



ISSN 2534-9228 (online)

*Journal of Scientific Papers*

# ***VUZF REVIEW***

*Volume 6, Issue 3, September 2021*

*Public organization:*  
**VUZF University of Finance, Business  
and Entrepreneurship**



<https://papersvuzf.net/index.php/VUZF/>

Vol. 6, №3 September, 2021	Founded in 2016 by the VUZF University
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# Principles, assessment and methods of risk management of investment activities of the enterprise

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**Received:** June 14, 2021 | **Revised:** August 21, 2021 | **Accepted:** September 09, 2021

**JEL Classification:** D81, M11, E20.

**DOI:** 10.38188/2534-9228.21.3.06

## Abstract

In the article, authors explored the essence and content of the concept of “investment risk”, as well as identified factors influencing investment risk. The classification of investment risks on various grounds is carried out and scientific approaches to understanding the essence of “investment risk management” are considered. It is reasonable to manage the risks of investment activities of the enterprise in three stages: risk identification, risk measurement and risk control. Two directions of risk management of investment activity of the enterprise are described, namely: the policy directed on direct reduction of risk and the policy directed on minimization of possible negative consequences of risk. The principles of risk management of investment activity of the enterprise are characterized, such as awareness of risk acceptance, manageability, compatibility, accounting, taking into account the possibility of risk transfer. Peculiarities of application of risk management methods of investment activity of the enterprise (transfer, retention and risk avoidance) are revealed. The authors consider several risk management strategies for investment activities of the enterprise: asset allocation, diversification, hedging, investment valuation, investment restrictions. The advantages and disadvantages of methods for assessing the risks of investment activities of the enterprise (expert assessment, SWOT-analysis, method of analogies, adjusting the discount rate) are highlighted. Authors considered qualitative and quantitative scientific approaches to assessing the risks of investment activities of the enterprise. It is proved that one of the industries that is significantly exposed to the risks of investment activity is the telecommunications industry, which is exposed to the following risks: economic and legal, socio-political, technological and financial. The key directions of investment by enterprises of the telecommunication sphere are investigated – Crown Castle International, Amdocs Limited, Xilinx, Inc, Qualcomm, Verizon Communications. The article considers the local and telecommunication levels of investment activity risks, as well as suggests directions for risk management of investment activities of the enterprise.

**Keywords:** investment risk, management, investment activity, telecommunication sphere.

## Introduction

Comprehensive development of a system of actions aimed at intensifying investment activities, effective use of investment potential, attracting investment in the real sector of the

economy is an urgent problem for Ukrainian businesses that needs to be addressed. The fundamental importance, the diversity of the problem of identifying and minimizing the risks

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of investment activities of enterprises necessitate the study of classification, assessment processes and features of risk management of investment activities, taking into account all factors of influence.

Investment activity is one of the key forms of economic activity of the enterprise. Opportunities for enterprise development and economic growth are largely determined by investment projects. The investment process is implemented and managed through the

## Material and methods

The problem of studying and analyzing the risks of investment activities of enterprises is widely studied in foreign and Ukrainian literature. Many scientists, such as T. Balanska (Balanska, Postan, 2016), T. Smirnova (Smirnova, Malkush, 2017), V. Glibchuk (Glibchuk, 2018), G. Verbytska (Verbytska, 2016), E. Panchenko (Panchenko, Maryna, 2016) devoted their work to the issue of investment risk management. However, a number of investment risk management issues remain unresolved.

The risk management mechanism of investment activity, namely its stages, directions

## Results and discussion

Close attention to the problem of risk regulation of investment activities of the enterprise is due to the fact that the negative trends of its development pose a serious threat to the economic security of the enterprise. Irrational use of available investment potential hinders the dynamic and balanced development of the economy.

All investments involve some degree of risk. Risk is an important component in assessing investment prospects. Investors, making investments, consider less risk more favorable. The lower the investment risk, the more profitable the investment. However, the greater the risk, the better the return. As investment risks increase, investors seek to increase profits to compensate for such risks. Each savings and investment product has different risks and returns. Differences include: how easily

investment policy of the enterprise. Investment policy is aimed at the use and formation of investment potential, which, in turn, is the result of investment processes and is based on investment.

Risk is an integral attribute of a market economy. Every company strives to increase profits through optimal solutions and minimize risk. This requires risk assessment and forecasting.

and principles, require close scientific attention. By reducing the likelihood of default and underinvestment, investment risk management helps companies make choices that benefit customers, employees, suppliers and investors.

This can be achieved by using the following scientific methods: analysis – to identify the available in the scientific literature many views on risk management of investment activities; synthesis and generalization – to form a comprehensive list of proposals to improve the efficiency of investment activities of enterprises; observation – to study the actual state of the investment environment.

investors can get their money when they need it, how fast their money will grow, and how safe their money will be. Main factors influencing investment risks are shown in Table 1.

**Table 1 – Factors influencing investment risk (summarized by authors based on sources (Kolomiiets, Pavlichenko, 2016)).**

Influence factor	Characteristics of the influence of the factor
1	2
Wrong decisions	Usually based on erroneous calculations
Terms of investment	Long-term investments are more risky than short-term ones because the future is not stable
Investment level	The larger the amount of investment, the greater the risk
Field of activity	Growing industries are less risky
Political and legal factors	Changes in government policy and legal statutes

The investment policy of the enterprise is a complex set of measures that ensure a profitable investment of own, borrowed and other funds in investments in order to ensure stable financial stability of the enterprise (Stolbov, 2016). An integrated approach to risk management considers the relationship between different sources of risk and their impact on the overall business. Key word of modern risk management is the use of probabilistic models (Kolinko, 2019).

Considering the scientific approaches to understanding the concept of “investment risk”,

All investments carry a certain degree of risk. By better understanding the nature of risks and taking measures to manage them, the company better fulfills its financial goals. Limiting the percentage invested in one sector can save you from devastating losses due to hard times or overstatement in one sector

we can conclude that it is associated with possible losses and deviations from the expected financial results of the investment project. Diverse classification of investment risks depending on the stage of investment policy, sources, areas of manifestation and factors of influence simplifies the process of identifying risks of investment policy of the enterprise and facilitates the choice of strategy to prevent, eliminate or minimize them.

Approaches to understanding the essence of “investment risk management” of the enterprise include three components (Figure 1).

Investment risk management has become a critical aspect of value maximization, it increases the value of the firm by reducing its instability of cash flows, the likelihood of default and underinvestment

Risk management allows to direct the activities of the enterprise to anticipate risks and reduce their negative impact, ensures the economic security of the enterprise

**Figure 1 – Scientific approaches to understanding the essence of “investment risk management”**  
(compiled by authors based on sources (Koroluak, 2019; Nymoshek, 2019; Mostenska, 2015))

For a balanced and sound implementation of risk management of investment activities of the enterprise, you need to go through several main stages:

1. Risk identification is the systematic identification and study of risks that are characteristic of investment activities. Dangers that pose a threat are identified; resources that may be affected; risk factors; loss, which expresses the impact of risk on resources.

2. Risk measurement – determining the degree of its probability and the size of potential damage. Use special methods of risk assessment based on

the development of scenarios for its occurrence (Shyshkin, 2018).

3. Control is divided into physical and financial. Physical control is the use of methods that reduce the likelihood or extent of damage associated with certain costs. The rule is that the costs of the system of preventive measures to prevent risk and reduce losses should not exceed the possible amount of damage. Financial control of risk is to find sources of compensation for possible losses in cash. In the economic scientific literature there are several key areas of risk management of investment activities of the enterprise (Table 2).

**Table 2 – Areas of risk management of investment activities of the enterprise**  
(summarized by authors based on sources (Koroliuk, 2017))

Direction of risk management	Risk management measures
1	2
policies aimed at direct risk reduction	- redistribution or addition of resources; - adjustment of calendar plan; - conducting additional marketing research;
policies aimed at minimizing the possible negative consequences of risk	- insurance; - attraction of co-investors.

The peculiarity of risk management of investment activities of the enterprise is the relationship of stakeholders, because unexpected events affect shareholders, debt holders, managers, employees, customers. The

basis of economic relations between these participants are special principles of risk management of investment activities of the enterprise (Table 3).

**Table 3 – Principles of risk management of investment activities of the enterprise**

*(summarized by authors based on sources (Yarovenko, 2015))*

Principle	Characteristics of the principle
1	2
risk awareness	the company does not seek to avoid any risks in its activities in principle, and works with a level of risk that allows to ensure the expected profitability
controllability	availability of projects with managed risks, with the ability to use various tools to neutralize them
compatibility	compatibility of the level of accepted risks with the level of profitability
comparability	comparison of the level of accepted risks with the financial capabilities of the enterprise
accounting	accounting for a temporary factor in risk management; compliance with the company's policy in relation to the level of acceptable risk
taking into account the possibility of risk transfer	projects with a level of risk above the standard, but only if the probable financial losses can be shared with contractors

Starting the investment activity of the enterprise, in order to minimize the risks at the initial stages, it is necessary to determine the following aspects: planned time of receipt of funds, possible amount of funds for emergencies and debt coverage, security level for the enterprise, action plan in case of unsuccessful investments. acceptable level of investment reduction. To avoid risks or minimize their negative impact on enterprises, a whole system of methods for managing the risks of investment activities can be used (Table 4).

**Table 4 – Methods of risk management of investment activities of the enterprise**

*(summarized by authors based on sources (Koroliuk, 2016))*

Method	Features of application of a method
1	2
Risk transfer	the ability to transfer risk from one company to another on a contractual basis
Risk retention	availability of reserve funds that can cover the negative effects of risk
Risk avoidance	refusal to conduct financial transactions related to risk

There are five main strategies for managing the investment risk of an enterprise.

Strategy 1. Allocation of assets. By including various asset classes (such as stocks, bonds, real estate, and cash) in its portfolio, an enterprise increases the likelihood that some of its investments will return satisfactorily, even if others equalize or lose value. Thus, the risk of large losses, which may be the result of excessive emphasis on one class of assets, is reduced. Asset allocation planning is the first step in managing investment risk. Most investors invest too aggressively when valuations are high and too conservative (out of

fear) when deals are available. Calculating the probable maximum loss for the company will help determine what risk to take (*Fedorovych, Tsikh, 2018*).

Strategy 2. Diversification is the process by which an enterprise distributes money allocated to a particular asset class, such as inventories, to different categories of investments belonging to that asset class. Diversification with an emphasis on diversity allows for the distribution of assets. In a diversified investment portfolio, the yield on securities and stock prices will be different. Diversification reduces risk by combining investments that reduce the ratio of assets and

is attractive to anyone who does not like risk and prefers a certain future rather than an uncertain one.

Strategy 3. Hedging is the purchase of a security to compensate for a potential loss on another investment. The purpose of hedging is to eliminate the uncertainty of future cash flows (both negative and positive), which will give a complete picture of future income and expenses arising in the process of financial or commercial activities (*Garmatii, 2019*). Main task of hedging – the transformation of risk from unpredictable forms to clearly defined. It aims to change the risk of interest rates, commodity and currency risks through derivative instruments.

Hedging aligns the incentives of managers with the interests of shareholders and increases their responsibility and self-awareness. Hedging improves the compensation of executive contracts and the evaluation of efficiency. Hedging helps to reduce the asymmetry of information between managers and shareholders about the source and extent of the risks faced by the company. Employees benefit from the practice of hedging because the security of their work is associated with the risk of bankruptcy (*Kolosivska, Mashlii, 2016*).

Individual investments can increase or decrease the price without any correlation with the market. This is a specific risk for an individual investment or a small group of investments. If a company has only one investment, its risk is extremely high. However, if the company has 15-30 investments, it “smooths” its profits, reducing difference in portfolio returns. Hedging and insurance can provide additional ways to manage risk. In addition, hedging typically involves higher-risk speculative activities, such as short selling or investing in illiquid securities (*Hlushchevskii, 2017*).

Strategy 4. Investment evaluation. Even with the right distribution and diversification of assets, the choice of individual investment should be based on evaluation. Time estimates are a form of market timing for the investor. Valuation terms mean that the company has assets that provide a margin of safety. The

required margin of safety will determine the probability of success of the enterprise. The greater the required margin of safety, the more likely it is above the average rate of return. Acquisition of investments without any, or even negative stocks, increases the probability of loss of investment capital. High-quality assets can be risky, and low-quality assets can be safe. It's just a question of the price they paid for them. Businesses should not try to stay ahead of the market and instead focus on buying assets at prices that will greatly increase the chances of a positive outcome for the company (*Boiko, 2017*).

Strategy 5. Investment restrictions. Investment limits can help a company ensure sufficient diversification of its investment portfolio and maintain an acceptable level of risk. Having a credit rating is an important condition of an open financial market and is used internationally: for regulatory purposes; when negotiating with the investor and raising funds and to improve the risk management systems of the investment environment. In determining its policy, the company may either accept the limits set by law or choose more restrictive limits. The recommended approach is to set one set of limits for all broad asset categories and then a separate set of limits for financial instruments (*Churina, 2014*).

Investment risks directly depend on changes in the investment climate, ie a set of economic, legal, financial, political and social factors. The investment climate is a complex market tool for optimizing the flow of investment. In order to determine the probability and amount of losses that characterize the magnitude (or degree) of risk, a risk assessment is performed. It is largely subjective and depends on the manager's ability to assess the situation and make decisions.

A step-by-step assessment of investment risks is determined for each stage of investment separately, and then they are summarized. The emphasis of risk assessment of investment activities of the enterprise is on the analysis of risk factors and uncertainty in development process (Table 5).

**Table 5 – Advantages and disadvantages of methods for assessing the risks of investment activities of the enterprise (authors' development)**

Risk assessment method	Advantages of the method	Disadvantages of the method
Expert evaluation	Possible with a lack of information	The views of expert analysts may differ from those of practitioners
SWOT analysis	Simplicity, determination of influencing factors	Lack of dynamics in time, analytical assessment
Method of analogies	Used to assess the risk of re-investment	Difficulties in finding such an investment project
Adjusting the discount rate	Easy to calculate	Do not take into account the probability of deviation from the result

When assessing the effectiveness of investments, the calculation of the realized return on the portfolio and comparing the result with the selected baseline in this case is a quantitative description of the behavior of the selected set of securities or any of the known stock bond indices (Standard & Poo's 500), published by leading consulting companies. Global bond market indices

include the Merrill Lynch Global Bond Index, Barclays Capital Aggregate Bond Index, and WorldBIG (Holiubov, 2016). Calculations require the conversion of future flows to the current period of time, but the calculations do not take into account the probability of deviation from the result, ie the degree of risk (Table 6).

**Table 6 – Scientific approaches to risk assessment of investment activities of the enterprise (summarized by authors based on source (Zaplitna, 2016))**

Approach	Qualitative	Quantitative
Methods	building an event tree construction of a fault tree identification of hazard indicators evaluation of points-factors	decision tree sensitivity analysis script-based method method of statistical approach Monte Carlo method
Advantage	leads to a quantitative assessment, where the risk is assessed in value terms	simplicity of mathematical calculations
Drawback	complex processes of information processing and analysis	need for a large number of observations

The qualitative approach begins with identifying risks at the planning stage and is based on the need for preliminary research to gather information before analyzing the actual risks. The essence of a qualitative approach is to study the possible causes of risk and various criteria that contribute to the dynamics of risk. After assessing the expected damage at the last stage of the analysis, measures are prepared to combat the identified risks. A quality approach uses subjective values and is

closely linked to investment conditions.

The quantitative approach is a numerical measurement of the impact of changes in factors. Investment risk analysis is based on the application of mathematical statistics, probability theory and other mathematical tools. Quantitative assessment is characterized by the use of unbiased conclusions, requires the proper use of mathematical analytical tools and is based on statistical samples and time series (Table 7).

**Table 7 – Quantitative methods for calculating the probability of risks of investment activities of the enterprise (summarized by authors based on source (Tymoshyk, 2019))**

Risk assessment method	Advantages of the method	Disadvantages of the method
Sensitivity analysis	<ul style="list-style-type: none"> <li>- quick assessment</li> <li>- modeling of different ways of project development: from negative to positive</li> </ul>	<ul style="list-style-type: none"> <li>- insufficient consideration of the correlation coefficient</li> <li>- only possible scenario</li> <li>- analysis of changes in parameters independently of each other</li> </ul>
Script-based method	<ul style="list-style-type: none"> <li>- accounting for the correlation coefficient</li> <li>- study of possible project implementation options</li> <li>- taking into account the relationships between the parameters</li> </ul>	<ul style="list-style-type: none"> <li>- inability to predict all possible options and parameters of the external environment</li> <li>- the need to select and process information for multiple forecasts</li> <li>- limited number of variables</li> </ul>
Statistical approach	<ul style="list-style-type: none"> <li>- accurate for a long period</li> </ul>	<ul style="list-style-type: none"> <li>- inaccurate for a long period</li> </ul>
Monte Carlo method	<ul style="list-style-type: none"> <li>- high accuracy, analysis of socially significant projects</li> </ul>	<ul style="list-style-type: none"> <li>- simulation requires software</li> </ul>

Thus, risk assessment of investment activities of the enterprise is an important element of investment policy of any organization, regardless of the field of operation, the effective implementation of which increases the profitability of the organization and its

investment attractiveness and helps to successfully adapt to changes in the environment without significant losses. The telecommunications sector is particularly exposed to various risks (Table 8).

**Table 8 – Risks of the telecommunications industry of Ukraine (authors' development)**

Risk	Impact
Uneven distribution of radio frequency resource between operators	limiting opportunities for competition in the market
High tax burden	reduction of net profit of companies
Restriction of subscribers' freedom	the complexity of changing the operator
High levels of concentration and market barriers	abuse of dominant operators by their own market power

Today, market of communications and mobile communications in Ukraine is one of the most competitive and dynamic. By investing in the development of this industry, you can significantly expand not only their capabilities,

but also increase the competitiveness of national economy. The introduction of the 5G service in Ukraine is impossible without investment, so it is necessary to clearly assess the risks of investment activities (Table 9).

**Table 9 – Risks of investment activity of the enterprises of telecommunication sphere**  
(authors' development)

Risk	Examples
1	2
Economic and legal	Bureaucratic obstacles in the development of 5G networks Prohibition to transfer spectrum for use to third parties Changes in the approach to the definition and regulation of universal services, which include broadband access Unpredictable changes in the economy and legislation Suspension of investments from abroad
Socio-political	Changes in the bill "On electronic communications" No license to implement 5G mobile communications Complaints of the population about the quality of services provided
Technological	Lack of frequencies for the introduction of 5G technology Lack of technological and technical neutrality Lack of geographic surveys of networks and data updates once a year Lack of interaction between business and citizens with the regulator in electronic form
Financial	Long payback period Consequences of inflation and stock fluctuations Occurrence of undesirable events in operational, administrative procedures Tax increases Market liquidity risk

The introduction of 5G may require the purchase of a large number of frequencies, the cost of which, due to the low risk of testing mobile capabilities or investments, can pay off in decades. In order for the new technology to successfully focus on the path to consumers, it is necessary to create conditions for improving the country's economy, reducing the tax burden on the industry and its adaptation to European regulatory practices. For this purpose, several areas of investment by telecommunications companies are appropriate:

1. Crown Castle International. In order for all connected devices to work harmoniously, you need to create an infrastructure. Crown Castle International is a REIT that owns, operates and leases cellular towers and other wireless infrastructure. Tower and fiber network operators will be among the first beneficiaries of 5G, as telecommunications operators will improve network coverage and bandwidth. Crown Castle has a 3.5% dividend yield and is traded 22.3 times according to the FFO.

2. Amdocs Limited (DOX). Amdocs is a provider

of customer experience solutions for customers in the telecommunications industry. Amdocs won the most innovative 5G strategy at Lighting Leading Lights 2019, and the company recently acquired TTS Wireless to further expand its 5G capabilities. Amdocs has zero debt and ROE is about 14%. The share has a 5.4% return on shareholders (dividends + share repurchase) and is traded with 18 times the free cash flow.

3. Xilinx, Inc. (XLNX). Xilinx is a leader in programmable chips that position the company well in key growth areas such as artificial intelligence, cloud computing, autonomous driving and the Internet of Things. In recent years, the company has increased R&D spending to position itself as a stable player in 5G communications. The stock fell more than 30% from its highest time in the spring. Management has issued conservative guidelines for next year, which have lowered expectations and created a better entry point for new investors. Operating margin fluctuates around 30%, and stock trading with 22 times free cash flow with a 5.6% return on shareholders.

4. Qualcomm (QCOM). Qualcomm manufactures digital wireless equipment and is the market leader in wireless chips. Qualcomm should benefit from a richer set of 5G phones and pricing, while most connected devices should lead to increased license sales. In early 2020, the company signed a multi-year agreement to supply chipsets with Apple, confirming Qualcomm's leadership in 5G modems. Qualcomm is highly profitable with an operating margin of 35% and a ROIC of 40%. Shares are traded at 16 times the free cash flow with a 5.0% return on shareholders.

5. Verizon Communications (VZ). Verizon is an integrated telecommunications company that now relies heavily on radio communications (70% of revenue). Verizon is focused primarily on 5G to ensure further growth. Multilevel pricing settings should increase the average revenue per user. Moreover, the potential for wireless connectivity for businesses from the development of industrial use is one of Verizon's greatest 5G capabilities.

Investment risks influence the choice of risk management strategy in order to achieve effective investment activities. The era of 5G is just beginning, so now is a great time to invest in 5G with the least risk and high return, without waiting for further development. Despite the fact that Ukraine does not yet have full coverage, the transition to 5G is inevitable. Even if operators delay 5G investments, they will need to increase infrastructure costs to cope with rising traffic. Perhaps that is why Ukraine's telecom industry leaders are behaving much more frugally during this first phase of 5G deployment than in 4G. The BIS Research industry intelligence report "Global 5G Infrastructure Market – Analysis and Forecast 2019-2025" (*5G Infrastructure Market Report, 2020*) shows that global 5G infrastructure market will grow by more than \$ 42 billion by 2025. The market, which is projected to be estimated at \$ 2.55 billion in 2020, is expected to grow at a CAGR of 75.09% over the period. Ukraine risks lagging behind other countries in the deployment of 5G mobile services due to strict regulation and weak investment.

Many elements of 5G technology are built in 4G networks, ie mobile operators can use an evolutionary approach to infrastructure investment. Yes, operators can start by upgrading the capacity of an existing 4G macro network by re-equipping part of their 2G and 3G spectrum or purchasing additional spectrum when they exist. Thus, they can delay investment in 5G by evolving to LTE and LTE-Pro features. Although each technology cycle brings greater opportunities to mobile operators, it also requires greater investment in infrastructure. To get the most out of 5G, they need to understand how the network infrastructure and associated cost base will evolve over the next few years to develop an investment strategy that best meets their unique needs.

In the long run, 5G will be one of key technologies already known as the "Fourth Industrial Revolution". By 2035, the IHS Markit study shows full global economic impact of 5G: goods and services worth about \$ 12.3 trillion, will create about 22 million jobs. The network will add a staggering \$ 3 trillion to global GDP. So, as a long-term investment, 5G technology is one of the safest bets you can make.

Investing in new technologies is an opportunity to become a market leader and realize significant benefits. The choice of investment project is a compromise between trying to make a profit and taking into account its risks in conditions of economic uncertainty. Unjustified risk can lead to loss of capital and market position, and in the worst case to bankruptcy.

The investment activity of telecommunication enterprises is focused on the introduction of technological innovations and the development of ICT, which is provided on the basis of continuous research activities. Financial support of investment activities is due to the accumulation of depreciation and net profit, the implementation of capital accumulation policy and the expansion of the reproduction of the resource base for future economic benefits (*Mashlii, 2017*). We propose to consider the risks of investment activities at two levels (Table 10).

**Table 10 – Characteristics of risk levels of investment activity** (*authors' development*)

<b>Telecommunication level</b>	<b>Local level</b>
price dumping by main share of participants in the telecommunications market of Ukraine until 2018	the need to simultaneously make significant investments both in increasing capacity and in developing the technical level of the communication network
divergent actions of the authorities in legal field of telecommunications of Ukraine	lack of a clear investment policy for capital investment
impossibility of business planning, due to strong variability of macroeconomic indicators, instability of the hryvnia	the dominance of self-financing policy with small amounts of own sources of financial support for investment activities

Depending on the investment risk, you should choose the appropriate management strategy:

1. Risk transfer – assigning responsibility for risk to a third party, such as an insurance company (risk insurance).

2. Risk conservation – the risk still needs to be controlled, but no mitigation measures are in place.

3. Risk reduction – control of risk through actions that reduce the likelihood of risk or minimize its impact before it occurs.

4. Cessation of risk – changes in processes to completely eliminate the risk.

One of the basic problems of investment activity of telecommunication enterprises is the limited financial resources for investment, which is due to low income from service users, main reason for which is low effective demand in Ukraine and fierce price competition, where the tool of survival for a long time was lower prices.

These problems negatively affect the rate of penetration and spread of new generations of ICT in Ukraine compared to developed countries. Ukrainian telecommunications companies are unable to provide sufficient and timely investment. This creates the preconditions for reducing the efficiency of investment activities due to the “failure” effect in the implementation of previously technologically advanced solutions.

The experience of Ukrainian telecommunications companies shows that insufficient investment in the development of operating activities leads to the formation of the so-called technological lag, which threatens very

existence of such enterprises in the market. In order to avoid such a scenario, the implementation of investment activities requires the main emphasis on the choice of investment areas.

The directions of investments accepted for realization should be able to provide not only modernization of a telecommunication network, but also to create a basis of its further perspective development taking into account rapidly growing needs in information transfer. It is important to study the international experience of operating and investment activities of telecommunications companies.

Investment projects should not be aimed at supporting their own current activities and solvency, but at large-scale modernization of the communication network and the development of ICT in general. The formation of financial support for investment activities at their own expense provides the least risk. However, such a policy slows down the pace of business development, as the real potential to raise funds in financial market is not used. This limits the broadening of the basis for future economic benefits.

At the same time, raising funds requires timeliness, because in the event of a technological lag, it will be difficult to provide financing for investment activities at the appropriate level, even with active raising funds, because the pace of technological cycles in telecommunications is constantly growing.

The introduction of the latest technologies by Ukrainian telecommunications companies is somewhat delayed compared to foreign ones.

The world experience of telecommunication companies in the implementation of innovative technologies (*Verkholiak, 2018*) is the basis that will determine the further directions of development of operational activities and, accordingly, the directions and objects of their investment activities:

1. Development of the network in the direction of formation of technical and technological base for further differentiation of services provided by telecommunications companies and Internet of Things by combining different network standards.

2. Introduction of business models that provide targeted investment in network development to create opportunities for the implementation of range scenarios to meet customer demand, which is constantly changing under the influence of ICT development and expanding geographical presence of the telecommunications company.

The formulated directions will be implemented in the strategies of telecommunication enterprises, the segmentation of which depends on digital maturity of the enterprise. Main components of the strategy of telecommunications companies are the geographical scale, the level of digital ambitions and the contrast of growth priorities, maneuverability, organizational transformations to improve interaction with customers, the formation and regulation of their needs, product simplification.

As the telecommunications sector becomes more complex, it is necessary to balance investment directions. On the one hand, selective business models will allow you to implement targeted strategies and support targeted investments. On the other hand, the preparation of range scenarios in demand with certain levels of service and personalization will be crucial, as customer needs have a strong influence in the digital world.

One of the areas related to solving the problems of efficiency of investment management is the use of new tools for the formation of financial security, which have the

availability and ability to determine the economic value of both individual investment decisions and the telecommunications company as a whole.

In addition, there is an urgent need to improve the practice of investment management, which is impossible without further development of the methodological basis for the formation of information and analytical support, organization, analysis, planning and implementation of investment activities, assessing the economic value of investment activities and monitoring.

General structure of investment risk management of telecommunications enterprises should be based on the life cycle of investment projects. Each stage of which is characterized by clear results, their analysis and decision-making for the next stage. The progress of the investment project requires specific methods of work and adequate principles under a systematic approach.

In order to reduce uncertainty and minimize investment risks, it is necessary to exercise control during the implementation of each stage of the project with the possibility of correlation of management decisions after each stage. At each stage of the investment project implementation, it is necessary to implement such processes as initialization, planning, execution and closure, with the condition of control after each process.

Awareness of risks and an open culture for managing them will strengthen discipline and control, explain the difference between risk avoidance and acceptance, improve risk quantification tools, increase risk management responsibilities and facilitate timely detection of changes in the investment risk profile. Investment risk management can be improved by implementing the following proposals:

1. Focus on the goals and participants of the investment project. Investment risk management as a way to manage the expectations of investment project participants requires the company's management to change attention from assessing the actual results (plan, budget, etc.) to more active management of

expectations of all investment project participants. Careful analysis of which should be the first step in the process of investment risk management. The main purpose of all investment risk management measures is to promote the implementation of organizational goals. Investment projects should reflect management's choice of the specific value they want to create for all participants in the investment project. The assessment of investment risks should be aimed at assessing the probability and extent of achieving the objectives.

2. Comprehensive risk assessment. The assessment of investment risks of the enterprise should not be one-sided. The analysis should include issues that may help achieve business goals (opportunities) and those that potentially hinder the achievement of goals (risks). The company's top management must coordinate risk management (events that may occur) and incident management (events that have occurred). Management must be convinced of the need for a proactive, comprehensive approach to both risks and incidents to ensure that business controls are in place.

3. Focus on opportunities. Analysis of investment risks of the enterprise should provide a balanced view of the future. Senior managers should prevent support functions from considering risk mitigation as a critical strategy. It is necessary to move to preventive control and better ways to overcome the risks than just strengthening control. Reviews of investment projects and their plans should be organized to establish the reliability of the existing control system to achieve these goals. Managers should be encouraged to take advantage of risk management experts and internal auditors. The introduction of new business opportunities should be supported by a discussion of the risks associated with predicting often-promised results.

4. Generalization of risks. The management of

a telecommunications company should require a single integrated report, thus expecting that many functions that provide this information will work together. The aim should be to form a common idea of how much the goals of investment activity have been achieved in the previous period and how much they are expected in the next period. Management should insist that those who provide information use modern tools and methods to analyze available business data. They should monitor the effectiveness of the control system and use continuous monitoring to identify irregularities and negative trends in a timely manner and to develop sound measures to minimize investment risks.

5. Detailing of risk management processes. Organizational leaders of the enterprise must insist on the existence of clear rules for the implementation of investment policy, which can actually be implemented in practice. The level of detail of these rules depends on such factors as management philosophy, maturity of business processes, industry practice, legal requirements. The activities of employees at each stage of the investment project must be complementary and clearly coordinated. If the company's management wants the rules to be taken seriously, it must be demonstrated that the violations must be appropriate.

The implementation of these changes will provide a strategic approach to investment risk management of the enterprise by expanding its application to all valuable sources, not just physical and financial. This approach provides effective reduction of investment risk and response to it, emphasizing the reduction of income volatility and minimizing the risk of uncertainty. In compliance with these recommendations, investment activity will be of strategic importance not only for the development of its own economic activity, but also for the development of ICT in Ukraine, its entry into the global information space.

## Conclusions

Practical application of these proposals will help raise the management of investment risks

of the enterprise to a higher level and will improve the ability to manage them in a business environment and the existing uncertainty. Continuous improvements in investment risk management will enable companies to accelerate their response to investment risks, reduce operating losses,

provide integrated responses to interrelated risks, identify risks at their inception stage and improve capital utilization. Moreover, effective investment risk management, consistent with the pace of market changes, protects the reputation and image of enterprises and promotes confidence in the future.

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