, while the board of directors did not fulfill its functions to prevent this. As a result, the company declared bankruptcy after the scandal, which caused a lot of financial losses in various sectors. By analyzing the Enron case, I want to show what kind of company collapse, an agency problem, and information asymmetry can lead to. Enron case is a bright example, demonstrating the agency problem: how information asymmetry and moral hazards can potentially lead not just to financial losses but to a full-scale company collapse. (McLean 2013)

Enron resulted from an unwelcome alliance of two prominent American gas producers. It all started with Inter North, which was going through hard times and was on the verge of a hostile takeover. Therefore, in a panic, the management decided to make the company so over-credited that its takeover would be unprofitable. However, Inter North decides to merge with Kenneth Ley's Houston Natural Gas. The gas workers were in a terrible hurry, so they overpaid several million dollars. In order to close the deal, they even managed to get into its corporate pension fund. They were forced to make Lei Kenneth the head of the combined company, giving him such a hefty salary that he was in America's top 5 most "expensive" managers a year later. However, with gas prices steadily falling, the future of the brand-new Enron still looked quite precarious. Lay used the better capitalization and greater diversification of the former Inter North to promote the new Enron. The company is starting to cut staff and is selling various assets to reduce its enormous debt.(William 2002)

The merged company was estimated at $3.5 billion, accounting for almost 5 billion debts incurred during its creation. Nevertheless, at the same time, the US Congress significantly liberalized the natural gas market, actually allowing companies to set prices themselves. Enron turned to its advantage the undesirable incentives arising from the deregulation of banking activities. The gas price tag was not stable, and the company made money on market manipulation and price collusion. If earlier gas was supplied at a fixed price from the producer to utilities, which sold to its end consumers, then now the US government decided to allow a free market, which means that intermediaries could negotiate with both suppliers and utilities within the usual market activity framework.(William 2002; Siskos 2014)

Two years later, a significant incident occurred, indicating the principal-agent problem. It turned out that two top Enron Oil, financial director Thomas Mastroeni and executive director Louis Borget, used fraudulent schemes. Their behavior was opportunistic, meaning the desire of Mastroeni and Borget-agents to satisfy individual interests at the organization's expense to the detriment of the interests of the owners-principals. While the profit was going, it did not bother anyone, but sudden losses of $140 million due to incorrect prediction of market movements revealed the situation. It became known that they even transferred money from a corporate account to a personal one. The facts of small accounting tricks were also revealed, such as the conclusion of double contracts for buying and selling simultaneously, which allowed making revenue more than it actually was and thus making additional credit resources. That is why Lay Kenneth supported and encouraged Borge's working method – he continued to bring millions.(Sendyona 2020) When operations were discovered, and Enron was close to bankruptcy because of it, Baguette and Mastroieni were immediately fired. Enron filed a civil lawsuit against the two men and a host of other companies and individuals. Both men were found guilty. Just as it would have happened in 2001, Kenneth Lay claimed that agents deceived him and did not know about the fraud.

In 1990 Enron decided to enter foreign gas supply markets. For this, Jeff Skilling, a native of McKinsey & Company, who became a top manager, and Andrew Fastow, who had previously made a career in the banking sector and became a financial director, were hired.

It all started with the fact that they were the first among the representatives of non-financial companies to use the MTM (Mark-to-market accounting) scheme - accounting for assets, not at the cost of purchase or construction but the current market value. The value at the market price made it possible to frequently and unpredictably change the results of balance sheets, calculating the value of an asset based on an estimate of hypothetical profitability, which made it possible for specific manipulations, achieving estimates that did not correspond to reality.(Siskos 2014; Mahmoud 2021; Penman 2001) The case was quite risky since no one in the world of energy had the opportunity to accurately predict how much gas would cost, especially if it was about a long time, which gave room for manipulations, obtaining estimates that were not true. At first, it was not significant, but such assets began to accumulate on the balance sheet over time.

As soon as the new method was adopted, Enron and its auditor, Arthur Andersen, began to conduct important lobbying work to obtain permission to use this type of accounting. The Securities and Exchange Commission (SEC) of the United States approved the method proposed by Enron for trading futures contracts for natural gas, which marked the beginning of its central moral hazard act, which allowed it to be opaque in its accounting information. As a result, Enron could manipulate the company's actual value with the regulatory body's approval from that moment.(McLean 2013)

3.1.1 Accounting frauds

Firstly, the fall in the value of assets was constantly hidden. Usually, either subsidiaries or special design companies (SPVs) were used. Money was transferred from these companies from the parent company; then, the asset was sold to these companies for the transferred money. After that, Enron reduced its stake to less than 50%, making it perfectly legal not to indicate this small company owning a cheaper asset (i.e., having a negative balance sheet) in its reporting.(Shields 2018)

Secondly, this approach allowed Enron to change income accounting from its core business. If previously the income from a long-term contract was taken into account as they were received (quarterly), then now they pass immediately after its signing, for the entire term of the contract in a single amount. Further changes in the market price of gas relative to the one signed in the contract should have been reflected in additional profits and losses — and this was done. However, the over-planned profits remained in Enron, and the losses disappeared in off-balance-sheet companies.(Sendyona 2020)

Enron's schemes solved the contradiction between electricity suppliers and its consumers. Consumers are interested in long-term contracts at fixed prices. However, on the other hand, suppliers agree only on short-term supplies and demand to change electricity prices monthly, considering market conditions. At the same time, suppliers are constantly experiencing a shortage of current funds. So, Enron decided to become an intermediary and, on the one hand, supply electricity to consumers at fixed prices. On the other — to provide financing to energy suppliers who will be happy to pay Enron after the fact with their products at favorable prices.(McLean 2013)

How did Enron find the money to finance energy suppliers? They carried out securitization. A company that obtains financing through securitization (called originator) accumulates assets that will further provide cash receipts into one extensive portfolio and then sells this portfolio to a third party. This condition is called remote bankruptcy transfer. Indeed, after the sale of the target company's assets, their no longer depend on the creator: even if he completely goes bankrupt, the withdrawn assets will remain intact. From this moment on, the leading actor, the holder of the asset portfolio, is already this third person, which is called a Special Purpose Entity (SPE), the target company. (Shields 2018; Siskos 2014) The target company is explicitly created for a specific project. Since the target company's assets are not given for free, they must be paid for by the creator. However, SPE has no money. Therefore, it prepares the issue of its securities. Usually, these are debentures of various types of bonds or promissory notes secured by upcoming cash receipts from assets purchased from the creator. The most critical stage of securitization is obtaining a credit rating for new securities. If it does not have a high rating, then no one will buy the debt obligations of the target company, and the whole scheme will collapse before it reaches the goal. SPE debt obligations enter the securities market when a decent rating is obtained acquired by ordinary investors. The final thing is that the target company transfers the proceeds from the sale of securities to the creator and pays for the sold assets. The creator did not lose control over the assets from the very beginning. Although he sold them to a fake target company, he immediately received a subcontract for asset management from this target company. (McLean 2013; William 2002)

What do investors who buy the debt obligations of the target company find in securitization? Moreover, why does the creator company need all this? With investors, it is simple: firstly, they buy bonds because they know precisely what assets these securities are backed by. After all his debts, problems, third-party obligations, and other things, the creator was taken out of brackets from the beginning when he sold the target company's assets! Furthermore, the SPE has nothing but transparent assets. The most important thing is that the bonds of the target company have received a good credit rating, so it is safe to invest money in such a transparent scheme. Another essential condition is that the debt obligations of target companies are drawn up according to all the rules of fashionable structured financing. This means that securities are divided into categories based on the principle: "The higher the risk, the higher the yield." As a result, securitized certificates of a senior, mezzanine, junior notes, and bonds with fixed and floating interest rates are issued. (Mahmoud 2021) Thus, an investor can choose the security that best suits him in temperament and risk tolerance. The securitization theory described above does not yet directly relate to Enron's activities since it does not consider the main circumstance. This is how things were with electricity: suppliers were ready to release it to Enron for further sale at fixed prices to consumers only after the company provided financing to suppliers. Furthermore, to receive financing (through SPE), Enron first needs to have electricity on hand. It turns out a vicious circle.(Sendyona 2020)

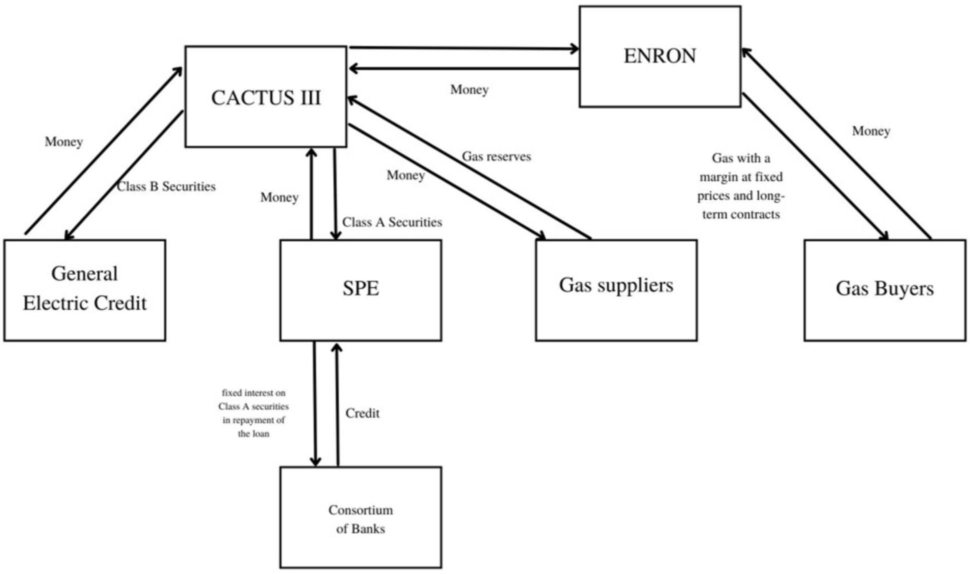
The first "Cactus I" scheme for securitization of assets was committed in 1991 and was very unsuccessful. Enron has collected a pool of $900 million. The United States, which was promised to gas producers, then sold the securities issued for this asset to a group of prominent investors, including General Electric. Under the terms of the deal, investors pledged to sell the gas back subsequently. The scheme was risky because a lot was based on mutual trust — gas suppliers would not let the asset go into debt, and the accompanying documentation was complicated and required expenses. However, the debt to suppliers was withdrawn from the accounting department.(McLean 2013; Mahmoud 2021)

The previous scheme had one significant drawback: attracting investors was from ordinary market participants' side. Therefore, it was necessary to pass a rating — who would invest money in an unknown structure? Moreover, it was not easy to get a rating without having real assets based only on agreements. So then decided to go the second way — to attract large investment bankers, instead of ordinary investors, securing a reputation instead of a rating. While having a reputation, getting a rating was a matter of time.(Healy and Palepu 2003; Partnoy 2002)

The second transaction under the Cactus II scheme was carried out in 1993. Then the California Public Employees' Retirement System decided to invest $250 million. The United States in unbalanced partner investments. Warren Buffett also invested money in the company, making it possible for Enron to advertise such a partnership actively: "Look, the most serious investors in the world trust us!" Now the Enron company with such a severe reputation could create any schemes.(Mahmoud 2021)

Andrew Fastov found a way out of this circle — with the help of the "Cactus III" scheme, which ingeniously involved as many as two SPEs. The first target company — the same Cactus III - issued two debt obligations: class A with fixed interest and class B with floating interest. The second target company received a loan from a consortium of banks and used this money to buy Cactus III bonds. Cactus III financed gas producers and received gas from them with the proceeds. Enron bought gas from Cactus III and sold it to end users at fixed prices. Cactus III used the money from the sale of gas to Enron to repay its obligations to the second target company (Class A securities) and General Electric Credit (Class B). This whole scheme allowed Enron to completely withdraw all debt obligations for financing gas producers from the balance sheet. The fact that brilliant indicators existed only on paper, that is, at the level of accounting statements, did not bother anyone since rating agencies looked only at Enron's reports.(Mahmoud 2021; Sendyona 2020)

The author of the scheme - Andrew Fastow - earned money for Enron and generously paid himself for it. In 1999, he founded the LJM Foundation, which participated in the Enron scheme as an SPV. The fact that Fastow headed LJM (the name consists of the first letters of the names of his wife and children), holding the position of CFO at Enron, is an apparent conflict of interest. Fastow negotiated with himself and made tens of millions of dollars.(Salter 2008)



Picture 1. Enron schemes

Source McLean, B. 2013. *The Smartest Guys in the Room: The Amazing Rise and Scandalous Fall of Enron*. Penguin Publishing Group.

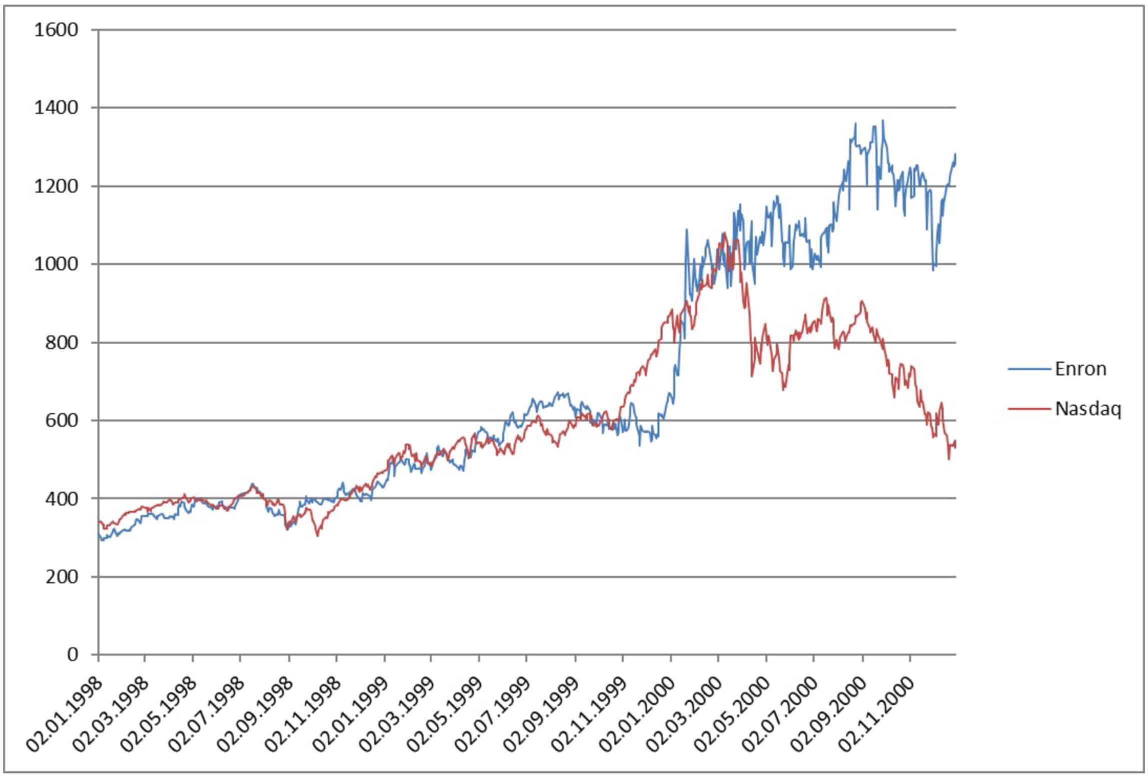
The vital fact was that Enron launched business abroad. As a result, many projects and small companies collected losses. In addition, the industry field of activity also expanded:

Enron also began to act as an investment firm, even as a hedge fund, and working with concealment of losses allowed maintaining an investment rating at a decent level.
Enron had a considerable number of foreign assets — power plants and pipelines. The results of many of them often turned out to be worse than the company expected in the balance sheet. For example, such a project was constructing a power plant in India. The corporation spent $1 billion on it, but it turned out that residents could not afford electricity from Enron. The project was never completed.(Partnoy 2002; Seeger and Ulmer 2003)
In 1997, Enron created a subsidiary company Whitewing to buy and sell inefficient assets. Her financial condition should have been reflected in Enron's accounts. In 1999, the corporation sold just over half of Whitewing to no longer be counted in the Enron report.
The scheme worked like this. For example, Enron built a small power plant for $8 million and expected the project to cost $10 million. The calculations allowed us to make a profit of $2 million in the report. After the construction was completed, it turned out that the market value of the power plant was only $7 million. Enron would have to cancel a profit of $2 million and register a $1 million loss in the documents. Instead, the corporation sold the Whitewing plant for $10 million and confirmed a planned profit of $2 million. (Seeger and Ulmer 2003; Siskos 2014)

The agent-principal problem reinforced this situation. Rebecca Mark, who was the head of Enron International, and Jeff Skilling, were the stars of Enron. A fierce rivalry arose between them, as they both held senior positions in different company sectors and sought to advance to the highest level of Enron management. Skilling believed that the company did not need assets and that its future was connected with the promotion and development of the business sector. This vision was utterly contrary to the opinion of Rebecca Mark, as she based the company's growth solely on assets and launched a large-scale campaign to expand operations in other countries. (Sendyona 2020; McLean 2013)
At the same time, Skilling worked to strengthen his power and lower the Mark within the company. He arranged for ECT to finance other company divisions, including Enron International. As a result, Skilling blocked Mark's funding. This strategy allowed Skilling to slow down the development of Enron International and give it a reason to criticize the high costs associated with projects of this type. His behavior was opportunistic, and he, as an agent, did not act in the principal's interests.(Johnson 2003; Jensen and Meckling 1976)

3.1.2 Evidences of problems

With such an information asymmetry, the market considered Enron's management progressive and its business model advanced and innovative. As a result, investor demand for its stock skyrocketed, causing its stock price to rise from almost seven dollars per share in 1990 to more than eighty-three dollars per share a decade later. So, an increase in the prices of Enron shares occurred from 1997 to 2000. They surpassed even the Nasdaq Composite index that was falling. The Nasdaq Composite is an index weighted by market capitalization, simply representing the value of all listed stocks. (Penman 2001)Therefore, the index graph should show how the market should behave, including companies in the same industry as Enron, but we can see the gap between NASDAQ and Enron. (Lambert, Luez, and Verrecchia 2012; Mahmoud 2021)



Graph 1. NASDAQ Composite index and Enron stock performance

(Bloomberg, 2022)

Source https://www.bloomberg.com

The most significant warning signs in Enron's financial statements were signs of poor profit quality, as evidenced by several key cash flow indicators. One of the most common indicators of profit quality is the so-called accrual ratio and is it can be found by subtracting net profit and cash flow from operations ("CFO"). Accruals are positive when the net profit is greater than the CFO's. Accruals are positive when the net profit is greater than the CFO's.(Penman 2001) When this happens, it usually indicates problems with low-quality earnings. However, Enron was aware of the importance of the CFO to analysts and bond rating agencies. As a result, Enron used all necessary means to ensure that the CFO reporting for the year always exceeded net income. However, if we consider the quarterly financial data of the company, this is destroyed. As a result, Enron left the data of financial cash flow in the fourth quarter.(Shields 2018)

Annual Data				
	1998	1999	2000	
Net Income	703	893	979	
Cash flow from operations	1640	1228	4779	
Quarterly Data for year 2000				
	Q1	Q2	Q3	Q4
Net Income	338	289	292	60
Cumulative net income	338	627	919	979
Cash flow from operations	457	90	647	4679
Cumulative cash flow	457	547	100	4779

Table 1. Enron's Net Income and Cash Flow from Operations (Dollars in millions)
Source Enron Annual Report 2000

Another cash flow indicator, free cash flow, also signaled profit quality and valuation issues. However, *Free cash flow* is the difference between cash flow from operations and investments. When free cash flow from operating-if the activity is negative, the company will have to compensate for the difference through debt or equity financing. In the long term, the company's valuation is determined by free cash flows. (Penman 2001)No firm can remain viable for a long time if its free cash flow from operations is consistently negative. Enron reported significant negative free cash flows. The positive cash flow from operations reported by Enron in 2000 helped to underestimate the real reduction in free cash flows during that year. Cash flow from operations in 2000 included deposits of $5.5 billion received by Enron from its electricity customers in California, of which $2.35 billion Enron had to repay— removing this amount from the positive free cash flow led to a negative result.(Shields 2018; Madrick 2002)

	1997	1998	1999	2000
Cash Flow from Operations	211	1640	1228	4779
Less: Cash flow from investments				
(Cash investments in operations)	2146	3965	3507	4264
=Free Cash Flow from Operating	1935	2325	2279	515

Table 2. Free Cash Flow, 1997-2000 (Dollars in millions)

Source Enron Annual Report 2000

Profitability indicators

Enron's net profit grew from $584 million in 1996 to $979 million in 2000, an average of 16.9% per year, accounting for 67.6% profit growth over five years. Maintaining high-profit growth contributed to Enron's perception of the "high-performance" companies elite.(Seeger and Ulmer 2003) However, as shown from table 3, Enron's reported profit was microscopic to revenue. Net profit grew at a very different pace than revenue, which grew by a phenomenal 164.6% per year over the same five-year period. As a result, there was a steady decline in the net profit rate from 4.4% in 1996 to 1% in 2001. Similarly, Enron's gross profit margin (gross profit as a percentage of revenue) declined from 21.2% in 1996 to 13.3% in 1999 and plummeted to 6.2% the following year as profits more than doubled. Enron's rapidly declining profitability was not questioned by Wall Street analysts as long as reported net income continued to grow by 15% plus per year - no matter how small this profit was as a percentage of revenue. (Hutton 2003)

	1996	1997	1998	1999	2000
Revenues	13289	20273	31260	40112	100789
Gross profit	2811	2962	4879	5351	6272
Gross profit % of Revenues	21,2%	14,6%	15,6%	13,3%	6,2%
Net Income	584	105	703	893	979
Net income as % of Revenues	4,4%	0,5%	2,2%	2,2%	1,0%

Table 3. Declining Gross Profit Margin and Net Profit Margin

Source Enron Annual Report 2000

3.1.3 Auditors and banks

One of America's top audit firms was involved in Enron's machinations and helped create information asymmetry and moral hazard. Arthur Andersen was Enron's auditor, Enron was the largest client of their Houston office. Artur Andersen received more than $20 million a year for audit alone and more than $20 million a year for consulting.(McLean 2013; Nelson, Elliott, and Tarpley 2000)

When negotiations of Arthur Andersen were published, they discussed what they should write in the audit report to make it the way Enron wants, or they will lose such a big client – including as a client of our consulting division. This was done intentionally, and these were not mistakes; they distorted what was written in the auditor's report. Then their reputation was destroyed entirely. Auditor companies should not create moral hazard situations; they should prevent it.(McLean 2013)

During the trial, the manager of Arthur Andersen confirmed that Arthur Andersen's auditors turned a blind eye to the illegal actions of Enron management. The last straw was the revelation that the auditors hastily destroyed thousands of documents and electronic media that kept secrets of collusion between Enron managers and representatives of Arthur Andersen.

Arthur Andersen's main clients refused to work with them because actions like that were not in the principal's interests. In a couple of months, 785 out of 2,300 firms refused its services, including such world-famous corporations as United Airlines, Merck&Co.,

Aquila Inc., Costco Cos. and UnitedHealth Group. The firm was forced to declare that it stopped auditing companies whose shares are listed on stock exchanges.(Nelson, Elliott, and Tarpley 2000)

Banks that cooperated with Enron also distorted information, and the bank's risk management compliance was undermined. Enron created off-balance-sheet partnerships and provided them with its shares as collateral for obtaining a bank loan. Banks serving Enron were willing to participate in fraudulent transactions between retail and investment banking. Enron could provide guarantees if the bank wanted it; if additional funds were required to purchase shares at an inflated exchange rate, the corporation could provide the loan itself. It turned out that the management of Enron sold shares of the corporation to itself to replenish the profit and loss account. However, from the point of view of epy principals, it was a moral hazard. If the stock price was high, all the winnings went to the top management of Enron and their friends. If the exchange rate fell— which it did-the corporation and its shareholders were responsible for paying off the banks' debts.(Mahmoud 2021; Siskos 2014)
Citigroup and JP Morgan Chase, two of the most extensive banking conglomerates, have recently emerged due to the merger of commercial and investment banks to provide large corporate clients with a wide range of banking services using a "one-stop-shop" system. The idea was that companies would provide a kind of lucrative investment mandates for consultations on mergers and collection of the issuance of shares and bonds to the same banks that provide loans. Before declaring bankruptcy, Enron was a kind of pilot project to justify the creation of investment banks with large balance sheets. Due to their willingness to issue huge loans, Enron, Citigroup, and JPMorgan Chase defeated competitors in the fight for the right to advise on restructuring and refinancing.(Salter 2008; Sendyona 2020)
Only one of seventeen investment analysts, John Olson, did not advise Enron stocks was fired. Soon after, Fastow rewarded the bank with two investment banking jobs worth 50 million dollars for this. (Siskos 2014; Partnoy 2002)

3.1.4 Information asymmetry and moral hazard in Enron

Skilling established the Performance Evaluation Committee (PRC), which became known as the most challenging employee evaluation system. Committee members met twice a year and assessed people in their area on ten different criteria on a scale from one to five. They called this process a "360-degree view." The system's setup provided huge compensation to retain and reward their most valuable employees.(Johnson 2003)

Those recognized as the best in their division received incentives two-thirds higher than those who got into the next thirty percent. Finally, those who scored 5 points received no incentives or additional stock options and were typically relocated or laid off within the next six months. The Skilling division was known for replacing up to 15% of its staff annually.

Although the evaluation was to increase the value of respect, honesty, communication, and excellence within the company, agents believed that the only accurate indicator was the amount of profit they could get. Everyone was immediately motivated and obsessed with "doing business" and maximizing those bonuses to get top marks.(McLean 2013)

Agents constantly sought to cope with a large volume of transactions, often without taking into account the quality of cash flows or real benefits, with the sole purpose of getting a high rating for their work. As a result, the fierce internal competition began, and an atmosphere of paranoia blossomed.

As a result, that way of solving the agency problem did not work but only worsened the situation. Agents could undermine each other by sending negative comments, or, conversely, they could enter into agreements with other colleagues to leave good reviews. Managers also "traded" with each other because if one wanted to cut more than 15% of their employees, and the other wanted to keep most of them, they could make a deal. Managers quickly started using PRC as a tool to encourage friends, and all employees were forced to bring in a top manager as a defender. Others, such as Andrew Fastow, used the review system to take revenge on people who expressed disagreement or criticism. Through the PRC, Andy could prevent granting benefits to certain people because all decisions had to be made unanimously.(McLean 2013; Seeger and Ulmer 2003; Sanford and Oliver 1992)

Agency relations may be burdened with problems caused by the following circumstances:

1) the agent may not be effective enough;

2) the principal may inefficiently set a task for the agent and provide resources;

3) an agent can become a principal by hiring his agent to solve the tasks assigned to him by his principal;

4) the agent has its own goals;
5) the goals of the agent may conflict with the goals of the principal;
6) the agent may be tempted to use the principal's resources to achieve their goals rather than the principal's goals (opportunistic behavior).(Waterman and Meier 1998)

The notion that a firm's behavior is wholly subordinated to the interests of its owners is a substantial simplification. Labor is a particular resource in that it cannot be separated from the seller-employee, and each employee is the bearer of his interests. Control by the administration over the activities of employees requires costs and may not always be complete. The less standard the work, the more difficult it is to control its execution.(Sappington 1991)

Enron is run not by owners (shareholders) but by hired managers. The motives of his activity are different: maintaining and improving the status expanding the scope of activities. If the owners are equally interested in both revenue and costs - positive and negative components of profit, then the manager is often interested in increasing revenue and indifferent to costs. However, the ability of shareholders to control the administration's activities is limited.(Seeger and Ulmer 2003)

The difference between situations with covert actions and situations with hidden characteristics follows. First, it is necessary to establish economic relationships to transfer information from an informed party to an uninformed one in covert actions. In this kind of information transmission, the meaning of signaling consists. In the second case, the problem is not the transmission of information but incentives: the uninformed party wants to ensure that the informed party has the necessary incentives to perform the required actions. However, since these actions are not directly observable, it is impossible to draw up such a contract that would directly provide the appropriate motivation of the informed party.(Jensen and Meckling 1976) Therefore, this party may well carry out incorrect actions that cause moral damage to the uninformed party.

One of the main problems was that Enron's directors worked based on fake reports. They did not know everything about the company. This situation tells us that directors know anything about the company if they cannot rely on audited financial statements. All of the information about the company get from the management, so the work of the board of directors is impossible if there is no confidence in the audited statements. Even if a top

manager distorts information about the company in front of the principal, he still has to share it with subordinates. Even if a subordinate made a lousy deal and had a bad quarter or year, the agent cannot remove his bonus because external investors know that all departments have worked well.(Johnson 2003; Healy and Palepu 2003)
Investors benefit from the corporation's success and expect executives to pursue the interests of shareholders. However, company agents do not necessarily have the same interests as shareholders. Although the company's success may drive them, the motivation is usually different, namely their income. Therefore, the more successful a company is, the more chances it will earn. (Agrawal and Knoeber 2013)

Accordingly, a moral hazard arises if the manager knows that the 100 million that the subordinate allegedly earned is a postscript inside the company, but he lost a hundred million. An agent who is not paid a bonus automatically becomes a potential informant. Therefore, it is necessary to build a system where everyone is always paid bonuses, regardless of whether they work well. It turns out that those who work well get a bonus, but those who work poorly also get a bonus. This is the problem of attributions; when there are attributions, incentives for good work are destroyed because people will receive bonuses. Fastow and Skilling knew that there should be no dissatisfied people who know what is happening inside the company. When the agents asked questions, they offered to transfer to another division or increase the bonus.(Dembe and Boden 2000; Madrick 2002)

3.1.5 Outcomes of the fall of Enron

Many investors suffered huge losses after the collapse of Enron, lost money from shares, and the company's employees' pension savings because they were invested in shares. In addition, this situation affected the presidential administration, as Enron Corporation funded the headquarters.(Sendyona 2020) The collapse of the company and the financial chaos suffered by the principals and agents led to a series of changes in the rules and legislation.
What actions were taken after the scandal to prevent the agency's problems, information asymmetry, and moral hazard:

Even at the trial, Skilling and Lay claimed that they did not know what was going on in the company and about all the frauds. In order to avoid such situations, a law was adopted, and now the General and Financial Director must certify financial statements, confirming that they meet the requirements.(Seeger and Ulmer 2003)

After the scandal with Arthur Andersen, an organization was created that regulates and controls other audit organizations (PCAOB). It has also become prohibited to consult with their clients simultaneously as the audit. In addition, it has become impossible to work with one client for more than five years.(McLean 2013)

These measures helped principals control agents and auditors more and identify opportunities for misrepresentation of information.

3.1.6 The possibilities for solving Enron problem

Having analyzed Enron's situation and based on the methods of solving the principal-agent problem previously described, prevention of information asymmetry and moral hazard is possible if the following steps are applied in the company:

Firstly, the correct work of Enron's board of directors was impossible because there was no confidence in the audited reports. The Audit Committee should include an independent financial expert who has experience in corporate financial management to protect the interests of investors. So, the principals would minimize the chances of information asymmetry, and the board of directors would work on actual data.(Sanford and Oliver 1992)

Secondly, as banks helped Enron's agents implement financial schemes, the principals should have hired different banks as another controlling body. The quality of the bank's risk manager's work should be high to exclude moral hazard. Many of Enron's financial schemes would not have taken place by introducing this rule.(Penman 2001; Berle and Means, Gardiner 1932)

Enron's aggressive approach to its employees and its establishment of a Performance Evaluation Committee worsened the principal-agent problem. So, it is necessary to focus on ethical codes of conduct. Agents should report violations to an independent party without fear of consequences. Leading a different policy in Enron, such a collapse would not have occurred, and the agents themselves would not have suffered financial losses if they were not afraid to report illegal activities.(Johnson 2003; Braun 2013)

As well as Enron agents used complex accounting schemes and information asymmetry appeared, it is required to change accounting standards and includes a written discussion of all off-balance sheet transactions in financial statements. Enron would minimize moral hazard using this practice, and the principals would have a more complete and understandable vision.(Hutton 2003; McLean 2013)

Enron agents did not have the same interests as shareholders. The information asymmetry, moral hazard, and hidden actions can be avoided by creating a coalition of agents. The principal becomes "temporarily first among equals." Power relations and the delegation of control over their actions by agents do not disappear; it is just that the functions of control and distribution of tasks are performed alternately by all participants of the organization. The principal becomes an agent who temporarily occupies a position at the intersection of information flows and can accumulate all information from the structure. The rotation of agents in the position of the principal solves the problem of incentives to transmit only reliable information. Most importantly, it creates prerequisites for trusting relationships between agents and achieving cooperation with their help. By implementing this method, Enron would increase the chances of solving the agency problem.(Berle and Means, Gardiner 1932)

3.1.7 Conclusion from the Enron study case

To conclude, Enron is an obvious example of how the agency problem is a crucial part of the company's fate, agents, principals, and many associated mechanisms. Potentials expected that the agents' task was to maximize profits. However, Enron agents sought to use the information asymmetry between them and the principals to their advantage, which led to damage to the principal's interests. Solutions to this problem can be identified as follows: checks from independent financial experts, supervision from the risk management of banks, focusing on ethical aspects, written discussion of all financial processes, and the creation of a coalition of agents.(Siskos 2014; Shields 2018)

3.2 Branding agency case

In order to show why principals should be aware of the work of agents, the example of the "Bakers" Branding Agency will be provided. The form of the agency's activity is a project. The agency is gaining experience by implementing projects: the so-called cases are implemented projects in a particular industry. The presence of cases allows the agency to demonstrate its competence in promoting companies in any industry and attract other customers.

The involvement of the agency in the company's activities is a justified and helpful step, the advantages of which are: new ideas and a fresh look at the problem, a professional approach to narrow problems that are difficult or ineffective to solve inside the PR department, the appearance of people who are not burdened with a subjective understanding of the situation, stereotypes, connections with other employees.

Agency, capable of simultaneously meeting the everyday needs of commercial structures in all information and communication services: public relations, marketing, PR, corporate image advertising, and promotions. The benefits for the client: the number of contractors is reduced, the number of controlled structures has decreased, document flow and reporting are simplified, general management and control over budget spending are easier.(Hammond 2017)

A branding agency is an exciting formation from the point of view that its field of activity is not limited from a formal point of view. This is because the specialization of a branding agency is the creation of a brand.(O'Brien 2007) However, a brand is not only external attributes - the name, logo, corporate identity design, packaging, and advertising materials. The brand is, first of all, the memory and emotions of consumers that arise in the minds of representatives of the target audience when mentioning the name of contacts with individual visual elements of the brand. Therefore, a branding agency assuming the mission of brand development takes responsibility for forming the very connection between the brand and consumers, which will allow a solid brand to be formed in the future.(O'Brien 2007)

The future brand begins with understanding what the client wants to bring to the world, what is his product and who will need this product, needed to determine who is the target audience of the brand, as well as understand what distinguishes the product from competitors in the segment of the selected market. The agency can find answers to these questions by conducting various studies.(Salenbacher 2013)

To develop a brand, it is necessary to carry out an analysis, audit, and marketing research. However, first, we need to understand whether the implementation of the idea is relevant to the state of the client's brand at the moment. After analyzing the marketing analysis of the market situation, it will make it possible to understand how new the idea is and whether there are competitors and make a strategy to enter the market. Branding uses designs, logos, goal setting, marketing messages to form a business. Therefore, it is necessary to create a unique representation on all touchpoints. If all the points are met, it will help to win and retain customers.(Hammond 2017)

Brand creation is a universal algorithm of actions in almost any field. The difference is only in the details and semantic nuances, but the sequence is the same:

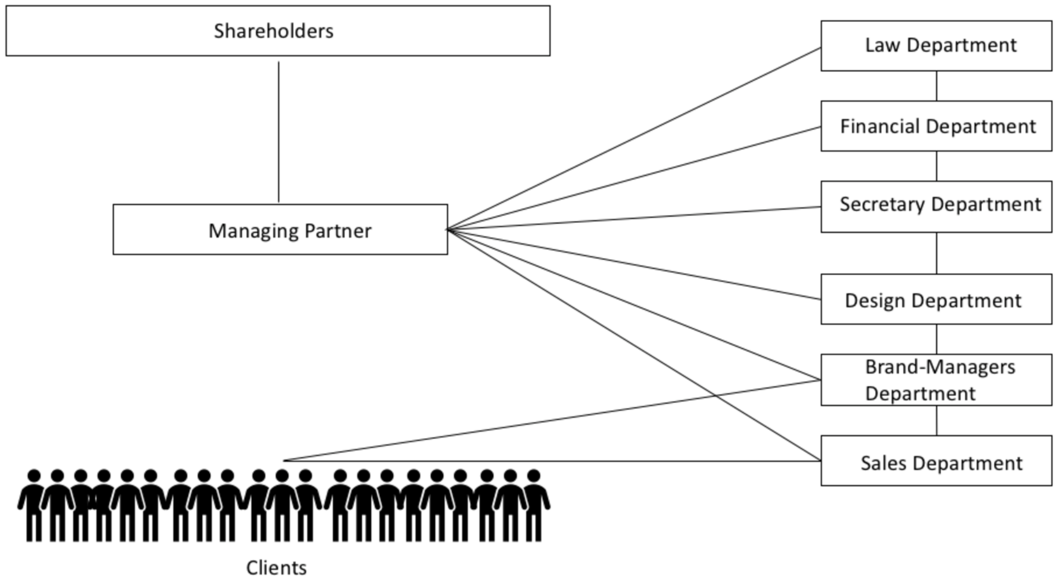
- Market analytics. At this stage, they study the situation in the niche, what products or services already exist, competitors' offers, preferences of the target audience. In large companies, whole departments or even departments are engaged in this. Usually, consumer surveys interviews with employees are conducted as data collection. Focus groups are tested, and more. In simple words, the purpose of the analysis is to determine the current state of affairs in the market and develop a brand concept based on the data. For example, the founder of Uber, to find out the criteria for choosing a CA in the taxi market, rented a limousine for $ 800. The amount at that time was exorbitant for a startup. So, he came up with the idea to divide the cost of the trip into several levels by class and benefit.
- Designing. In marketing, this stage is called brand concept development or positioning. This includes the preparation of a USP - a unique trade offer that includes the strengths of the product/service in terms of value to the consumer. For example, to identify the UTP and build a promotion strategy, questions are asked: the values and meaning of the product, what associations the target audience has, where it will be promoted (environment), and others.
- Preparation of identity elements. Branding is already taking visual forms at this stage. Designers are involved in corporate identity, copywriters - naming and slogan, advertisers, content managers - channels of promotion and interaction with the audience.

- Promotion. It is not enough to create a brand. It still needs to be promoted to the market. That is, to increase brand awareness to attract buyers, investors, partners. Standard promotion methods are the purchase of advertising spaces in the media, the Internet, contextual and banner advertising. Startups with modest budgets use SMM channels, teasers, and thematic blogs.
- Performance evaluation. An essential part of working with branding is a regular process audit. Usually, they measure the ROI of a campaign and study buyers' involvement in the project and other metrics. Timely adjustment to market changes helps to save the brand from obsolescence. If the campaign results are poor, they think about full or partial rebranding.
- Brand image is the very image that arises in the buyer's mind when contacting the products, depending on the advertising message. Therefore, marketers are doing their best to create positive associations in the consumer's head to remember the product for a long time.(Hammond 2017)

The product image allows to separate one product from another by the criteria of the buyer's choice. The brand image works at the level of emotions, feelings, and desires of consumers to possess a valuable product.(O'Brien 2007)
A memorable image depends on the quality of service, brand promotion, and time of presence on the market. For example, cosmetic corporations often use the stars of show business, sports, and cinema to maintain the image of a successful company.

The agency does not seek to obtain short-term profits, as well as profits obtained to the detriment of successful long-term development, but recognizes the need for regular annual profits in the interests of shareholders, stability of financial markets, and for making the necessary investments. The Agency is aware that the success of projects is based on professionalism, compliance with standards of conduct and responsible attitude of its management and employees to the basic principles of activity, and therefore considers recruitment, training and work with personnel one of the main tasks of the company.(Salenbacher 2013)

3.2.1 Agency structure



Picture 2. Structure of Bakers branding agency

Source interview with the managing partner (2021)

After conducting an interview with the managing partner, we received the following information about the agency:

The agency consists of 6 departments:

- Brand Managers Department;
- Law Department;
- Finance Department;
- Sales Department;
- Secretary Department;
- Design Department.

They are subordinate to the managing partner, who reports to the shareholders.

Brand Managers Department twenty-one employees.

The brand manager solves all the urgent tasks related to promoting a personal brand with an individual approach to the client's personality and concern for his comfort. He is in touch daily. Active tasks are performed on weekdays; assistance is provided on weekends if necessary. The brand manager holds a meeting to synchronize project activities with the client every week. Monthly - provides a detailed report, records KPIs, and prepares a plan for the next month, taking expenses into account and loading the client's calendar.

Employee responsibilities:

- Interviewing, conducting an audit of the client's brand;
- Development of a strategy, a plan of possible expenses and activities on the client's part;
- Coordination with the client of the positioning strategy and the work plan for the first three-month sprint;
- Organization of photoshoots;
- Classes with an oratorical skills coach;
- Shooting presentation videos;
- Creating websites;
- Posting the necessary information on sites on the Internet;
- Removing negativity;
- Creation of agreements on speeches, publications, participation in profile events
- Systematic maintenance of social networks;
- Weekly synchronization of processes, monthly written report. The work plan is updated every three months and depends on the previous period's results;
- Audit and strategy development;
- Monitoring the status of touchpoints with target audiences: editing Internet pages, creating new ones, negotiating the removal of unwanted materials;
- Conducting planned studies of image perception. - Adjustment of the strategy if necessary;
- Maintaining pages in social networks;
- Assistance in registration and page design, technical settings;
- Management of all promotion processes in social networks: preparation of a content plan, responses to comments and messages, selection of specialists for individual classes on self-shooting content, planning of advertising campaigns, and integrations;
- Checking texts for errors and adapting to the social network format;
- Establishing relationships with industry journalists and media. A permanent addition to the media card of the media;

- Monitoring of industry requests, preparation of comments on current topics, preparation of up to 4 unique author's articles per month;
- Preparation and publication of press releases about the company's news;
- Organization of interviews and participation in relevant programs and podcasts (preliminary preparation of questions and answers).
- Control of the output of all materials;
- Establishing contacts with industry opinion leaders;
- Conducting negotiations on participation as a speaker or a jury member at events of interest;
- Selection of relevant events to attend, community to join;
- Search for relevant partners for collaborations, supervising the execution of agreements;
- Work with the schedule: selection of relevant events to attend, booking tickets for events, registration as a participant;
- Organization of preparation for performances;
- Management of a personal training program, the work of specialists (stylists, teachers);
- Organization of storage of documents and information on the project;
- Preparation of plans and reports.

Law Department six employees.

Employee responsibilities:

- Initiates create, and coordinates legal documents in the organization;
- Forms the main directions of the legal protection of the enterprise, provides legal support to the structural divisions of the organization;
- Forms the legal position of the organization on the claims of counterparties and third parties;
- Participates in state inspections of the organization, participates in investigative and other actions, provides legal support to relevant structural units;
- Participates in the development of local acts, codes of ethics, policies on personal data processing;

- Protects the interests of the organization in court, monitors the receipt and execution of executive documents;
- Participates in bankruptcy and other arbitration procedures both within the organization and with its debtors; organizes the procedure for approving contracts, takes a direct part in the preparation and approval;
- Analyzes changes in legislation, prepares legal certificates on topical issues of the organization's activities, makes appropriate changes to its contracts and local acts;
- Provides legal support to the personnel service of the organization (participation in labor disputes on the side of the organization, preparation of collective agreements);
- Accompanies and protects the property rights of the organization;
- Advises employees of the organization within the framework of their main activities;
- Protects the interests of the company administratively;
- Formalizes and implements corporate changes in the organization.

Financial department nine employees.

Employee responsibilities:

- Profitability planning, reporting, determining the cost of goods, forming investment forecasts;
- It conducts operational activities. This can include the approval of applications for costs and capital investments, control of accounts receivable and accounts payable, investment management;
- Formation of regulations, procedures, forms, software, optimization schemes, financial contracts.

The objects of activity of the financial department of the agency are called tangible and intangible items in respect of which the employees of the division perform operations. Their list includes:

- profits and losses of the company, pricing policy;
- agency's reporting, including local, management, and accounting;
- cash and capital;
- investments, tax liabilities;
- business processes and key economic indicators.

Sales department thirteen employees.

Employee responsibilities:

- Provides effective communication with clients, studies their requirements;
- takes the necessary steps to conclude new contracts and renegotiate old ones ;
- Gives clients recommendations and consultations;
- Complies with the rules of document management, execution of contracts and accompanying documents;
- Generates and maintains a customer database, makes changes to it on time;
- Makes suggestions to the management on improving customer service;
- Compiles reports reflecting sales results and customer wishes.

Secretary department six employees.

Employee responsibilities:

- Plan the manager's working day;
- To carry out work on organizational and technical support of administrative and administrative activities of the head;
- Accompany the manager at meetings, on trips;
- To accept correspondence received for consideration by the head, to transfer it, by the decision taken, to structural divisions or specific performers for use in the process of work or preparation of responses;
- Conduct record-keeping, presentation of information during preparation and decision-making;
- Accept documents and personal applications for the signature of the head;
- Prepare documents and materials necessary for the work of the head;
- To monitor the timely consideration and submission by structural divisions and specific performers of documents received for execution, to check the correctness of the prepared draft documents submitted to the head for signature, to ensure their high-quality editing;

- Organize telephone conversations of the head, record the information received in his absence, bring its contents to his attention, and promptly bring information to his attention;
- On behalf of the head to compose letters, requests, other documents, prepare responses to the authors of letters;
- To prepare for meetings and meetings held by the head (collection of necessary materials, notification of participants about the time and place of the meeting, the agenda, their registration), To keep and draw up minutes of meetings and meetings;
- To exercise control over the execution of orders and orders issued by the employees of the enterprise, as well as over compliance with the deadlines for the execution of instructions and instructions of the head of the enterprise taken under control;
- To provide the workplace of the head with the necessary means.

Design Department five employees.

Employee responsibilities:

- To create informational, commercial, and trade ads;
- Preparation of commercial proposals;
- Advertising booklets, posters, stands, panels, banners;
- A web page in a given style composes the page elements and decorates them accordingly;
- Develop original layouts of printed advertising materials and covers of publications;
- Recommendations on the design of commercial, administrative, office premises, advertising placement;
- The overall style of the site;
- Selection and analysis of scientific and technical information required at various stages;
- Comparative analysis of similar domestic and foreign products, assessing their aesthetic level;

3.2.2 Agency problems in the branding agency “Bakers”

Agents may not convey all the information to the principals and, at their discretion, choose one or another project regardless of the risks since he does not lose anything, and in case of a win, he will earn more money. The reason is that they usually participate in the company's profits but do not participate in its losses. Therefore, this makes them more risk-averse.(Sappington 1991)
Agents can ensure the normal profitable functioning of the company. However, it is not guaranteed that they choose the optimal result for the company from several options for the agency's development. They rely on their benefit and not on the agency's benefit in their choice. In addition, there are alternative costs – the costs of missed opportunities. Thus, we can say that serious conflicts may arise in the agency between the principal and the agents, leading to high costs, loss of image, and company collapse. (Sanford and Oliver 1992)

Consider what can be the causes of these conflicts in each department:

Brand Managers Department: employees in this department create cases for the agency. At the audit stage, they can create an asymmetry of information and offer the client more services than he would need and benefit from it for himself. However, the client may be aware of one aspect or use an external audit and disclose that extra expenses were imposed on him. This can significantly affect the reputation and lead to significant financial losses.

Law Department: since one of the critical things in working with clients is the preparation and signing of contracts, the work of lawyers is essential. If lawyers in this department distort information about the timing of the production and approval of the contract and agree to conditions that run counter to the principal's interests, this can create severe costs.

Financial Department: as we have already seen earlier, the most important thing is the reporting and correctness of financial statements. The work of the managing partner should be based on an accurate picture and not a picture convenient for the agent.

Sales Department: In this department, employees contact clients directly and advise them. There is a considerable risk that agents will act in their interests and distort information to improve performance, and they may be ineffective.

Secretary Department: secretaries monitor the performance of duties. They are an essential link in the transfer of information between employees, so there is a risk that they can use this for their benefit.

Design Department: in this department, employees prepare graphic tools to promote the client. There is a risk that they can take advantage of the asymmetry of information and prepare a design that will not be profitable for the client and will create costs, will not hit the target audience, but will be easy to do for a designer.

After conducting an anonymous survey where each employee answered the question: **"Would you take the opportunity to distort information if you knew you would benefit from it?"**
As a result, the following data was received:

	"Yes"	"No"	Number of people in the department	% of "yes"
Brand Managers Department	18	3	21	86
Law Department	3	3	6	50
Financial Department	4	5	9	44
Sales Department	8	5	13	62
Secretary Department	2	4	6	33
Design Department	2	3	5	40

Table 4. Survey results before
Source author’s research

3.2.3 Applied methods of solving “principal-agent” problem

We can see from the results that there is a risk that all these problems can lead to reputational and residual losses – the monetary equivalent of reducing the principal's welfare due to the agent making decisions that are inconsistent with the principal's interests. (Jensen and Meckling 1976)

So, the agency's growth directly depends on clients' recommendations and reputation. If employees are willing to go to the asymmetry of information and take advantage of the opportunity to benefit from it, a principal-agent problem is created. (Sappington 1991)

To minimize the risks, the following methods of solving the problem were applied:

In Law and Secretary Departments has introduced a competition of agents. So, they monitor each other's actions, and productivity will increase because the agent is rewarded for the best quality of work.

In Design and Sales Departments, agents now participate in joint activities' results by applying a linear dependence of remuneration on results. Therefore, agents will strive for the common good of the agency and not try to increase only their performance and achieve their interests despite the costs.

The Financial Department is now conducting an independent audit, which will reduce the risk of information asymmetry due to external audits of financial activities.

In Brand Managers Department, there is a coalition of agents, so the principal is more aware of agents' actions, motivation increases, and the desire to give and receive benefits only for himself and not for the agency is minimized.

After introducing ways to solve the agency problem in each department, a new anonymous survey was conducted where each employee answered the question: **"Would you take the opportunity to distort information if you knew you would benefit from it?"**.

As a result, the following data was received:

	"Yes"	"No"	Number of people in the department	% of "yes"
Brand Managers Department	4	17	21	19
Law Department	2	4	6	33
Financial Department	3	6	9	33
Sales Department	2	11	13	15
Secretary Department	1	5	6	17
Design Department	1	4	5	20

Table 5. Survey results after

Source author's research

3.2.4 Analysis

The Wilcoxon test allows organizing the available data, dividing them into two groups (before and after), and analyzing. The results obtained using this technique are reliable and justified and reflect the general trend of the studied phenomenon or feature. (Goos and Meintrup 2016)

Data were collected before and after implementing measures to prevent the principal-agent problem.

The initial data from the percentage of people who answered "Yes" to the question " Would you take the opportunity to distort information if you knew you would benefit from it" that is, the percentage of people who are willing to go for opportunistic behavior and the percentage of people who answered the same question, after the introduction of the solution to the agency problem in their department are presented in the form of the following table:

	Before	After
Brand Managers Department	86	19
Law Department	50	33
Financial Department	44	33
Sales Department	62	15
Secretary Department	33	17
Design Department	40	20

Table 6. Results before and after in %

Source author's research

Hypothesis

H0: There is no significant difference between the percentage of people willing to asymmetry information before and after introducing a solution to the principal-agent problem.

H1: There is a significant difference between the percentage of people willing to asymmetry information before and after introducing a solution to the principal-agent problem.

The first step in calculating the T-criterion is subtracting each value "before" from the value "after."

Then determine the typicality and atypicality of the identified changes. To do this, needed to determine which direction the dominant is inherent in.

Next, in ascending order, rank the differences of the pairs by their absolute values. A lower absolute value of the difference is assigned a lower rank.

	Before	After	Difference	Absolute value of the difference	Rank difference number
Brand Managers Department	86	19	-67	67	6
Law Department	50	33	-17	17	3
Financial Department	44	33	-11	11	1
Sales Department	62	15	-47	47	5
Secretary Department	33	17	-16	16	2
Design Department	40	20	-20	20	4
				Sum	21

Table 7. Wilcoxon test

Source author's research

The sum of the ranks column is ∑=21

Checking the correctness of the matrix based on the calculation of the checksum:

$$\sum x_{ij} = \frac{(1+n)n}{2} = \frac{(1+6)6}{2} = 21$$

The sum of the column and the checksum are equal, which means that the ranking was carried out correctly.

Calculation of the sum of ranks related to atypical shifts. The sum of the ranks of these "rare" directions is the empirical value of the criterion T:

T=∑Rt=0

According to the Application table, we find the critical values for the Wilcoxon test for n=6:

Tcr=2 (p=0.05)

Compare Temp and Tcr., with a significance level of p=0.05

Consequently, Temp.<Tcr., changes in the indicator are statistically significant at p=0.05.

H0 is rejected, there are statistically significant differences between the change in the percentage of people willing to asymmetry information before and after introducing a solution to the principal-agent problem.

4 Results and Discussion

After conducting this analysis, it becomes obvious that the problem of the principal-agent is important to consider to preserve the business. The manager is an integral part of the company and performs its specific tasks. “Even in a linear organizational structure, in addition to the organizational function and the planning function, the functions of staffing, management (development of formalized action directives), reporting, coordination, and budgeting (i.e., effective allocation of human and financial resources, respectively) are attached to it. (Jensen and Meckling 1976)” Actually, considering the case of Enron and the Bakers agency, we saw how many mechanisms should be thought out and taken into attention. “To perform all these functions, the manager must have reliable and timely information.(Sappington 1991)” This is fully confirmed by the example shown by Enron and the size of the catastrophe resulting from the neglect of this factor. And for this, as well as for the effective activity of the manager, it requires the development of a perfect organizational structure, the responsibility for the formation of which lies with the principal.

The main issue here relates to the system of incentives that promote or, on the contrary, prevent the dissemination of reliable information by the agent. Competition contributes to the dissemination of reliable information in the market. In the usual version of the relationship between the principal and the agent, on the contrary, the prospects of opportunism and the asymmetry of information stimulate manipulation by the agent of the principal. In management, the responsibility of the principal and the agent is mutual. The responsibility of the principal as a participant of the business management system is expressed in the formulation of tasks and goals, bringing his understanding of tasks and goals to the agent, setting rules of action to achieve goals, eliminating the agent's monopoly on information, conducting control that does not distract the attention of the performer and in fair remuneration of the agent. The agent's responsibility as a participant in the business management system is expressed in assisting the principal in formulating tasks and goals, in understanding the conditions for achieving the goals set, in motivated and high-quality execution, in assisting the principal in the implementation and development of a control system that minimizes interference in the agent's activities.(Braun 2013; Jensen and Meckling 1976; Sanford and Oliver 1992)

This is a completely correct approach to business formation, adhering to these directions can escape the fate of Enron. Just as it was revealed in the situation of a branding agency to reduce the possibility of losses.

The competitive advantage of the manager is to find an intercompany structure that is close to the ideal for this organization in order to maximize the effectiveness of the agents' activities. The main question is the choice of a system of incentives that promote or, on the contrary, prevent the dissemination of reliable information by the agent.(Waterman and Meier 1998)

So, it is considerable to use tools to increase responsibility:

- Set clear goals and unambiguous priorities. Goals focus the attention of performers, and priorities form a system of priority control and resource allocation. If you have set an acceptable number of goals and prioritized them, this allows you, as a manager, to expect responsible behavior of the performer or subordinate.

- Form rules of action when achieving the set goals. Paradoxically, the fact is that the more perfect the system is, the more freedom it creates for the actions of employees since in this case they do not need to wait for instructions for each step. That's why people prefer to work in the system - it makes them free and allows them to achieve maximum responsibility and productivity. Moreover, system management contributes more to the early awareness of the need for changes and their more effective implementation (implementation).

- Eliminate the causes of information asymmetry and achieve synchronization of understanding of goals and objectives. Often the basis of asymmetry is the phenomenon of "active inertia" - the desire to respond to radical environmental changes not by changing their behavior, but by activating actions that led to success in the past. Even though the world is changing, managers who are subject to active inertia react to these changes as if everything is going on as before.

With the help of an analytical study conducted at a branding agency, it was revealed that the creation of a coalition of agents, the competition of agents and their remuneration depending on the success of the company and the involvement of a third-party audit will help to correct the situation

However, these methods are criticized for encouraging agents to make risky decisions. O. Williamson also noted that opportunistic behavior can be influenced by creating a coalition of agents because employees will have an increased sense of responsibility.(Williamson 1985)

Indeed, in the case of a branding agency, the use of this possibility of solving an agency problem reduced the desire of agents to show opportunistic behavior and reduced the possibility of various losses for principals.

Particular criticism is paid to competition among agents, the authors say that this method finally destroys the elements of trust in the relationship between agents, and tasks requiring joint efforts of agents become practically unrealizable.(Myerson and Satterthwaite 2010; Waterman and Meier 1998)

According to the results of the research in the branding agency, this method worked and did not allow financial losses to occur. So, it can be concluded that this method will not necessarily lead to deterioration.

This suggests that each case is individual and the final result of implementing ways to solve an agency problem depends on many factors. It is important to take into account the individual degree of the agent's propensity to risk associated with "natural" unforeseen circumstances. The most critical factor to pay attention to is the human factor. After all, in different companies, under different circumstances and with other people, the result can be completely different. Since the principal-agent problem is very influential, it is necessary to continue research in this area, exploring various companies and what outcome will follow from the application of the possibilities of solutions to the agency problem for collecting statistics.

5 Conclusion

Thus, it is proved that by applying these solutions to the agency's problem, its reputational and financial losses have become lower. The problem of the agent's principal builds certain circumstances for the agency's functioning. There is an expectation that the agent will do everything to maximize his usefulness to the principal. In reality, the agent seeks to use the information asymmetry that has arisen in front of him and the principal to be able to act in his interests and with benefit for himself, which may not coincide with the principal's interests. Ideal agent - understands the interests of the principal as his own. Because of the threat of manipulation when performing tasks by an agent, an agent problem arises. Principals always limit the agent's goals to their own goals and interests. Different interests create all the risks and can take the form of conflicts due to the inability to fully control all decisions and actions of the agent. There are several solutions to the problem: creating a system of effective forms of organization and incentives, strengthening control, which sometimes involves high costs; organizing agency competition by the principal; the participation of agents in the results of the organization's activities and the alternate performance by the agents themselves of the functions of the principal.

Consequently, the activity of organizations inevitably raises the question of the opportunistic behavior of an agent-based on the unique information available to him. For this reason, the problem of the principal and the agent is considered a particular case of a moral hazard situation: the principal plays the role of an insurer against "natural" risks, and the agent is a subject hiding critical information about the client from him (business status). Enron's example shows how important it is to pay attention to all these aspects because ignoring this problem can lead to collapse and significant losses. This explains why principals should be aware of the situation in the company and the actions of the manager. The principal-agent problem is fundamental in a branding agency because it directly affects its performance. With the help of the study, it was proved that in this agency, the use of methods to solve the agency problem reduced the risk of costs and losses.

6 References

Agrawal, A., Knoeber, C. (1996). “Firm Performance and Mechanisms to Control Agency Problems between Managers and Shareholders”, The Journal of Financial and Quantitative Analysis, vol. 31, no. 3, pp. 377-397, ISSN 0022-1090, DOI 10.2307/2331397’.

Aklerof, G., (1970). "The Market for “Lemons”: Quality Uncertainty and the Market Mechanism", The Quarterly Journal of Economics, vol. 84, no. 3, pp. 488-500. ISSN 1032-0493, DOI 10.2307/1879431

Arrow, K,. (1963). "Uncertainty And The Welfare Economics Of Medical Care". Bulletin of the World Health Organization. Vol. 53, no. 5, pp. 34-68. ISSN 0042-9686, DOI 10.1590/S0042-96862004000200013

Adolf, A., Gardiner, C., (1932). "The Modern Corporation and Private Property." 2nd Edition. Routledge._ISBN 0887388876

Blanchard, P., Gaigne, C., Mathieu, C., (2010.) Intra-Firm Trade Structure, Market Integration, and Fiscal Harmonization. Revue économique. Vol 61, no. 5, pp.895-915 DOI 10.3917/reco.615.0895

Braun, R. (2019), “Corporate Stakeholder Democracy: Politicizing Corporate Social Responsibility”, Central European University Press, ISBN 978-963-386-292-6

Coase, H. (1937). "The Nature of the Firm"._ Economica. Vol. 4, no.6 pp.386-405 DOI 10.1111/J.1468-0335.1937.TB00002.X

Dembe, A., Boden L. (2000). "Moral Hazard: A Question of Morality". NEW SOLUTIONS A Journal of Environmental and Occupational Health Policy. Vol. 10, no. 3, pp. 257-79. DOI 10.2190/1GU8-EQN 8-02 J6-2RXK

Dierkens, N., (1991.) "Information Asymmetry and Equity Issues". Journal of Financial and Quantitative Analysis. Vol. 26, no.2 , pp.181-199, DOI 10.2307/2331264.

Freeland, R. (1996.) "The Myth of the M-Form? Governance, Consent, and Organizational Change". American Journal of Sociology. Vol. 102, no. 2, pp. DOI 10.1086/230953

Goos, P., Meintrup, D. (2016). "Statistics with JMP: Hypothesis Tests, ANOVA and Regression". Wiley. ISBN 978-1-119-09715-0

Guriev, S. (2015). ‘Considerations Of Lectures On The Theory Of Contracts’. SSRN Electronic Journal. DOI 10.2139/ssrn.3426238

Hammond, K. (2017) "Branding: Brand Identity, Brand Strategy, and Brand Development.", CreateSpace Independent Publishing Platform. ISBN 978-1-981712-37-3

Hart, O., Moore, J. (1990). "Property Rights and the Nature of the Firm". Journal of Political Economy. Vol. 98, no. 6, pp. 1119-1158. ISSN 4382-1038, DOI 10.1086/261729

Healy, P., Palepu, K., (2003). "Governance and Intermediation Problems in Capital Markets: Evidence from the Fall of Enron'. Journal of Economic Perspectives vol.17 no. 2, pp. 3–26, ISSN 1556-5068, DOI 10.2139/ssrn.325440.

Hutton, A., (2003) "The Role of Sell-Side Analysts in the Enron Debacle". SSRN Electronic Journal, pp. 03–17. ISSN 1556-5068, DOI 10.2139/ssrn.404020.

Jensen, M., Meckling, W., (1976). "Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure.". Journal of Financial Economics, Vol. 3, no. 4, pp. 305-360.ISSN 1293-2384, DOI 10.1002/9780470752135.ch17

Johnson, C., (2003). "Enron's Ethical Collapse". The Journal of Leadership Education Vol. 2, no. 1, pp. 45–56. ISSN 1552-9045, DOI 10.12806/V2/I1/C2.

Lambert, R., Luez, C., Verrecchia, R. (2012). "Information Asymmetry, Information Precision, and the Cost of Capital". Wharton Financial Institutions Center Working Paper. Vol. 4, No. 3 ,pp. 06-21, ISSN 2381-1128 DOI 10.1093/rof/rfr014.

Madrick, J., (2002). "Report of Investigation by the Special Investigative Committee of the Board of Directors of Enron Corp." The New York Review of Books. Vol, 4 no. 49, pp. 21–24. ISSN 0028-7504, DOI 10.1108/09513570310482327.

Mahmoud, K., (2021). "Fraud Examination of the Enron Corp Company". Journal of Finance and Investment Analysis. Vol. 10, no. 4, pp. 15-24. ISSN 0028-7504, DOI 10.47260/jfia/1042.

McLean, B., (2013). "The Smartest Guys in the Room: The Amazing Rise and Scandalous Fall of Enron." Penguin Publishing Group. ISBN 1-59184-660-9

Miligrom, P, and J Roberts. 1992. 'Economics, Organization and Management'. The Journal of Finance. Vol. 48, no.1, pp 47-59. ISBN: 9780132246507 DOI 10.2307/2328903

Myerson, R., Satterthwaite, R. (1983). "Efficient Mechanisms for Bilateral Trading". Journal of Economic Theory. Vol. 29, no.2 , pp. 265-28. DOI 10.1016/0022-0531(83)90048-0

Nelson, M., Elliott, J., and Tarpley, R. (2000.) "Evidence from Auditors about Managers and Auditors' Earnings Management Decisions". The Accounting Review. Vol. 1, no. 77, pp. 1–14. ISSN 0001-4826 https://doi.org/2001.

O'Brien, T., (2007). "The Power of Personal Branding: Creating Celebrity Status with Your Target Audience". Mendham Publishing. ISBN 978-0-9714589-0-1

Partnoy, F., (2002). "Enron and Derivatives", pp. 173–86. ISSN 1556-5068, DOI 10.2139/ssrn.302332.

Penman, S. (2001). "Financial Statement Analysis and Security Valuation". McGraw-Hill/Irwin. ISBN 0-07-337966-2

Salenbacher, J., (2013). "Creative Personal Branding: The Strategy to Answer: What's Next." Laurence King Publishing. ISBN 978-90-6369-315-2

Salter, M., (2008.) "Innovation Corrupted: The Origins and Legacy of Enron's Collapse." Harvard University Press. ISBN 978-0-674-02825-8

Sanford, J., Oliver, D. (1992). "An Analysis of the Principal-Agent Problem". Econometrica. Vol. 51, no. 1, pp. 7-45. ISSN 1293-0213 , DOI 10.1007/978-94-015-7957-5_16.

Sappington, D. (1991). "Incentives in Principal-Agent Relationships". Journal of Economic. Vol. 5, no. 2., pp. 45-66. ISSN 0293-2938, DOI 10.1257/jep.5.2.45.

Seeger, M., Ulmer, R., (2003). "Explaining Enron". Management Communication Quarterly Vol. 1, no. 17, pp. 58–84. ISSN 0893-3189, DOI 10.1177/0893318903253436.

Sendyona, C., (2020). "ENRON SCANDAL: EVIDENCE OF A MISSED OPPORTUNITY TO DETECT AND HALT FRAUD AND BANKRUPTCY". European Journal of Accounting, Auditing and Finance Research. Vol. 8, no. 5, pp. 54–65. ISSN 0893-3189, DOI 10.1177/0893318903253436

Shields, G. (2018). "Corporate Finance: The Ultimate Guide to Financial Reporting, Business Valuation, Risk Management, Financial Management, and Financial Statements." CreateSpace Independent Publishing Platform. ISBN 978-1-72721-898-5

Siskos, D., (2014.) "Detecting Financial Reporting Fraud Lessons Learned by Enron Corp." SSRN Electronic Journal. ISSN 1556-5068, DOI 10.2139/ssrn.2390522.

Frederick, T. (1909). "The Principles of Scientific Management"._ Dover Publications ISBN 978-0486299884

Tsvetkov, V. (2014). "Information Asymmetry as a Risk Factor". European Researcher. Vol. 86, no. 11-1, pp. 1937-1943.DOI 10.13187/er.2014.86.1937.

Waterman, R., Meier, K. (1998). "Principal-Agent Models: An Expansion?". Journal of Public Administration Research and Theory. Vol 8, no. 2, pp. 39-87. ISSN 0239-0322, DOI 10.1093/oxfordjournals.jpart.a024377

'What Is a Moral Hazard?' n.d. Investopedia. Accessed 22 December 2021. https://www.investopedia.com/ask/answers/09/moral-hazard.asp.

William, T., (2002.) "The Rise and Fall of Enron When a Company Looks Too Good to Be True, It Usually Is". Journal of Accountancy. pp. 47–48.

https://www.journalofaccountancy.com/issues/2002/apr/theriseandfallofenron.html

Williamson, O. (1985). "The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting". NY: Free Press. ISBN 068486374X

Personal interview with managing partner of Bakers agency. (2021)

NASDAQ Composite index and Enron stock performance (2022)
[Online]
Available at: https://www.bloomberg.com

Enron Annual Report (2000)
[Online]
Available at: https://picker.uchicago.edu/Enron/EnronAnnualReport2000.pdf