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ORGANIZATION AND PROMOTION OF ENTERPRISES INNOVATION ACTIVITY

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The development of innovative activities of enterprises is one of the most important competitive advantages of economic entities. The early phase of the innovation process, when information becomes the dominant economic development, becomes crucial in organizing and stimulating the innovation activity of enterprises, and the means of communicative interaction form the core of the basic innovation development.

The monograph in an accessible form outlines the methodological approaches to the formation of a system of organization and stimulation of the innovation activities of small and medium-sized businesses, aimed at ensuring a rational strategy for their development.

Special attention is paid to the economic mechanisms for stimulating the innovation activity of enterprises, as well as to the forms and methods of increasing innovation activity in small and medium-sized enterprises.

For university students enrolled in the areas of training "Management", "Economics", master's programs, graduate students, applicants and teachers of universities, heads of state and municipal institutions.

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INTRODUCTION

A characteristic feature of a market economy is the growing acuteness of competitive confrontation between business entities. At the same time, one of the main success factors in the struggle for market positions is the innovative activity of the enterprise. World practice shows that success is achieved not by one who is limited to the tasks of increasing the volume of production, but by one who enters the market with a new, at least, modified product. The change of generations of products occurs with a clear acceleration.

Competitive advantages are substantially achieved as a result of the implementation of innovations consisting in the transition of a system from a certain initial state to a resultant one characterized by a higher level of perfection. The requirements of innovative development objectively relate both to the national economy as a whole and to individual business entities or their groups. At the same time, innovation activity is peculiar to any scale and types of production organization. The opportunities for success, however, are different for large, medium or small enterprises. This is due to the need for substantial costs for the implementation of innovative processes. A priori, it is possible to assert the greatest difficulties in small business, the financial possibilities of which are rather limited. This determines the nature of innovation in small business, its process or product orientation.

Assessing the role of small and medium-sized businesses in the national economy, the need and possibility of its innovative development should be established. Innovation processes should increasingly define the general line of the enterprise's long-term development. This implies the importance of research on the growing influence of new technologies on the principles of functioning of business entities in modern conditions. Innovation activity from a private functional task moves to the level of a common strategic goal.

At the same time, development issues for business entities need to be developed and become problematic; it is necessary to analyze the stages of researching new ideas from their appearance to commercial use, the role of each stage. Equally important are questions about the nature of innovation in content and scope in relation to small and medium-sized businesses, the role of the information component in the development of enterprises, the possibility and feasibility of combining the efforts of subjects in the interests of local and large-scale tasks, on the methodological tools of organizing and stimulating the innovation activities of enterprises.

CHAPTER 1. Management of innovative activities of enterprises.

1.1. Organization of the innovation process in small and medium businesses

Small and medium enterprises have to gain a foothold in the market in conditions when the economic situation is constantly becoming tougher and rapidly changing. The outlined main development trends, including the liberalization of the European market, globalization of the economy, increased competition, growing environmental demands, the rapid spread of modern technologies, shortening the life cycle of innovations and products, changing values, etc., threaten the very existence of small and medium-sized enterprises. .

Such enterprises will be able to survive if their organization meets a number of requirements: it must be transparent, clear and mobile, not require large expenses, be market-oriented and customer-oriented, facilitate quick decision-making, stimulate communication and cooperation, give employees freedom of action, help them to show their creative abilities.

In modern organizational concepts, there is a tendency to smoothing structural pyramids with vertical links and transition to a network-like interweaving of horizontal economic relations (which increases flexibility and efficiency) and creating multifunctional jobs, as well as increasing the possibility of cooperation with other organizations, taking into account the situation and inter-company interests. Modern organizations are trying to build with partners simple and not burdened by the bureaucratic difficulties of cooperation, to standardize and automate routine work, to create partially autonomous economic units. Innovative activity plays an increasingly important role - an activity connected with the transformation of ideas (results of research and development, scientific and technical achievements, etc.) into a new or improved product introduced on the market; in the new or improved technological process used in practical activities; in a new approach to social services. This type of activity involves a complex of scientific, technical, organizational, financial and commercial activities, which together lead to innovation. Kinds of innovation activity: 1) instrumental preparation and organization of production; 2) start-up of production and pre-production development; 3) marketing

of new products; 4) acquisition of un-materialized technology from the side (patents, licenses, know-how, trademarks, etc.); 5) the acquisition of materialized technology (machinery and equipment associated with the introduction of innovative products or process); 6) production design required to create the concept, design, manufacture and marketing of new products and processes.

Innovation - the end result of innovation, which was embodied in the form of a new or improved product introduced in the market; The new or improved technological process used in practical activities; in the new approach to social services. Types of innovation: 1) the introduction of a new product, 2) the introduction of a new production method, 3) the creation of a new market, 4) the development of a new source of supply of raw materials or semi-finished products, 5) the reorganization of the management structure. Depending on the type of implementation, they distinguish: 1) product innovations - they cover the introduction of new or improved products; 2) process innovations - the development of new or significantly improved production methods, changes in equipment, organization of production, aimed, as a rule, at the release of new products. Commercialization of innovations is possible only when innovations act as a commodity in the market and there are opportunities for its implementation. In the case when innovations do not take a commodity form (new equipment and technology is created for use in the production cycle of the company), commercialization is only a potential property of innovation and can be implemented in the future. Commercialization of innovation can be difficult due to the lack of efficiency of new equipment and technology in the existing economic conditions.

In accordance with international terminology, innovative products are products that have undergone technological changes of varying degrees. Its composition is determined according to the types of technological innovations. Thus, it covers new (newly implemented) products or those that have undergone improvement, as well as based on new or significantly improved production methods (other innovative products). On this basis, the definition of a new (newly introduced) product corresponds to the concept of a radical product innovation, an improved product - the concept of an incremental product innovation. Other innovative products are the result of the introduction of process innovations.

From the point of view of attribution to a product or technological process, the following are distinguished: radical innovations relat-

ing to fundamentally new products; incremental innovations for significant improvements to existing products and production methods. From the point of view of technological parameters, innovations are subdivided according to the following features: product innovations - the use of new materials, semi-finished products and components, obtaining fundamentally new functions and process innovations - new production technology, a higher level of automation, new production organization methods. According to the type of novelty for the market as part of the innovation, there are: new for the industry in the world, new for the industry in the country; new for this enterprise.

The level of innovation activity of enterprises is defined as the ratio of the number of innovation-active enterprises, i.e. employed in any types of innovation activities, to the total number of enterprises surveyed. Indicators based on measuring innovation results are also used.

Innovations are the result of creative entrepreneurial activity, in which many divisions of a company usually take part and which are also increasingly influenced by external factors (government influence, environmental requirements, cooperation with other institutions, etc.). Innovations have their life cycle, starting with the emergence of a new idea and ending with the introduction and approval of a new product on the market. In this cycle, we can distinguish six typical phases with characteristic for each type of activity, decision-making situations and results.

Phases, as a rule, follow one after the other, however, cases of some parallelism (and thus intersection) of separate phases are not excluded. Thus, evaluations and calculations of economic efficiency should be carried out not only in the phase of searching for ideas, but also in subsequent phases. Between the process of research and development and development in the production of new solutions, on the one hand, and the introduction of the product on the market, on the other, there is a repeated temporary, as well as substantial duplication of certain tasks.

Phase 1: Enterprise Strategy and Innovation

Strategic decisions on innovation can and should be made only in connection with decisions in the area of the overall strategy of the enterprise and the strategic production program. At the same time, they predetermine the initial conditions of decisions regarding the subsequent process. The strategy allows you to pre-set the bar in the

innovative aspirations of the enterprise. The following strategic decisions are decisive for the innovation process:

- choice of market or market segment;
- approval of the applied technology;
- selection of goods and services to be made at the enterprise;
- decision on cooperation in development, production and marketing;
- establishing the volume and speed of the process of updating goods and services.

In this case we are talking about the ideal (theoretical) process. In the practice of entrepreneurship, the opposite is also possible, i.e. Innovation can have a decisive influence on the strategic direction of an enterprise's policy. In small and medium-sized enterprises, it often happens that the only innovation for a long time predetermines the development of the entire enterprise.

2nd phase: the search for ideas and their evaluation

In this phase, searches of creative ideas for problem solutions are carried out. There are three search paths:

- developing new ideas (generating ideas);
- critical review and modification of known problem solutions or specific solutions;
- search for already working general or private solutions (using well-known scientific and technical experience and knowledge, the acquisition of licenses).

When searching for new ideas, small and medium-sized enterprises are especially advised to frequently refer to external sources of information, such as data banks, licensed intermediaries, materials of fairs and research centers.

For in-house generating ideas, you can use a number of methods.

When using intuitive methods, the centerpiece is the spontaneous creative generation of ideas by people who have above-average intelligence and special knowledge. As an example of the search for new ideas, one can cite "brainstorming" methods, contests, expert surveys.

The main place in analytical methods is taken by logically structured procedures. These include the decision tree method, morphological methods, methods of analogies, scenarios, synectics (a method of stimulating creative activity in which special conditions are created that stimulate the advancement of unexpected and non-

stereotypical analogies and associations to the task), as well as heuristic methods.

When searching for new ideas, small and medium-sized enterprises in work are especially advised to frequently refer to external sources of information, for example, data banks, licensed intermediaries, materials of fairs and research centers.

Found ideas should be evaluated: first, the inappropriate ones are discarded, then the most promising are checked with simultaneous identification of their potential market chances. The result of the selection of the best ideas is a proposal for the production of a new product, which sets out a plan for further organizational measures.

Thanks to planning and rational weighing of all possibilities, a significant reduction in uncertainty and, hence, business risks is achieved. However, it is not possible to completely remove the uncertainty. Therefore, the final results, as a rule, deviate from the planned.

When considering whether to apply or not apply planning for an entrepreneur, it's not so much the consequences of uncertainty as the possibility of reducing it and making decisions based on rationally weighted arguments or, in the presence of significant uncertainty, based on one's own intuition.

It is small and medium-sized companies in the initial phase of incremental innovation that differ in the ability to make quick decisions, since passing decisions by instances does not require a lot of time, and the people who make them do it, as a rule, with great readiness. This process is not burdened by endless discussions and debates, as often happens in large enterprises. Usually decisions are made under the personal responsibility of the entrepreneur. The speed of appropriate actions often becomes one of the main competitive advantages of small and medium enterprises.

As the most suitable for the effective implementation of the intra-corporate strategy of stimulating incremental innovation (micro-economic transformations) in the entrepreneurial structures of small and medium businesses, a methodological basis can be proposed a system-constructivist approach. Within the framework of such an approach, an economic entity is represented as a single system consisting of a network of diversely interconnected elements. The mutual influence of the latter leads to the emergence of new qualities of the system, which in no case can be the product of a simple summation of the properties of individual parts.

In the role of structural components in the system-constructivist approach, a variety of event phenomena occurring within one business entity are considered. These can be technological, organizational, financial, legal, environmental, communication actions.

The basis of the system-constructivist approach is the development of a project management methodology. The project management methodology makes it possible to turn a product creation procedure into a well-organized and manageable process. The organization of the correct project management methodology makes it possible to approach any project from a unified position.

Based on the developments of the American Association of Project Managers - Project Manager Institute (PMJ), we can offer a technique that ultimately stimulates product innovation in an enterprise:

- Management of the project domain is the most familiar function for Russian developers. Its components - the development of the concept, the definition of the subject area of the project, the distribution of work, the establishment of accountability, the introduction of a control system, the completion of the project - are partly to one degree or another included in the Russian State Standards, determining the procedure for conducting design and other work.
- Quality management contains managerial (quality assurance) and technical aspects (quality control).
- Time management (time planning in the project, estimation of durations. Scheduling. Time control in the project).
- Cost management (assessment and forecasting of cost, estimates and budget, cost control, use of cost indicators).
- Management of risks.
- Personnel Management.
- Contract management and provision of resources.

Managing each of these functions involves taking into account dozens, and in large projects, hundreds of different factors.

So, within the framework of the system-constructivist approach, incremental innovations play the role of a key tool for the methodical support of intra-firm management. They do not necessarily have to concern only the principal issues of the organization's activities (for example, mastering new production technologies, launching a new product, etc.). As such, there may be less global changes (innovations in personnel policy; new forms of work with clients; additions to the labor remuneration system; other product delivery routes; trans-

formation of the technological process in individual operations, etc.). Both of these groups of modifications in their implementation lead to a change in the state of the business entity or its individual structural elements.

Found ideas are assessed: first, the inappropriate ones are discarded, then the most promising are checked, while their potential market chances are revealed. The result of the selection of the best ideas is a proposal for the production of a new product, which sets out the basis for further activities.

3rd phase: grocery solution

In this phase, the management of the enterprise should make sure that, thanks to the product idea, a real product will be developed, which can be included in the strategic program of the enterprise and promoted to the market. All this requires comprehensive planning, which covers:

- setting goals and objectives for this product;
- drawing up a time schedule for the use of resources required during this phase;
- production planning for the enterprise as a whole;
- sales planning with the calculation of economic efficiency.

Such planning contains all the important tasks that are necessary for further analytical work as part of the research and development process, up to and including the successful introduction of the product to the market. Here are the points of intersection of marketing and production; areas of contiguous innovation, program planning and marketing are established.

4th phase: research and development, technological transfer

In the field of research and development, the following differences are made: fundamental research is not directly related to the product, applied research is aimed at the future application of the results obtained, and in the course of development, the specific market result is of primary interest. As for this sphere in the conditions of small and medium enterprises, their business is limited, as a rule, to developments; research in the proper sense is here in the background.

Based on their target installations, these enterprises can carry out the technical realization of the product through their own devel-

opment (possibly research) or resort to cooperating with other companies. In principle, this problem should be solved taking into account the following points:

- final clarification of the problem and development of a fundamental solution for a new product or new service;
- constructive development of the product up to the creation of a prototype;
- design and pre-production for a new product with the manufacture and testing of a prototype, production equipment and zero series.

And in this phase it is strongly recommended to resort to external sources of knowledge, for example, in such forms:

- exchange of scientific and technical information through participation in conferences, fairs, publication of articles;
- transfer of knowledge due to the hiring of employees with special training, university graduates;
- joint research with other enterprises;
- acquisition of patents and licenses for use in a special project;
- cooperation in development.

The constantly growing influence of modern technologies on the competitiveness of small and medium-sized enterprises requires the targeted use of all available technological transfer opportunities. Even technological leaders that are highly efficient in their field today are rarely able to keep track of all areas of technological progress and implement the latest practical and theoretical achievements accordingly.

5th phase: production mastering

Product development is considered complete when production can begin and all attention is focused on the product in the manufacturing phase. The value of this transitional phase in the innovation process is often underestimated, as a result of which there is a significant loss of time and losses for the enterprise. The following is important in this phase:

- adaptation of the prototype to the production and technical requirements;
- familiarization of the staff involved with technological processes, methods and new areas of tasks;
- start of machinery and equipment up to the established power limits;
- search for new supply channels.

For innovation management in this phase, it is important to ensure the shortest possible time for the deployment of production, in particular with the help of appropriate preparation and planning, as well as flexible implementation of goals. Reducing the time of preparation of production often provides market advantages over competitors, and also allows you to quickly reduce costs and increase enterprise profits.

6th phase: market introduction

The innovation process ends with the introduction of new items to the market. As empirical studies show, the introduction of about 1/3 of new products ends in failure, and among those introduced only about 1/3 yields a profit above the average level, the rest only allow to cover costs.

By introducing goods or services to the market, we mean checking with the help of market tests the competitiveness of products, as well as the intended use of marketing tools. The implementation phase ends with the successful consolidation of the product on the market. As a decisive prerequisite for successful implementation, long-term market preparation for new products should be considered. This can be achieved through appropriate public relations, advertising, consulting clients, as well as through the use of additional marketing tools (for example, pricing). At the same time, correct timing is important, i.e. right choice of the moment of entry of the enterprise on the market with new products.

At large enterprises, before the final introduction of the novelty, the product and the market are tested as far as possible in the earliest possible phase of the innovation project. Using such tests can reduce the risks, but this is associated with high costs. Therefore, both product and market testing is carried out by small and medium-sized enterprises only in rare cases. Most often they rely here on "theoretical" judgments, as well as on the experience and intuition of the participants in the innovation process.

Each phase of the innovation process, along with time, requires fairly large cash. The tasks of innovation management include managing the process in such a way as to make optimal use of the necessary resources. The table shows the approximate distribution of total costs for innovative projects in small and medium-sized enterprises. Studies show that these enterprises strongly underestimate the costs attributable to the last phase - market introduction.

Cost distribution of the innovation process

Phase of the innovation process	Content of work	Share in the total costs of the innovation project, %
Phases 1 – 4	From searching for a product idea to prototyping	53
Phases 5	Mastering in production	26
Phases 6	Market introduction	21

So, in the early phase of the innovation process, the most important component of success is the commercial idea. Finding a good idea will help, on the one hand, creative thinking, and on the other - careful observation of the market, finding its bottleneck. Any commercial idea should stand the test in the market, from the very beginning it should be developed to meet the needs of the existing market. The definition of a commercial idea that emphasizes only a product or service does not meet current market requirements.

After the formulation of goals begins the search for ways to achieve them. Finding different alternatives for preparing solutions is called planning, i.e. mental representation of future actions. This includes future orientation, as well as rational, systematic, systematic and creative work.

In small and medium-sized enterprises, “entrepreneurial flair” (intuition) is called an alternative to planning, which is based on not exactly conscious experience and represents a not completely realizable and not completely verifiable data linkage that has developed in the human brain. It can be assumed that such entrepreneurial experience and data binding based on it really underlie the real production and business experience, which, however, is not perceived rationally and systemically, but is realized uncontrollably and emotionally. Despite this, solutions based on intuition may well meet the production and business interests of the enterprise. But the likelihood of making the right decision with the help of irrational procedures is much lower than with rationally sound, planned action.

Intuitive planning and decision making are often complemented by improvisation, i.e. short-term reaction, which is used not systematically, but on a case-by-case basis, without calculation for the future, mainly in order to adapt to a new state of affairs. Classical planning, on the contrary, is designed for a long time, the time gap between the decision and the action aimed at its execution is large, while active, creative action is allowed.

In the course of planning, in this way, various possibilities and ways of achieving the goal are examined, critically analyzed, discarded and re-designed with the expectation that in the end one can choose the optimal path.

Planning in this sense has nothing to do with planned bureaucracy leading to loss of flexibility. If an entrepreneur is timely prepared for possible changes and has the ability to act in advance (and not only react to events in hindsight), then flexibility even increases. However, despite all the above, inevitably there are "surprises" that can only be dealt with through improvisation. Therefore, improvisation should be considered as an addition to planning, but not as its full-fledged alternative.

Thanks to planning and rational weighing of all possibilities, a significant reduction in uncertainty and, hence, business risks is achieved. Nevertheless, all uncertainty is usually not removed. Therefore, it is quite normal that the final results deviate from the planned ones. And yet, to abandon planning, considering it unrealistic, is impossible.

When considering whether to apply or not apply planning for an entrepreneur, it's not so much the consequences of uncertainty as the possibility of reducing it and making decisions based on rationally weighted arguments or, in the presence of significant uncertainty, based on one's own intuition.

It is small and medium-sized companies that are able to quickly make decisions, since passing decisions by instances does not require much time, and the people who make them do so, as a rule, with great readiness. This process is not burdened by endless discussions and debates, as often happens in large enterprises. Usually decisions are made under the personal responsibility of the entrepreneur. The speed of appropriate actions often becomes one of the main competitive advantages of small and medium enterprises.

Planning as a representation of a future action only becomes important as a management tool when it is controlled to what extent it is possible, under uncertainty, to achieve compliance with the targets and the actual indicators obtained. Control is an analysis that allows you to establish the cause of deviations, to enable managers to take adequate measures to achieve their goals.

Control in the sense of control begins with the observation of ongoing activities. In the process of their implementation, you need to monitor the execution of work and meeting deadlines in order to warn

possible deviations from the very beginning. Thus, when drafting plans, a separate “control” position should be provided for, which establishes the procedure for implementing the necessary measures.

In the course of most events, intermediate or final results of the quantitative, ie, directly measured character. They can be monitored by comparing planned and actual indicators (quantitative control, covering production time, consumption of materials, working capital, time spent, the flow of orders and receipt of documentation, the amount of paper work, and the cost of raw materials and materials and goods and services produced).

However, a simple comparison of planned and actual data does not provide much analytical information and does not allow for obtaining specific instructions about the relevant management measures. Therefore, in any case, an analysis of deviations is necessary, especially if they are outside the allowable limits. Deviations are usually always. Depending on the nature of production and the importance of individual data, the range of tolerances is set more or less wide.

Control is at the same time the completion of the general managerial process and its beginning. Properly executed monitoring is followed by an improvement in the implementation or revision of the objectives and a plan oriented towards them. This may result in confirmation or adjustment of prior decisions.

It is clear that the whole process — goal setting, planning, decision making, execution and control — is a continuous circle of events that repeats over time in more or less short periods. With this tool, small and medium enterprises also receive a compass, which shows the course they should follow.

1.2. The role and place of adaptive management in the strategy of innovative development of enterprises

One of the main indicators of business maturity, not by the time of existence, but by the clarity of the representation of goals, prospects, the degree of awareness of problems and the variety of methods to solve them, is a fact of managing market behavior. That is, that stage of business development, when decisions on major business issues: what to produce, where to buy, whom to sell, at what price, etc. they are not accepted spontaneously and independently, but purposefully and consistently, obeying the goal set, realizing it.

Innovative management covers all strategic and operational tasks of management, planning, organization and control of innovative processes in the enterprise. In a broad sense, it should be understood as change-oriented management. Such management differs in its essence from decision-making processes in other industrial areas, since innovative solutions are not routine, but imply a broad understanding of the problems of the enterprise and the creative abilities of employees.

Recently the corresponding systematics and toolkit of methods are being developed. The main element of this taxonomy is the breakdown of the innovation process into phases, as well as the use of technology to improve its effectiveness. In principle, small and medium-sized enterprises for the successful implementation of innovative projects can take advantage of two alternatives.

1. Enterprises themselves develop innovative technical background and implement the results on the market. This approach is associated with large and constantly growing financial costs, due to scientific and technological progress, and thus with great economic risks. This applies primarily to products of high technical level and great complexity. All this is basically only for large enterprises.

2. Within the framework of a cooperative strategy, small and medium-sized enterprises cooperate with other companies. In this case, cooperation can be carried out at all stages of the innovation process. Cooperation of small and medium-sized enterprises in order to improve competitiveness and reduce risks is becoming more widely used in large-scale innovations. Cooperation can take place in various forms, for example, in the form of a strategic alliance, cooperative research, cooperative production, or cooperative marketing.

The success of innovation management decisively depends on whether the enterprise succeeds, along with the implementation, management and control of the innovation plan, to create stimulating internal and external framework conditions.

Internal framework conditions:

- position, behavior of managers (higher) level;
- personnel policy;
- organization;
- information and communication;
- financing [19].

External framework conditions:

- consultations;
- financial incentives;
- stimulation of transfer;
- infrastructure services;
- loans and credit assistance.

Creating a climate inside the company in which new ideas can emerge and be implemented is much more important than punctual intervention in the innovation process. An organization that is conducive to innovation should support creative processes and provide opportunities for the implementation of positively valued ideas until the successful introduction of new products to the market. It is the field of tension “generation - realization of ideas” that generates the inconsistency in the requirements for the organizational field. There is no organizational form common to all innovation processes. A particular selection of organizational conditions should correspond to one or another phase of the innovation process. The most favorable way for the development of innovative projects is the lack of bureaucratic barriers in the organization and a low degree of centralization, as well as the absence of too narrow specialization. And, on the contrary, at the stage of realization of the idea up to the market stage, more rigid management is considered expedient.

Along with organizational measures as a significant factor in the internal framework conditions, the necessary people are needed for the innovation process. Selection of people who are capable and inclined towards innovation is an important task of innovation management. In addition to their abilities, these people also need an appropriate organizational environment.

To promote the development of innovative capabilities of the company can be a corporate culture that encourages innovative behavior, attaching great importance to such values as innovation and creativity or tolerance for the inevitable failures. Signs of corporate culture, favorable for innovation, are the presence of incentive systems, open communication networks, encouraging teamwork. The climate favorable for innovation is not created by order from above; this requires purposeful behavior, which the entrepreneur adheres to and which is ensured by the appropriate use of resources.

The external framework conditions mainly include the use of the external potential of knowledge in the form of technological transfer and consultation. This gives small and medium-sized enterprises

special chances to more widely apply their very limited research and development and scarce human resources. There are several forms of transfer services:

- issuing and receiving orders from independent and independent research organizations, institutes at universities, etc .;
- collective research and research cooperation;
- use of technology data banks and services of state consulting institutions;
- special literature.

Especially for small and medium-sized enterprises in the framework of state development programs there is some choice of options for supporting innovative projects, for example:

- programs to support small and medium enterprises in the field of technological transfer;
- providing assistance with external innovation advice (material and non-material);
- indirect measures to stimulate research and development (for example, tax cuts);
- direct assistance in certain technological areas;
- assistance in creating innovative enterprises.

As part of targeted innovation management, it is necessary to evaluate various assistance programs and select those that deserve attention and can be appropriate for the conditions of a particular enterprise.

A sensitive issue for small and medium-sized enterprises in the framework of innovation projects - the weak financial base - can be solved on the basis of targeted planning, which is reflected in the relevant financing concept. Small and medium-sized enterprises can use government assistance or resort to forms of financing equity participation. Forefront financial planning with the determination of financial needs for all phases of the innovation process is crucial to ensure that they are provided at the right time.

The greatest difficulties of a marketing nature are faced by firms that are engaged in the introduction and dissemination of innovations, especially those targeted at the targeted user. To a large extent, the difficulties of marketing innovation are associated with incomplete and uncertain information. Meanwhile, the restructuring and modernization of the economy requires the activation of innovative processes. This is impossible without the advanced development of Marketing Services (MS), primarily focused on strategic marketing objectives.

Innovations include some types of products, services, objects and means of labor, in particular cases they can be oriented to the marketing sphere itself. Marketing, as a type of management subsystems in Russian organizations, is undoubtedly an innovation, with all the ensuing consequences.

Suppliers of marketing and innovation can be both internal and external performers. In essence, they are different, but as objects of financing are similar. This "similarity" in the fact that the initial phase of innovation (including marketing) development requires the inclusion of an external source of funding, since it is usually impossible for them not only self-financing, but also self-sufficiency. This can be discussed only when the market for development is formed, and more or less steady demand for it will appear. If such developments are consumed only within the company, then the costs ultimately fall on the cost of its products (services).

- search for shortages. Even in the most saturated markets there is a shortage, niches that are not yet occupied. To identify them, requires detailed knowledge acquired through advanced communication;

- copying the concept. Sometimes you can find a good solution by borrowing in other areas of the business. The one who copies the ideas already limits the risk when establishing his business. Franchising (agreement on the provision of special rights) is based precisely on the concept of copying. At the same time, of course, it is necessary to observe copyrights and other sectoral acts for their protection and defense;

- the embodiment of new ideas in other industries;
- use of technological advances. A necessary condition for this is market research;

- perception of new trends.

The marketing approach is a generally accepted direction in the creation and sale of products and services by companies for various purposes. In countries with developed economies, the marketing field receives much attention. This is due to the fact that the inefficient work of the company's marketing services can lead not only to lost profits, but also to direct losses. Even despite the probabilistic nature of such undesirable events, considerable funds are invested in the development of marketing. In a market economy, firms operate in a competitive environment, a volatile external environment, and in-

complete information about it. Therefore, they are forced to carry out a full-fledged informational monitoring of the external environment and, above all, of the markets for their products and services. Another side of marketing is the effective use of such information, which is associated with the multivariate analysis and justification of management decisions at all levels - operational, current and strategic. As practice shows, in the conditions of transformation of the domestic economy into a market one, marketing is often the most "bottleneck". When an ineffective marketing system becomes unclaimed flexibility and resource capabilities of production, financial and other subsystems of the company.

The problem of effective marketing services is relevant for all participants in the process of promoting products (services) to their end users: merchants (intermediaries), manufacturers and developers, each of whom solves their specific marketing objectives. Analysis of the problem as a whole shows that, for a number of reasons, trading companies are paying the most attention to the development of marketing services, to a lesser extent construction and manufacturing, and even less - innovative. The most developed marketing services for firms engaged in exchange and wholesale trade. The more targeted the product is, the more difficult is the problem of creating an effective marketing service.

In terms of goods, marketing services for consumer products, objects of labor (raw materials and supplies) have received significant development, marketing services for means of labor (machines, equipment) and even weaker ones for technological management tools, especially organizational ones, are less developed. Traditionally, great attention is paid to marketing by firms operating in the markets of credit and insurance services, securities, real estate, etc. In general, from the point of view of development of marketing services, service markets are noticeably inferior to product markets. This is due to such features of services as their targeted nature, intangibility, inalienability from suppliers, inability to create stocks, etc.

In practice, the greatest difficulty is the realization of such a marketing management function as its stimulation. Sources of financing for the development of marketing at the firm level, and for the marketing sphere as a whole, are different, but always limited. If in the first case these are mainly firms themselves, in the second case there is no such certainty, and this is a difficult problem.

An important role in financing marketing in practice is played by various kinds of projects, programs, funds, etc. There is also an in-

intermediate option - the creation of marketing associations of suppliers and customers of marketing products (services): associations, scientific and technological centers, etc. Practice shows that in such associations can be created conditions for the formation and effective use of resources (financial, material, intellectual, etc.). For the marketing industry, in general, the main direction is the promotion and development of the marketing services and products market.

The development of marketing requires it to stimulate. In principle, this is beyond doubt, since everyone agrees that marketing services are the most important management subsystem in a market economy. However, in specific situations it is associated with elements of uncertainty. Firstly, the economic effect is not the result of marketing, but the result of a specific business process that it supports, being part of it. Secondly, the definition of a rational marketing financing strategy for a firm is in itself a difficult marketing task. It is of a latent nature, but the effectiveness of management largely depends on the choice of approach to its formulation and solution.

In most cases, corporate management in medium and small business is at a low level. This is because:

- management personnel lack (or lack of) theoretical knowledge and skills to implement effective management;
- poorly methodical management support. And, as a rule, any first version of the solution paralyzes the entrepreneur's ability to search for alternatives, which makes management insufficiently variable;
- the significance (or cost of the consequences) of an unsuccessful decision that entailed material losses or bankruptcy for a business entity is much higher for itself than for other participants in market relations or the market of a particular region;
- for the management of medium and small businesses, the problems that arise are often unique;
- Most of these entities cannot afford advanced planning and operational management services. In the person of the head, the executive management of the enterprise and its planning authority are often combined. Moreover, the boundary between prospective and current management in them is quite blurred: the same solution may have strategic and operational significance for an entrepreneur;
- structures of medium and small business basically do not have formal procedures for monitoring the external environment, creating forecasts, evaluating and monitoring strategies that are current-

ly being implemented. Therefore, their leaders in the implementation of management functions are often focused on the achievement of short-term results;

- overwhelmingly, medium and small companies are not able to have the technical basis for applying effective management information systems that collect, accumulate and process the necessary data;

- Successful management decisions often do not directly concern the main economic activity, but conditions, communications, motivational influences, perceptions, and other non-material relations.

The above circumstances outline only the contours of some of the problems of practical management that exist at the present stage in medium and small business. The functioning of Russian enterprises in the last 12 years shows that in many of them the economic mechanism has turned out to be unsuitable for a market economy. Moreover, due to many economic and non-economic factors, the structures of medium and small businesses can, at best, pretend to use only separate and isolated elements from the arsenal of achievements of world and Russian management science and practice, and at worst - act by trial and error. Hence the need for the development of new methods and technologies for managing economic systems at various levels.

The most important quality for a business entity in terms of effective management in a changing external and internal environment is adaptability to them. In this case, the level of efficiency in the application of a particular management method is naturally determined by the degree of adaptation to the circumstances.

In adapting business to constant transformations, the role of management decision variability is great, i.e. multiple choices during their adoption. Moreover, a specific control action is implemented on the basis of the totality of changes that are formed in the state of individual elements of the economic entity and are caused by the manifestations of external and internal factors. This minimizes the negative consequences of adapting to a changing environment and emerging new requirements. This view is called change management.

The larger the business unit (its organizational structure is branched out), the more complex and less unambiguous the relationship is about the implementation of the transformations that make up the content of managerial influences. Not only the ambiguity and

complexity of their assessment, but also the difficulty in predictability, their cumulative dependence on various factors and actions is increasing. It is obvious that such circumstances appear more moderately at medium and small enterprises than at large ones. Therefore, small and medium business is a more acceptable area for using the concept of change management.

The analysis of modern management methods makes it possible to consider the system-constructivist approach as the methodological basis most appropriate for the effective implementation of intra-corporate changes (microeconomic transformations) in the business structures of medium and small businesses. Within its framework, an economic entity is represented as a single system consisting of a network of diversely interconnected elements. The mutual influence of the latter leads to the emergence of new qualities of the system, which in no case can be the product of a simple summation of the properties of individual parts.

In the role of structural components in the system-constructivist approach, a variety of event phenomena occurring within one business entity are considered. These can be technological, organizational, financial, legal, environmental, communication actions. In the most general form, they can be divided into tangible and intangible components. The first covers those structural parts and elements that carry out or identify the materialization of economic activity within an enterprise or an individual business. The latter cover various causal (motivational) relationships.

So, within the framework of the system-constructivist approach, changes play the role of a key instrumental component of the methodical support of the in-house management. They do not necessarily have to concern only the principal issues of the organization's activities (for example, mastering new production technologies, launching a new product, etc.). As such, there may be less global changes (innovations in personnel policy; new forms of work with clients; additions to the employee pay system; changes in the layout of the sales area; other product delivery routes; transformation of the technological process in individual operations, etc.) . Both of these groups of modifications in their implementation lead to a change in the state of the business entity or its individual structural elements.

Most control methods include various model components, methodical or instrumental in nature. They are subject to various requirements, in particular, the maximum adequacy of the instrumental

components that make up the practical support of a particular method, its theoretical assumptions and the underlying methodological substantiations. Another important requirement is the ease of presentation and accessibility of use in practical management. This imperative is especially relevant for small and medium businesses.

As a basis for analyzing the state of certain entities of medium and small businesses in the framework of the system-constructivist approach, we take the functional and technological structure. As already mentioned, it is a complex system consisting of a variety of structural elements of a material and non-material nature that are heterogeneous in content, which in turn can be viewed with varying degrees of detail as links, flows, and connections between them.

The links should be considered any operations, procedures, events or individual actions aimed at achieving a certain result, entailing specific changes in the functional and technological structure of the business, and consequently, in its state. Any interaction of links, both among themselves within a given structure, and with links of other parallel structures outside the business entity is carried out by means of and with the help of appropriate structure-determining flows and connections.

The gradual formation of ideas about the structure of business from one level to another makes this process feasible for virtually any entrepreneur (even with minimal training in this area) and allows him to take into account in detail the substantive content of his business.

The basis of the content of alternatives to management decisions aimed at achieving a particular goal was made up of various influences leading to changes in the state of a particular element of the business structure, or rather changes in the parameters determining this state [2].

Strategic management is based on the choice of the so-called "core competencies" of the organization. This term in the literature denotes a set of skills and technologies, a lot of unsystematically accumulated organization of knowledge and experience, which become the basis of successful competition.

Competence in general is a special property of an innovative resource, containing the experience, knowledge and skills of organizing and managing resources and business processes to achieve their goals. Competence is not a derivative of market demand. The properties of key competence are noted by Prahalad and Hamel [32]: "Key competence has three main properties: first, it gives potential access to

a wide range of markets, second, it adds significant consumer value to the final product perceived by the buyer, thirdly, it takes a lot of cost and effort to copy a competitor's core competency. " Proceeding from this, the key competence of industrial organizations in an innovation-type economy should be considered as research and development of an enterprise in combination with a mass of organization's unsystematic accumulated experience in innovation, which becomes the basis of successful competition. Or in other words, the key competence of an organization in a globalized economy is an information resource containing the experience, knowledge and skills of organizing and managing resources and the business process of developing new products and services to increase the level of competitiveness [13].

To achieve the objectives of the organization, core competency is subject to strategic management. The purpose of the strategic analysis of key competencies is to propose a new base for the formation of a strategic plan, the use of which leads to the emergence (maintenance) of a sustainable competitive advantage, as well as assess the potential of this plan from the standpoint of the financial condition and capabilities of the organization. Having identified research and development as the key competence, such a plan can be called a strategic plan for the innovative development of an organization [12].

The formation of a strategic plan for innovation development is based on strengthening core competencies and abilities and competencies linked to it using internal methods (human resources, material and technical base, attracting financial resources, existing developments, etc.) and external development (strategic alliances , mergers and acquisitions, partnerships) [31].

Recently, strategic planning is increasingly being compared with innovative planning. In particular, when making decisions regarding an R & D strategy, it is necessary to take into account such strategic factors as external environment analysis, resource allocation and corporate strategy. Researchers believe that one relationship is not enough here, interpenetration is necessary [15]. After all, any strategy is change, and any change aimed at improving any process is innovation. The point is that at the head of each strategic plan was the task of developing and developing a product innovation and / or mastering new process technologies.

Such interpenetration of strategic and innovative management can lead to the full integration of two types of management, one of

which relates to general management (strategic), and the other to functional (innovative). The basis is the fact that innovations more and more define the general line of perspective development of an enterprise. In this regard, it is necessary to study the growing influence of new technologies on the principles of the functioning of organizations in new conditions. It is necessary to remove innovation management from the functional to the corporate level. In the context of increasing the role of new technologies as a factor of economic growth and development and the identification of research and development as a key competence of organizations, innovation should become a common strategic goal, rather than a private functional task [20].

Under existing conditions, it is difficult to understand where to send resources first — to technology or to the development of the next generation of a product. There are two strategies for achieving competitive advantage: leadership through product features (focused differentiation) and cost leadership. Focused differentiation is achieved primarily through innovation in the product. Cost leadership is ensured by better operational efficiency, i.e. technological innovation [36].

The choice is very individual. In general, it can be said that for vertically integrated companies, a cost leadership strategy is often preferred. First, this is due to cost savings in the transfer between redistribution. Secondly, completely different innovations are required for the development of the product of each division, and if any of the divisions is not the product leader in its market, then the vertically integrated company as a whole will not be the leader.

For diversified or monoproduct enterprises, to which small and medium enterprises belong, it is much more difficult to make a choice.

Since this should be a choice of several options for the further development of Russian enterprises. There are three main types of companies in the world:

- companies that carry out a full cycle (or most of it) of the development and production of a product;

- companies that are mainly engaged in engineering, and if they have production, they are only experienced. Production of all parts is ordered by subcontracting (outsourcing);

- Companies that practically do not engage in engineering, but with advanced equipment, provide services for the production of

products for someone else's engineering and, if necessary, under a foreign trademark.

Accordingly, the development options for domestic enterprises are derived from this:

- Develop independently and production, and engineering. Most Russian companies follow this path. Accordingly, there is a serious prerequisite for the consolidation of Russian business, primarily through mergers that provide horizontal integration, which ultimately provides an increase in concentration on a single product. Various alliances with foreign companies are also possible.

- Give up most of our own production and focus on product engineering.

- Refusal of own engineering and transition to a position of the manufacturer.

In this case, the product of the enterprise is a service for the manufacture of any product. Accordingly, technological innovation, i.e. innovations in technology upgrades are at the same time innovations in the product of the manufacturing company [11].

From the point of view of the long-term perspective of the innovation development of small and medium-sized enterprises, the most interesting is the role of an engineering company or an enterprise combining both production and engineering. Owning engineering provides greater control over value added. However, the overwhelming majority of Russian enterprises have too few resources and too few prospects to independently develop their engineering to the world level.

One of the moments that bothers us a lot is to bind to production capacity. For many Russian factories, the priority is capacity utilization. A company should not be tied to its facilities. The main value of the company - the brand. Everything else can either be produced by ourselves, or purchased through outsourcing (cooperation).

For the majority of Russian enterprises, the need to invest in capacity modernization constrains the innovative potential of product development. As a result, after a few years, when Russian and world prices level off, many domestic companies will not be able to implement either a focused differentiation strategy or a cost leadership strategy.

- For some enterprises, the solution will be transformation either exclusively into an engineering company or into a manufacturing company.

– Others will become part of transnational companies that in the process of globalization will occupy the Russian market

– Some businesses will go bankrupt.

To implement an innovation idea, one of the key factors, if not the most important, is the availability of financial resources. It is the lack of financial resources that hinders the realization of the innovation potential. In the end, the development is not the most interesting ideas, and those ideas that can be financed.

The reason for this situation is that the source of funding for long-term innovation programs for many enterprises is their own funds. Some deliberately do not resort to credit resources, fearing that they will be bought in this way. Many others want to attract a long-term loan, but this is very rarely possible. Enterprises are forced to look for alternative sources of financing, such as joint development, financing the development of a product by its buyer.

Russian enterprises have not yet realized the fundamental importance of innovation as a guarantee of the company's existence in the future.

– For many companies, the source of innovation is their own funds, because to attract long-term loans is difficult. Own funds are not enough and the quality of the innovation process is deteriorating.

– Insufficient use of alternative sources of financing for development. For example, joint development, financing the development of the final product by the buyer, etc.

– Russian enterprises are tens and hundreds of times less foreign competitors. Accordingly, by definition, they will not be able to invest in R & D funds comparable to funds invested by American or Japanese companies.

1.3. Features of innovative processes of small and medium-sized businesses

In the Soviet Union, most innovative developments were carried out in industry research institutes. In the early 1990s, government funding for many institutions ceased. And the main part of enterprises by that time were not yet mature enough to order the development of specialized organizations. As a result, most of the research institutes were left without funding and largely lost their scientific potential.

Now, when there is an awareness of the importance of innovative developments, it has become clear that in some positions the

gap with foreign science is quite strong. Overcome it in different ways. They buy designs, or entire design organizations, are engaged in copying, cooperating with efficient institutions, and re-creating factory laboratories closed ten years ago.

Buying a license, the company as gives "food for the brain" to its designers and technologists. Factory designers have the opportunity to see the level of development of world engineering and compare this with the developments that exist in the enterprise. This will determine the place of the company in the global market and possibly teach something new, promote the thinking of designers and technologists.

Yet companies today are more concerned with applied developments, i.e. so that you can put on the conveyor tomorrow. Fundamental science is not yet in demand by business, and government funding allows it to only survive, but not develop.

Transfer (transfer) of technology - a tool for the implementation of innovations. It means the application of knowledge to perform a specific technical task. Until recently, in our country, the successful implementation of R & D was perceived as the result of an automatic process, starting with scientific research and passing through the stages of development, financing, production, marketing and subsequent dissemination. At the same time, managers fought to improve the performance of their stage, not particularly striving to understand the relationship between the various stages of technology implementation in general. Not too much attention was paid to establishing links between a multitude of organizations involved in promoting the results of scientific research into economic practice. However, the successful commercialization of science, as the experience of advanced countries shows, is possible only with the direct interaction of scientific laboratories and the market with the participation of the state. It is the lack of understanding of the features of the organizational and economic nature of the transfer of knowledge and technology is the main obstacle to innovation.

The main reasons for the low efficiency of technology transfer in Russia are as follows:

- development scientists, as a rule, do not know the market and hardly even remotely imagine how the scientific results obtained by them can be transformed into a market product;
- The economic agents of the market (company managers) are practically unfamiliar with the nature of modern science, the structure

and the most important areas of its activity, breakthrough achievements. They can not always judge the reliability of scientific results proposed for implementation, and their technological efficiency;

- The state (represented by politicians and technical experts), called upon to set the rules for technology transfer, poorly imagines the real life atmosphere of scientific laboratories, the conditions for research and technology development, the possible consequences of adopting adopted legal provisions for the production of scientific knowledge and its commercialization.

The defining feature of the transfer of research results for their development is the creation and development of commercial forms of interaction between science and production. An analysis of the experience of leading foreign firms shows that the market infrastructure for technology transfer has a rather complex institutional structure. It includes:

- university laboratory;
- non-profit venture fund;
- a venture capital firm financing the start of production;
- a small innovative company that receives the bulk of its profits (or quickly collapsing) in the first years of the appearance of a new product on the market;
- a large company producing the corresponding product in mass quantities.

To implement a specific project, a small innovative company is created that directly interacts with the research laboratory. It receives the main profit due to exclusive access to scientific knowledge through the introduction of new products or technologies that have no analogues. At the same time, the main requirement of a venture capital firm for a project proposed to it is the mass demand for a high-tech product being created with a relatively low cost of its production.

Depending on the phase of the life cycle of the manufactured product (technology), the following types of specified innovation structures are distinguished - explorers, patients, violators and commuters.

Exporters (pioneers) specialize in creating new or radical transformations of old market segments. They are connected at the initial stages of production and are engaged in the promotion of innovations in the markets. Moreover, when an attractive novelty for the market has already been created and the delay in replicating it threatens with the appearance of copies or analogues, such a company faces the

problem of production volume. To solve it, she enters into an alliance with a large company, since she cannot replicate proven innovations on her own. An alliance with a powerful structure (including under the condition of absorption and subordination) makes it possible to achieve favorable conditions and even preserve a certain autonomy.

Patient firms operate in a narrow segment of the market and meet the needs formed under the influence of fashion, advertising and other factors. They act on the stages of growth of output. Requirements for the quality and volume of products they have associated with the problem of winning the market. There is a need to make decisions on the conduct or termination of development, expediency of the sale or purchase of a license, etc. At the same time, there is the likelihood of making the wrong decision, leading to a crisis. In such firms, it is advisable to be a permanent innovation manager, designed to protect their operation from this type of risk.

Violent firms operate in the sphere of large standard business and belong to structures with a "power" strategy. They have large capital and are characterized by a high level of technology mastering. Such firms are engaged in large-scale and mass production for a wide range of consumers who make average demands for quality and are satisfied with the average price level. They have to make decisions about the timing of the start of production (including the acquisition of licenses) and its withdrawal from production; investment and expansion of production; replacement of the fleet of machinery and equipment.

Commutators are engaged in medium and small business, focused on the satisfaction of national investors and act, as a rule, at the stage of falling output. They are also required to make decisions about the timely production of products for production, as well as the degree of manufacturability of products manufactured by firms-tapes, the feasibility of making changes to them according to the requirements of specific consumers. Their innovative manager should be well versed in the specifics of the buyer of the goods, the current situation on the market, accurately, promptly and reliably predict possible crises.

From what has been said it is clear that success in the technology transfer infrastructure is determined by the division of functions. The university laboratory is developing new knowledge. Unprofitable venture capital fund studies the market. A venture capital firm takes on financial risk. A small innovative company demonstrates the pos-

sibility of profitable production in a small series. A large company with large-scale production is included in the business if the product has really conquered the market and the need for it becomes mass. Without such an institutional separation, the success of technology transfer will be very problematic. So, it is much more convenient to study the market without incurring financial risks, and in turn it is better to separate them from the establishment of small-scale production. This is due to the fact that these activities are significantly different in nature, and the specialization in each of them allows the transfer of technology along the chain much more efficiently.

We also note that the state also plays an important role in the formation and functioning of the market infrastructure for technology transfer, primarily through lowering transaction costs. To this end, it is necessary to introduce tax breaks for subjects of interaction in the course of technology transfer. Otherwise, in the conditions of large transaction costs, everything returns to the vertical integration of processes, with the inevitable loss of those benefits that are achieved through the high specialization of participants and minimization of bureaucratic procedures.

The difficulties in commercializing the existing considerable scientific potential of Russia are primarily due to the absence of the first three links in the technology transfer infrastructure - non-commercial venture funds, venture capital firms and small innovative high-tech firms.

The state should be involved in the formation of an appropriate institutional environment, acting according to a carefully developed program and striving for clearly defined goals. Not to do in this business and without the large corporations possessing the considerable free capital without which creation of venture firms is impossible.

CHAPTER 2. Analysis of the current state and prospects for the development of innovative activities of enterprises

2.1. Foreign experience in the development of innovative activities of small and medium-sized businesses

Only international integration and economic globalization, primarily in the areas of informatization and the use of new technologies, provide real prospects for the transformation of small and medium-sized businesses into an effective sector of the national and global economy.

Small business is most effective in certain industries and in the field of scientific services. The practice of developed countries shows that it is especially necessary not in trade and public catering, but in science, scientific services and production.

At the same time, the use of Internet systems, global information networks, the emergence of electronic, including international, business makes one of the strategic objectives of small business a) expanding the scope of its international relations, including cooperative ones, b) consistent and operational translation of its activities to international standards and rules regarding the use of intellectual property.

As regards the statement that the activity of the middle class creates conditions for the least conflicting development of economic integration and globalization, analysis of factors that make these objective processes more adequate to their essence and, in particular, more successfully resolve contradictions, speaks in his favor. First, consistent measures to revitalize small businesses and strengthen the position of the middle class are one of the most important means of countering monopolization in national production, merging large economic and state structures into oligarchic and, as a rule, nationalist groups that impede the normal flow of many processes in the economy, including integration and globalization. Secondly, problems such as increased unemployment due to increased market competition, uncontrolled migration of the working-age population (in Russia, defined by a figure of several million people, mostly citizens of neigh-

boring countries) can be successfully resolved only with the active development of small business.

In the countries - members of the Eurasian Economic Community, the share of small business in the production of GDP is on average 50%, a relatively small part of the working-age population is employed (in Russia - approximately 21.9%). In addition, the majority of small firms operate in the field of trade, public catering, and not science and production.

Issues of small business is paid insufficient attention. The system of material and moral incentives is not sufficiently developed in order to support it. At the same time, the level of bureaucratization and related corruption in the activities of state bodies is very high. This contributes to the preservation of the "shadow" business, whose share in the field of small business reaches 50% of its total turnover.

Given the importance of small business in a modern globalizing economy, primarily to accelerate the process of technological modernization of production and implementation of e-commerce, the scientific concept of innovative development, which would determine a long-term strategy in this area of development, is urgently needed.

Modern projects of concepts of state policy of small business development are not complex. They essentially do not pay attention to the integration and globalization aspects of such development. Questions about the organization of international cooperation of small businesses, about its role in accelerating scientific and technological progress, and actually reduced to the question of some harmonization of the national legislation on small business. Accordingly, there is no comprehensive strategy for the innovative development of the national economy as a whole.

Already today, it is necessary to know exactly what needs to be done in the economy of the integration community in a competitive environment, which is sharpening and changing with the development of information production. A conceptual approach to the problem of small business implies an awareness of the situation in which the progress of international regional integration and the successful solution of tasks to increase the competitiveness of a country's economy determine not only and not so much intergovernmental agreements and the creation of own TNCs and financial-industrial groups, but small and medium-sized firms, focused on the national and common (integration) markets. TNCs and international FIGs as independent subjects of international economic relations tend to go beyond the regional integration space. Their interests are not limited to

the interests of integration. The very scale of their activity orients towards a more active participation in the development of global joint ventures, at strengthening their positions in global markets (energy, transport, etc.), at solving problems not only regional, but also global competition.

Small business is most interested in the formation of a common market. Deepening regional integration, respectively, directly depends on the integration of small and medium-sized enterprises, on the creation and development of integrated corporations. Such interaction is especially necessary for the creation in the country of innovation and technology centers, technology parks with the participation of large and small firms, for use in the development of small innovative organizations for international leasing of equipment and devices, for the development of their international cooperative ties and the exchange of innovative experience.

An integrated corporation is a set of legally and economically independent firms, enterprises and organizations that have sustainable technological, informational and cooperative ties, as well as a logistics center that coordinates the activities of the corporation members through not only market (contractual), but also organizational planning methods. Integrated corporations vary:

- according to the forms of economic relations: 1) holding companies (integration based on property relations); 2) business networks (contract associations); 3) strategic alliances (management of joint projects by proxy); - by the nature of cooperation: 1) vertically integrated (concerns, etc.); 2) horizontally integrated (combines, etc.); 3) conglomerates (informational rather than technological communications prevail);

- according to organizational and legal forms: 1) joint-stock companies (as a rule, open); 2) state organizations (if there is a public administration authority whose instructions are mandatory for all participants of the corporation); 3) associations that do not require registration as a legal entity and the formation of a total share capital divided into shares;

- by scope of activity: 1) regional; 2) national; 3) transnational corporations;

- on the status of the integration center: 1) financial and industrial (headed by a bank, investment or other financial institution); 2) production (integration center - a production organization); 3) scientific and technical (led by a design bureau or other scientific and

technical organization); 4) commercial and industrial (led by a trading company or distribution center).

The main advantages of integrated corporations include: expanding the strategic planning horizon (from microeconomic to mesoeconomic level, including global), concentration of resources in high-performance large-scale projects, reducing transaction costs, combining market competition with systematically organized cooperation of legally independent firms. Integrated corporations in Russia on this basis recreate the middle management, destroyed in the late-90s. Integrated corporations can be created in three ways: 1) acquisitions of small companies that occupy a profitable market segment with specific technological, managerial and commercial knowledge; 2) the creation of technological networks consisting of independent companies that use the basic technology of the head, or working on its orders; 3) the formation of consumer networks, including the company - the manufacturer of the final product, its dealers and regular customers.

Technological networks allow you to distribute the risks of investment, provide external savings through the introduction of common technological standards, joint research and development, narrow specialization and the elimination of unnecessary duplication. An integrated corporation performs the following main functions:

- management of technological chains, including suppliers and developers participating in a single research and production cycle, manufacturers of final products, marketing structures (trading houses, dealers, agents, consignees, etc.);
- management of customer relations, including marketing research, constant recording of changing requests, monitoring the implementation of orders; after-sales service, disposal of old products, etc.;
- collection and analysis of external macroeconomic, foreign economic and marketing information needed to develop and adjust the strategy of business groups;
- formation of an effective system of consolidated accounting, tax and management accounting, including not only cost, but also natural indicators (costs of materials, energy, working time, deadlines for completing tasks, production and warehouse stocks, sales deadlines) for each product line, market segment, business process, ordering, etc.;
- the transformation of the structural units of the company into centers of financial responsibility - profit centers (units that implement

the final products of the company), costs and revenues (procurement, auxiliary and service shops and sites), investments;

- integration of all stages of production, distribution, sales and service (up to the end user) regardless of the location of the participants in the technological chain;

- operational accounting of customer requests, reducing the time and improving the reliability of execution of orders;

- selection on a competitive and auction basis of the most expedient suppliers outside the integrated corporation, synchronization of delivery times, which allows sharply reducing stocks and expenses.

In the modern economy, joint planning and close coordination of the activities of the company and its independent (in terms of property relations) contractors and suppliers are necessary. This is one of the main reasons for the formation of integrated corporations.

Changes in technology, ways of communication, education, culture, value orientations have a particular impact on the strategy of integrated corporations, which are most dependent on exports and imports.

The following major changes in corporate management can be distinguished: - new factors of competitiveness: the ability to anticipate changes and the emergence of new competitors in the global market, mobility, the development of alliances and partnership with competitors, accurate adherence to contracts, taking into account the individual characteristics of customers; - a new corporate culture, taking into account human capital, the ability of staff to create new information as the main competitive advantage, the transition from command management in hierarchical structures to network-type partnership relations designed for intelligent, knowledgeable workers who are highly selective when choosing a job and are in the process of continuous intensive training; - New remote network management, which allows you to manage subsidiaries, branches, offices in any region of the world via the Internet, quickly changing the structure of your business in accordance with changing markets; - the transition from pyramid to distribution network structures, allowing to combine centralized financial management, basic innovations and investments from a strategic center with a wide independence of business units;

- the emergence of a new type of consumer with high selectivity, awareness of alternative suppliers around the world, the ability to own marketing search, special requirements for the quality of goods and services;

– a new competition environment, a transition from regional and national to a very saturated global market.

The recognition of integrated associations as the main subject of governance in the global economy requires significant changes in economic policy and its legal support, including in certain regions of the Russian Federation. Needs a review of antitrust policy. A corporation that dominates the national market cannot establish monopoly prices in many industries due to import competition. It is necessary to pass the law on holdings as soon as possible, allowing them to be created not only on the basis of ownership of a controlling stake, but also on the basis of the parent company's rights to know-how and other intellectual property. In this case, the binding nature of its instructions to subsidiaries on strategic issues is enshrined in their charters or ensured by cross-ownership of shares. One of the priority research topics in foreign economic literature has become the social aspects of corporate activity. In domestic science, the analysis of an enterprise as a social unit of society also occupied a prominent place in the 1920s, and then in the 1960s – 1980s. Twentieth century. However, in the context of the socio-economic crisis of the 90s. social planning in enterprises ceased. Meanwhile, a corporation is a social institution whose behavior, along with competitive factors, is greatly influenced by the corporation's intrinsic system of values and standards, agency relations between owners, managers, personnel, partners and customers, as well as relations with authorities. "Social capital" of a corporation is a set of means for increasing its competitiveness on the basis of the development and effective use of human capital, a system for managing knowledge and relations between participants of a corporation. The concept of corporate social policy should be based on such categories as corporate culture and, knowledge management, human and innovative capital, social planning. The goal of corporate social policy is to strengthen mutual trust between internal (managers, administration, employees) and external (investors, creditors, partners, customers, authorities, public organizations) participants of the corporation, the development of industrial democracy, the formation of a social and innovation network, which should become the foundation of the national innovation system. There is an institutional concept of social responsibility of integrated corporations to society in the regions in which they operate. This concept is based on the provisions of the socio-ecological-economic theory, according to which the economy is a subsystem of society,

and the economic effect is not an end in itself, but a means of ensuring sustainable social development. The development of corporate social responsibility is objectively necessary in a globalizing economy and the formation of a post-industrial information society. The main components of corporate social responsibility include: - the formation of a labor market that ensures effective employment of the population of the region based on an institutional concept that takes into account the specifics of national institutions and labor markets, the ratio of open and shadow markets, primary and secondary employment, etc .; - the provision of social services to employees of the corporation, their families, retirees and other categories of the population on the basis of a rational separation of the functions of social infrastructure management with local authorities and the organization of charity through non-profit organizations; - participation in the formation of the regional and national elite, favorable business climate - a set of legal, organizational and socio-psychological conditions, business ethics, determining the possibility of profitable investment of capital at an acceptable level of risk.

Social responsibility of integrated corporations as a responsibility for the sustainable development of society implies responsibility for the preservation of the environment, the development of the innovative potential of the region and the country as a whole.

2.2. The system of organization and promotion of innovative activities of Russian enterprises

Small and medium business is the basis of the economy of any country. Russia in this sense is no exception. Therefore, the statistics of small and medium-sized enterprises allow us to determine the limits of applicability of the research methodology for stimulating the innovative activity of small and medium-sized businesses [22].

In most developed countries, the system of statistical accounting is based on the possibility of obtaining the results of the activities of economic entities, depending on the size of these entities. A flexible way of organizing statistical observation allows you to monitor each size group, develop a differentiated policy and monitor the effectiveness of decisions made for any of the size groups. The concept of small and medium enterprises (SMEs) is widely used, and this category includes both legal entities and individual entrepreneurs.

According to the results of the study, which was funded by the United States Agency for International Development: the contribution of enterprises employing up to 250 people in relation to the corresponding total value for all Russian enterprises is [32]:

Share in the total number of enterprises	93%
The share of SMEs in total employment	45%
Market share (share of SMEs in total revenue)	39%

Another common indicator of the development of the SME sector is the number of enterprises employing up to 250 per 1000 economically active population. In Russia, the figure was 113 enterprises per 1000 people from among the economically active population.

When considering the sector of small and medium-sized enterprises with the number of employees up to 500 people, the figures will increase slightly.

Share in the total number of enterprises	96%
The share of SMEs in total employment	58%
Market share (share of SMEs in total revenue)	57%

And the density will already be 116 small and medium-sized enterprises per 1000 people from among the economically active population.

The small and medium-sized business sector is considered in accordance with international statistical practice, which involves the inclusion of both legal entities and individual entrepreneurs. Since the definition of medium business in the Russian legislation is absent, it is advisable to use the differentiation by the number of employees. 250 and 500 people were taken as the upper limit. That is, two groups of medium-sized enterprises are being formed: with up to 250 and 500 employees. Russian legislation and state statistics in terms of size are the following categories of business entities:

Small businesses;

Large and medium enterprises.

The range of small businesses includes:

Individual Entrepreneurship (IP);

Peasant (farmer) farms (K (f) X);

Small businesses - legal entities (MP) that meet the following two requirements:

- in the authorized capital, the share of state ownership of the Russian Federation and subjects of the Russian Federation, municipal property, public and religious organizations, charitable and other funds does not exceed 25%. The share belonging to one or several legal entities, which are not subjects of small business, also should not exceed 25%;

- The average number of employees does not exceed the following limit levels:

- in industry, construction and transport - 100 people;
- in agriculture and science and technology - 60 people;
- in retail and consumer services - 30 people;
- in other industries and in the implementation of other activities

- 50 people [3].

In the formation of information files in the context of economic entities, statistical bodies follow statutory criteria. In this connection, the composition of medium and large enterprises may include enterprises with up to 100 employees, which, by the criterion of the structure of the share capital, do not belong to small enterprises. As a constraint complicating the structural analysis of the SME sector, it should also be mentioned that the data in the context of size groups are not developed by Russian state statistics. At the same time, such an approach is quite widely distributed internationally and allows to allocate not only small but also the smallest enterprises, to conduct a comparative analysis with other countries, freely manipulating the upper boundaries of the number of employees when assigning enterprises to a size group [4].

The sector of small and medium enterprises in the Russian economy is represented by the following economic subjects [32]:

1. Subjects of small business:
 - 1.1 small enterprises - legal entities;
 - 1.2. entrepreneurs without a legal entity;
 - 1.3 peasant (farm) economy.
2. Subjects of medium business.

In forming a circle of medium-sized enterprises, the only criterion used was the number of employees. Moreover, since European statistics include medium-sized enterprises with up to 250 people, and up to 500 people in the US, the project for possible international comparisons and comparisons provided an assessment of the scale of activities of Russian medium-sized enterprises with as many as 250 (according to European criterion), and up to 500 (according to the US census) people.

Currently, there are 8562 thousand business entities operating in Russia. The share of SMEs in the European standard for the allocation of joint ventures accounts for 93%, which in absolute terms is 8 million enterprises and individual entrepreneurs (Figure 1). These figures increase somewhat when accounting for the SME sector according to the criteria applicable in the United States, when the number of people employed in medium-sized enterprises increases to 500 people. In this case, the SME sector includes 96% of all economic entities and 8,240 thousand enterprises and individual entrepreneurs fall within its borders (Figure 2).

The scale of the Russian SME sector is quite comparable to its size in Europe and the USA, where it accounts for 99.8% of enterprises.

Diagram 1: The number of SMEs in the context of federal districts, thousand (by the European criterion by the number of employees in the joint venture) [32]

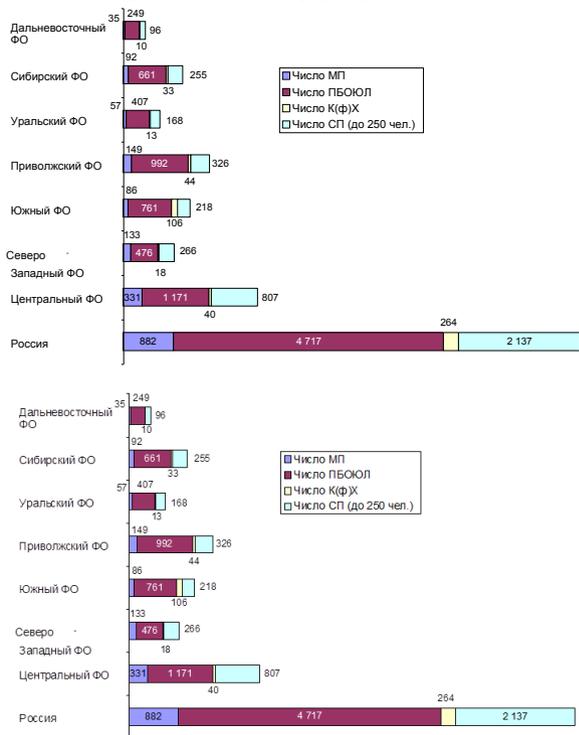
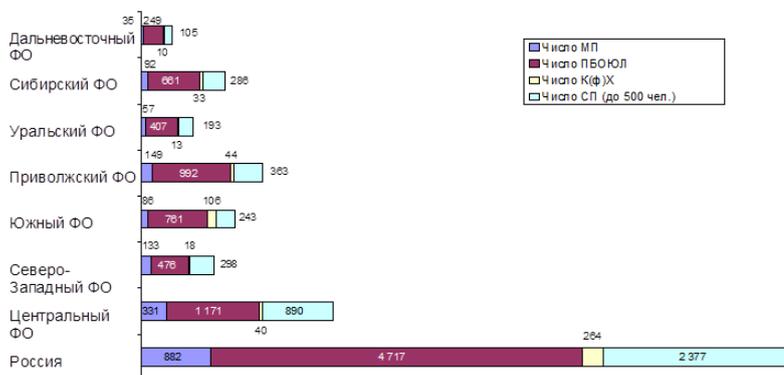
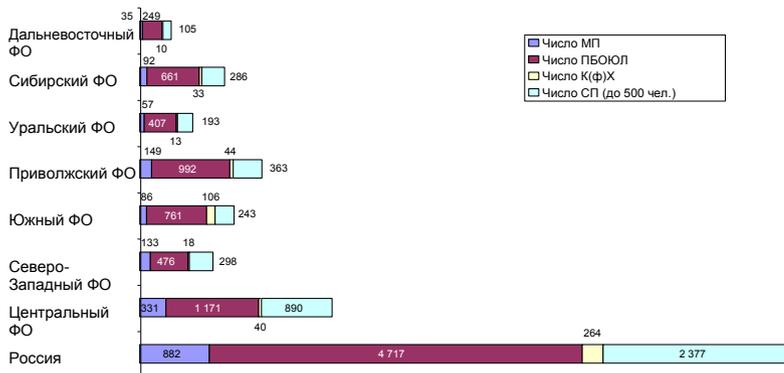


Diagram 2: The number of SMEs in the context of federal districts, thous.



The threshold of 90% for the share of the number of SMEs in the economy has been reached in all federal districts of Russia without exception. Moreover, the minimum contribution of SMEs is registered in the Central Federal District (91% by the European criterion and 94% by the US census). First of all, this is due to the low representation of IPs, which are most prevalent in regions with poor socio-economic development indicators. In addition, due to the peculiarities of economic and historical development, the largest enterprises are concentrated in this district. (Diagrams 3 and 4) [32].

Diagram 3: The structure of economic entities in the context of federal districts in% (by European criterion by the number of employees in the joint venture)

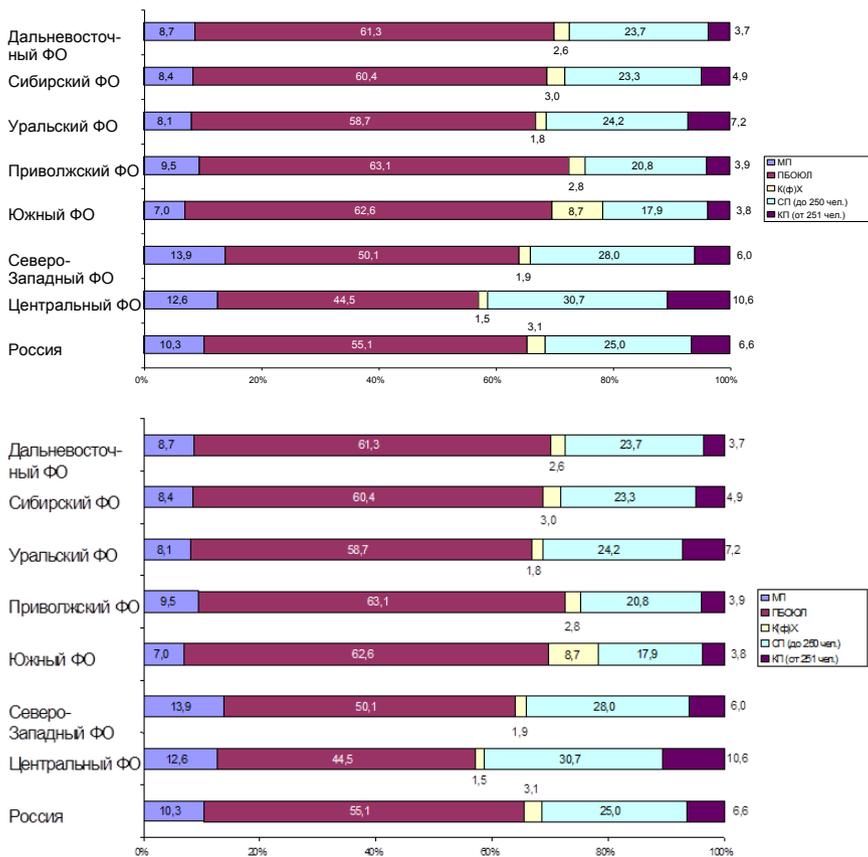
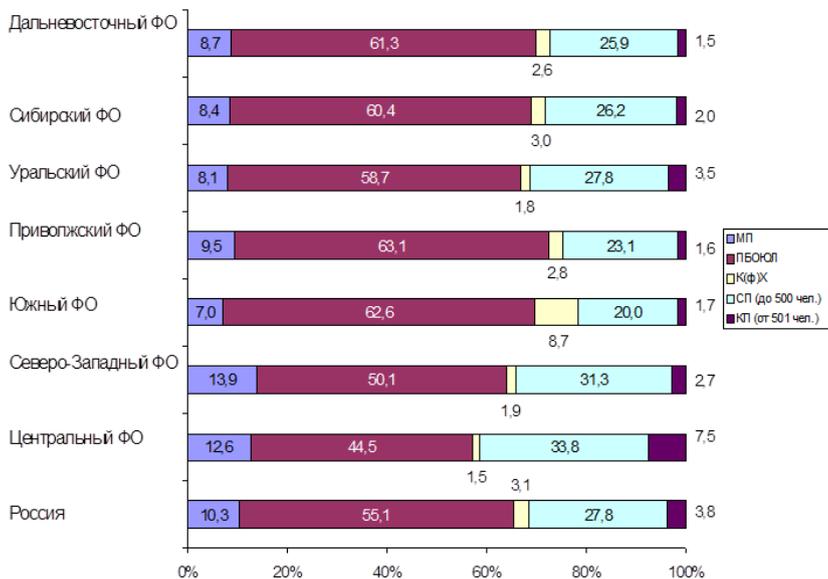
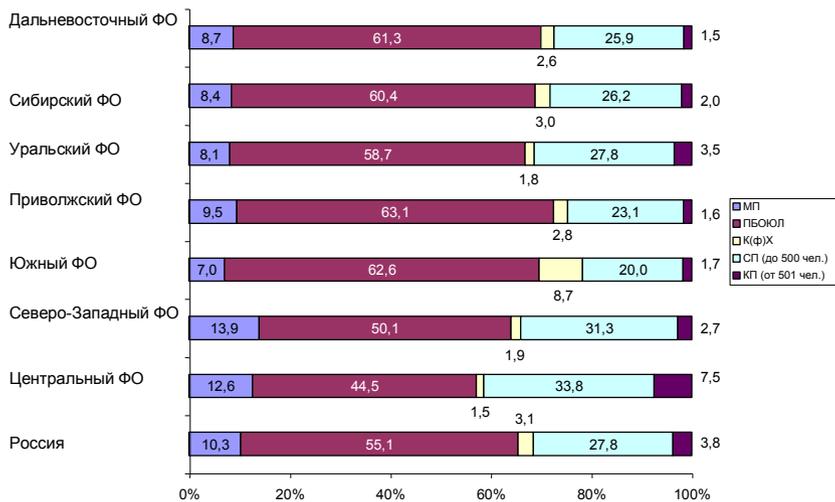


Diagram 4: The structure of economic entities in the context of federal districts in% (according to the US census on the number of employees in the joint venture)



The most numerous subject of the SME sector in Russia as a whole and in all federal districts without exception is individual entrepreneurship. Its share in the number of economic entities varies from 44.5% (Central FD) to 63.1% (Volga FD). Such a high presence of individual entrepreneurship in the two named districts is determined by many factors, including the specificity and specificity of the economic development of the region, at the same time it should be noted that it is in these districts that the population has the lowest incomes and one of the highest unemployment rates. The second most common subject in the structure is medium-sized enterprises. In general, peasant (farmer) households have the minimum weight, but in the Southern Federal District their share is quite high (8.7%), which is quite consistent with their sectoral orientation in this district. The share of small enterprises in the total number of business entities ranges from 7.0% (Southern Federal District) to 13.9% (North-Western Federal District).

For a more visual and comprehensive presentation of the distribution of the number of economic entities and their structure in Russia as a whole, we present the numerical information in the form of pie **Diagram** 5 and 6.

Diagram 5: Number and structure of business entities in Russia as a whole, thousand and in%. (according to the European criterion by the number of people employed in joint ventures) [32]

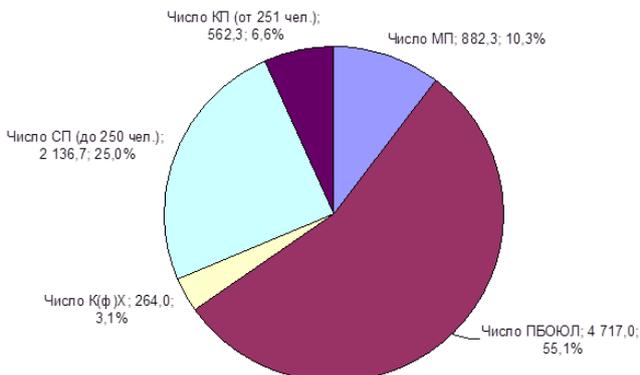
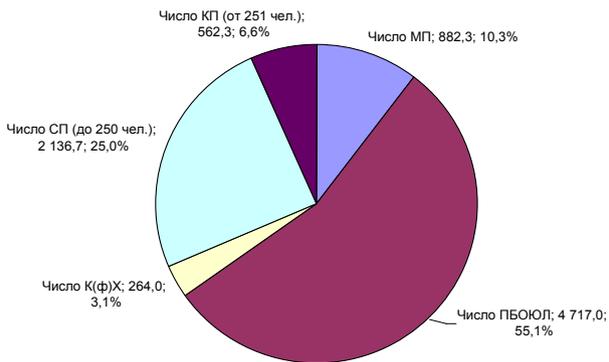
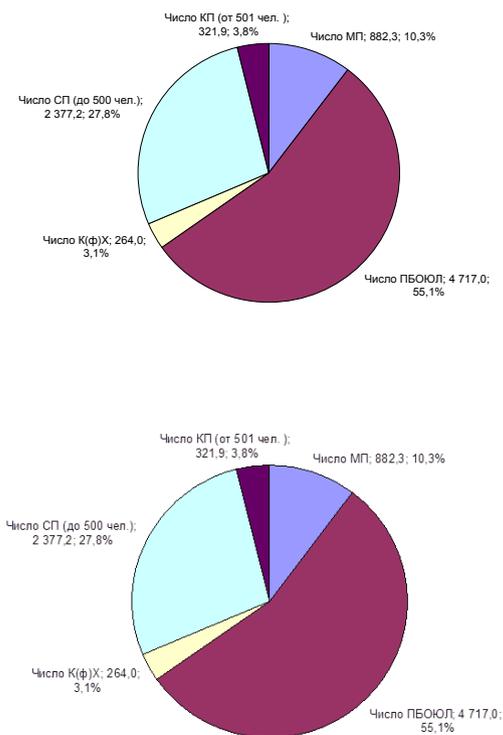


Diagram 6: Number and structure of business entities in Russia as a whole, thousand and in%. (according to the US census on the number of people employed in the joint venture) [32]



Most clearly about the spread of small and medium-sized businesses says such an indicator as the number of SMEs per 1000 people from among the economically active population. On average in Russia, this figure was 113 units (when assigned to medium-sized enterprises with up to 250 employees). When using the United States census, the figure increases to 116. That is, 8–9 people from the economically active population accounted for one SME entity, which suggests that the small and medium-sized businesses in Russia are fairly widespread (Figures 7 and 8).

Diagram 7: Density distribution of SMEs / number of SMEs per 1000 people from the economically active population (by the European criterion by the number of employees in joint ventures) [32]

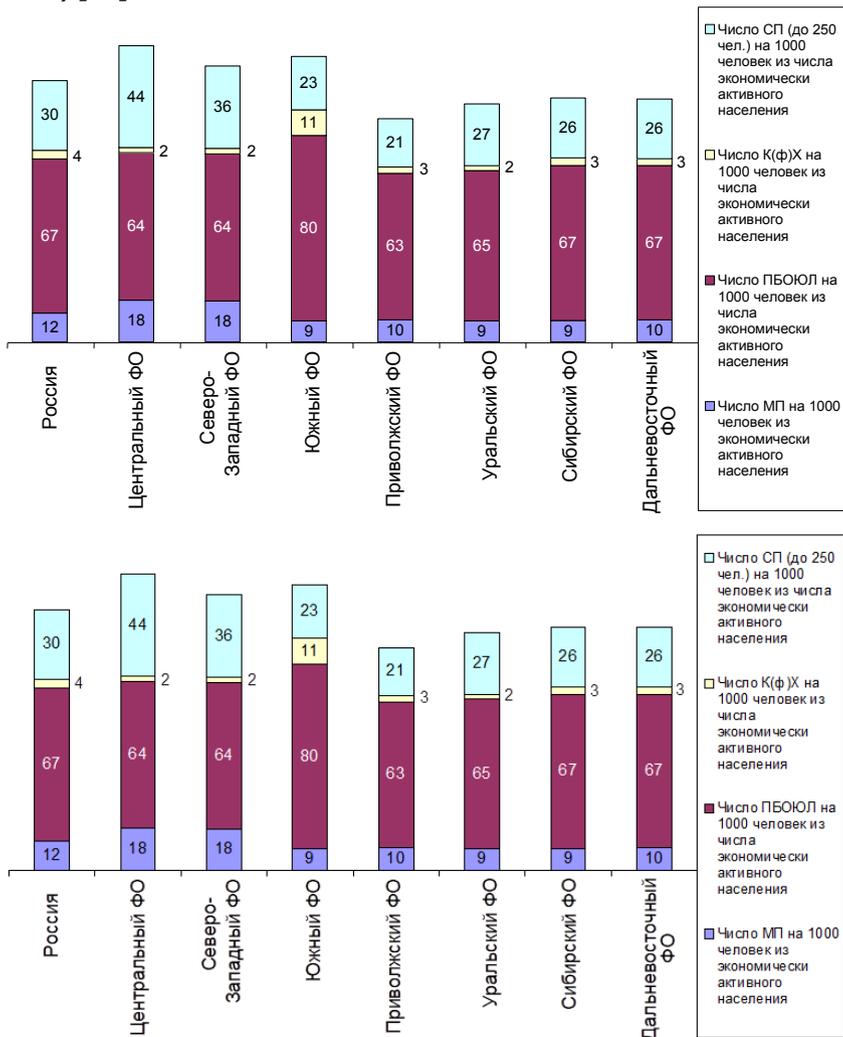
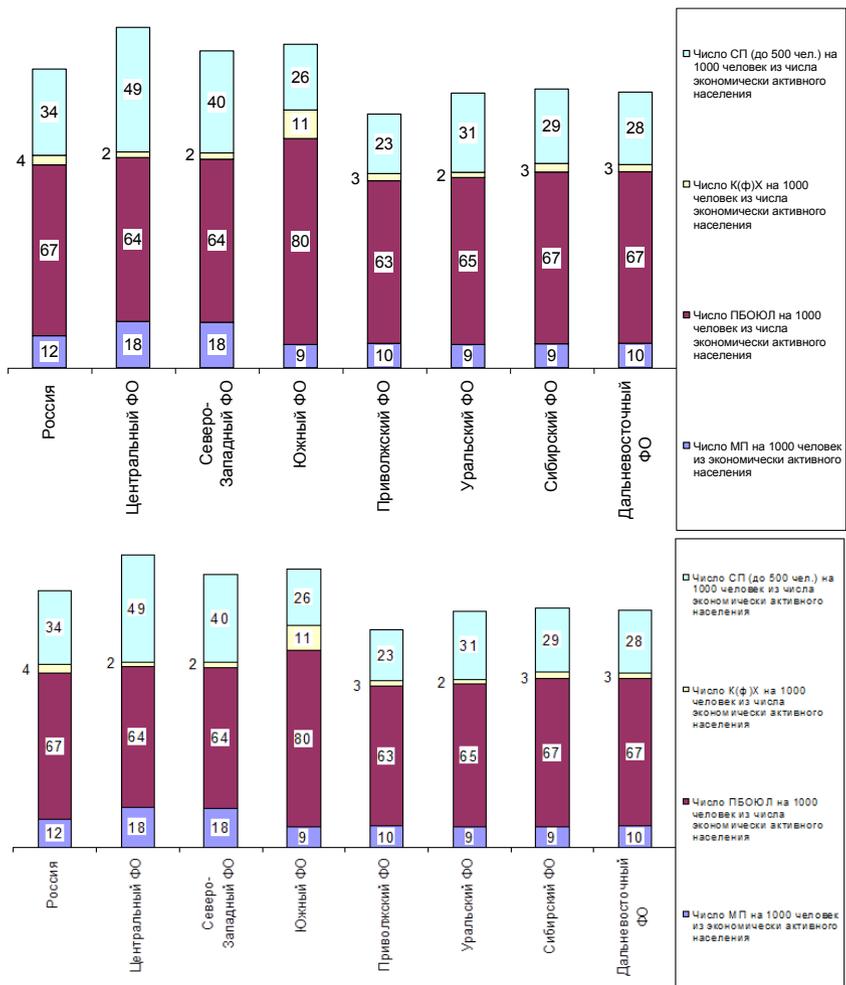


Diagram 8: Density distribution of SMEs / number of SMEs per 1000 people from the economically active population (according to the US estimate of the number of people employed in the joint venture) [32]



Regional analysis shows the uneven distribution of SMEs in Russia. At the same time, at the level of the subjects of the Federation, this unevenness increases. Thus, the number of subjects in this sector per 1000 people from the economically active population ranges from 47 (Republic of Buryatia) to 440 (Republic of Altai). If we estimate the range of variations in the density of the ICP according to the US census, then the minimum density is 48, and the maximum is 445, the maximum and minimum are observed in the same regions [32]. The uneven distribution across the federal districts is smoothed due to the occurrence of regions with different densities of individual SMEs.

Among SMEs, individual entrepreneurs, as the most easily created business, are most common. In second place are medium-sized enterprises, followed by small enterprises and peasant (farmer) farms. Such a structure is valid not only for Russia, but mainly for the majority of its subjects.

Labor resources in the SME sector.

29 547.2 thousand people were employed in SMEs. If we use the criterion for classifying enterprises as an average 500 people, then the number of employed rises to 37,578.4 thousand people. These are 45.1% and 57.4%, respectively, of the total number of people employed in the Russian economy as a whole. (Diagrams 9 and 10).

Figure 9: Structure of employment in Russia in thousands of people. and in% (according to the European criterion on the number of employees in joint ventures) [32]

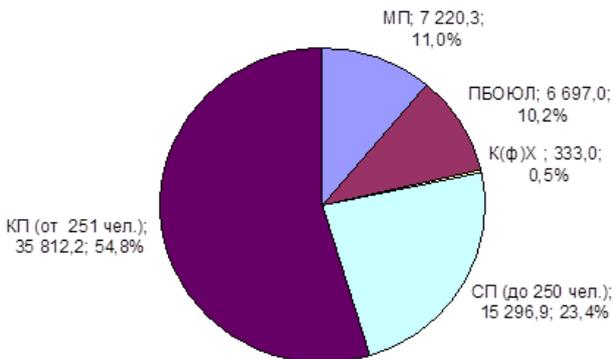
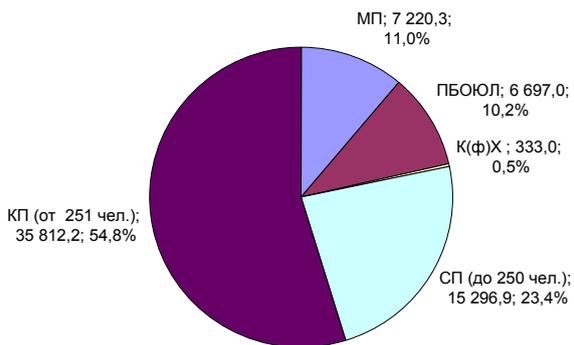
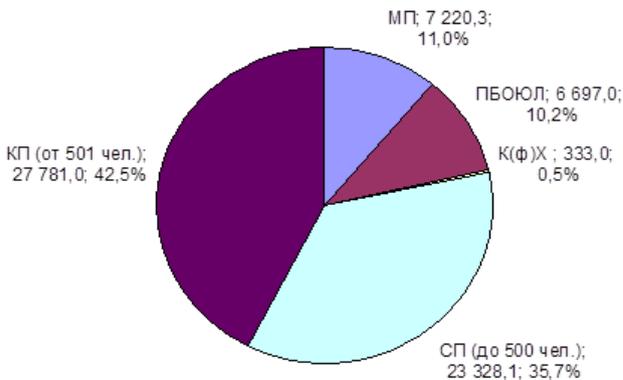
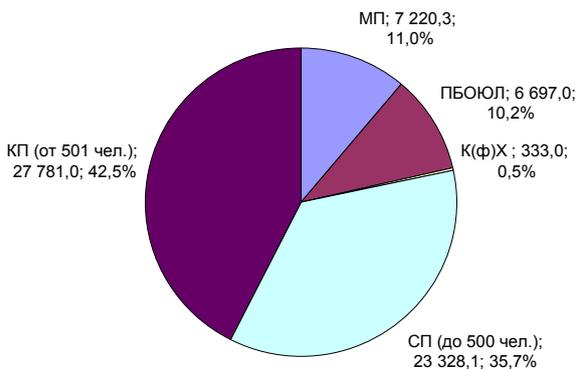


Figure 10: Structure of employment in Russia in thousands of people. and in% (according to the US census on the number of employees in a joint venture)



The employment structure shows that at the moment the problem of providing jobs is solved at the expense of large enterprises, where they work according to the European criterion for the formation of SMEs 54.8%, and according to the US qualification 42.5% of the total number of employees. In Europe, large enterprises provide employment for only 34.2% [22]. That is, SMEs in Russia do not yet play the social role that they play in economically developed countries in the field of employment.

From 23.4% to 35.7%, depending on the criterion for classifying enterprises as SMEs, employment in Russia as a whole is provided by medium-sized enterprises. Then, on the mass scale of the provision of jobs, there are small enterprises and a segment of individual business (11 and 10%, respectively).

Territorially, SMEs in the Southern, Central, Far Eastern and Northwestern Federal Districts play the most active role in the formation of employment (Diagrams 11 and 12).

Diagram 11: Employment structure, in% of the total number of people employed in the Russian economy (by the European criterion by the number of people employed in joint ventures)

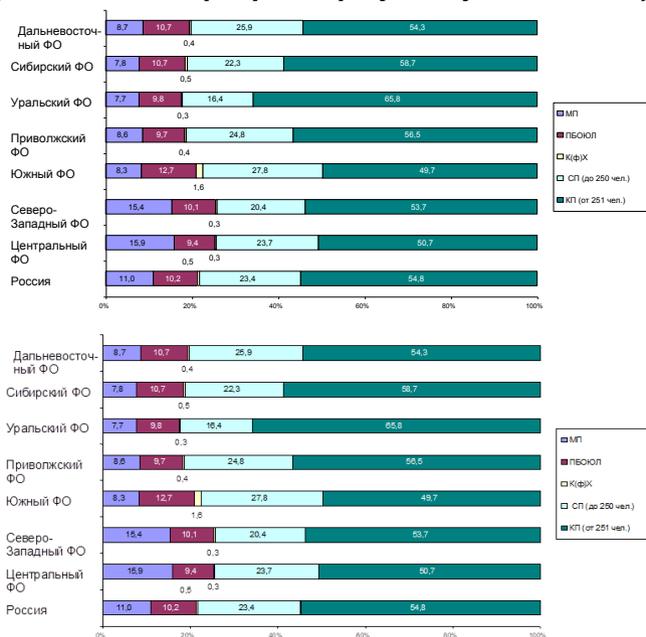
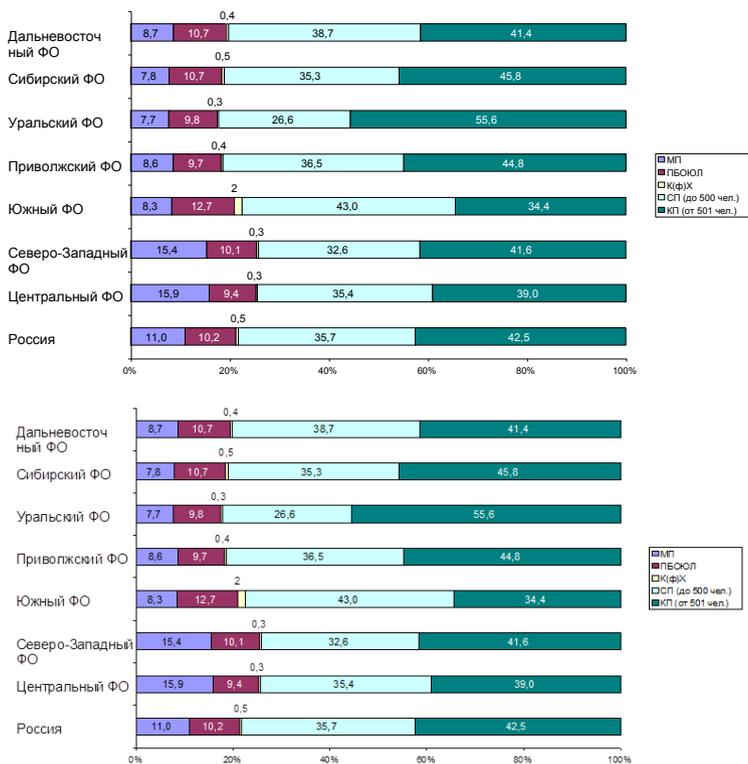


Diagram 12: Employment structure, in% of the total number of people employed in the Russian economy (according to the US valuation of the number of people employed in joint ventures)



To determine the contribution of SMEs to the economy based on performance, the most common indicator is their share in the gross regional product, but, unfortunately, to calculate it, serious statistical and methodological support will be required, which also affects statistical monitoring programs for the SME sector. Therefore, a revenue indicator is used to characterize the contribution of SMEs to the level of economic development. The choice of this indicator is due to several points. First, revenue, along with other indicators of output, is one of the main indicators of production and economic results of enterprises. Secondly, this indicator is calculated according to

a single methodology in all industries, in contrast, for example, to the indicator of manufactured products. Among other things, it is the revenue indicator that is used in international statistical practice to estimate the share of sales, the so-called market share.

For example, in 2017, SMEs received 7,278.5 billion rubles, which represents 39.3% of the total revenue. If you operate the US census by the number of people employed in the joint venture, the revenue of SMEs rises to 8,681.7 billion rubles, and the market share accordingly rises to 46.9%. The market share of Russian SMEs is approaching this indicator in European countries, which is estimated at 56.7%. (Diagrams 13 and 14) [32].

Diagram 13: Revenue in SMEs of Russia in billions of rubles and in% of total revenue (according to the European criterion by the number of employees in joint ventures) [32]

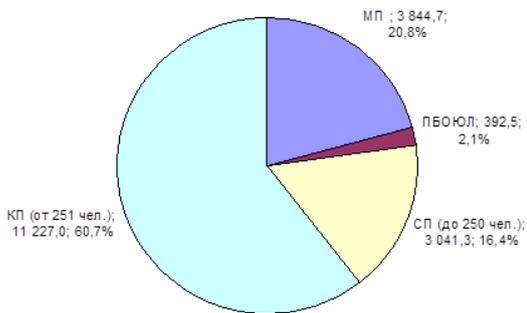
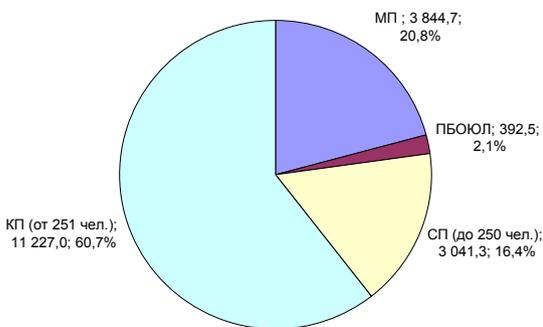
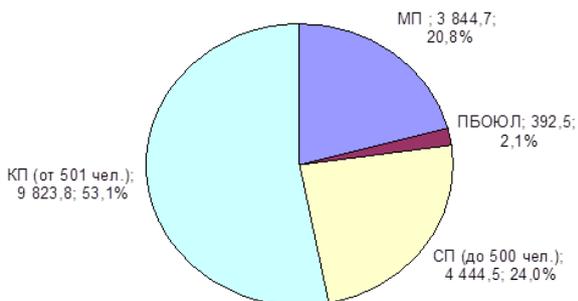
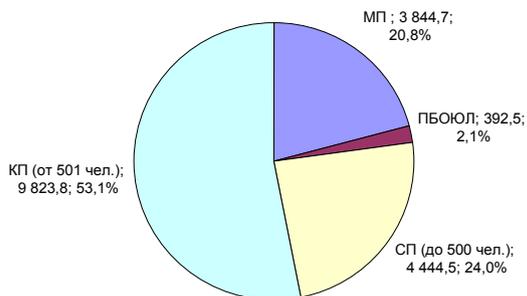


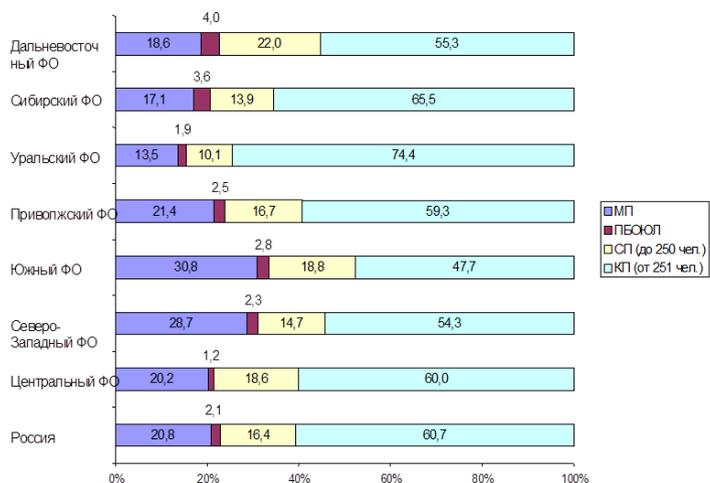
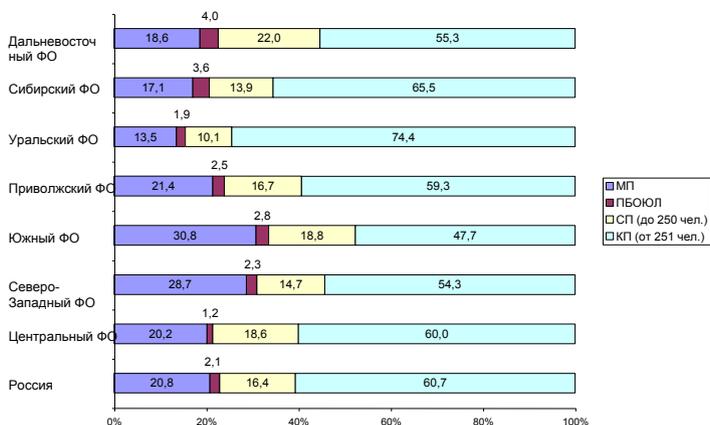
Chart 14: The revenue of Russian SMEs in billions of rubles and in% of total revenue (according to the US census on the number of employees in a joint venture) [32]



Among Russian SMEs (qualification for employment up to 250 people), the largest market share is occupied by small enterprises - 20.8%. In second place are medium-sized enterprises - 16.4% of all sales. According to the US census, medium-sized enterprises become leaders among SMEs - 24.0% of the market share. Given that the number of people employed in the MP is 2-3 times lower than that of medium-sized enterprises, one can make an input about the greater efficiency of the former. The share of IE revenue in its total volume is minimal - 2.1%.

Territorially, when using the European criterion in all federal districts, small enterprises among SMEs have a large market share, ranging from 13.5% (Ural Federal District) to 30.8% (Southern Federal District). In second place are medium-sized enterprises, whose share of sales varies from 10.1% (Ural FD) to 22.0% (Far Eastern FD). (Diagrams 15 and 16) [32].

Diagram 15: The structure of SME revenue in% of total revenue (according to the European criterion for the number of people employed in joint ventures) [32]



If enterprises with up to 500 employees are referred to SMEs, then as in Russia as a whole, so in the main and in a number of districts medium-sized enterprises become leaders in market share among SMEs. The only exceptions are the South and North-Western Federal Districts, where the championship is left to the MP.

Regionally, the sales market for all SMEs fluctuates dramatically. Thus, according to the European criterion for the formation of SMEs, the minimum share is fixed in the Ural Federal District - 25.6%, and the maximum (52.3%) - in the Southern Federal District. According to the US census, the range of oscillations ranges from 31.0 to 62.1%, the maximum and minimum are reached in the same regions.

The effectiveness of the functioning of SMEs.

Describing the number of SMEs, the number of employees, as well as the results of activities, we note that the logical continuation of the analysis is the calculation of the effectiveness of SMEs. As such an indicator, a specific indicator of revenue per 1 employee was used, an indicator primarily evaluating the efficiency of the use of labor resources.

Diagram 16: Structure of SME revenue in% of total revenue (according to the US census on the number of employees in a joint venture) [32]

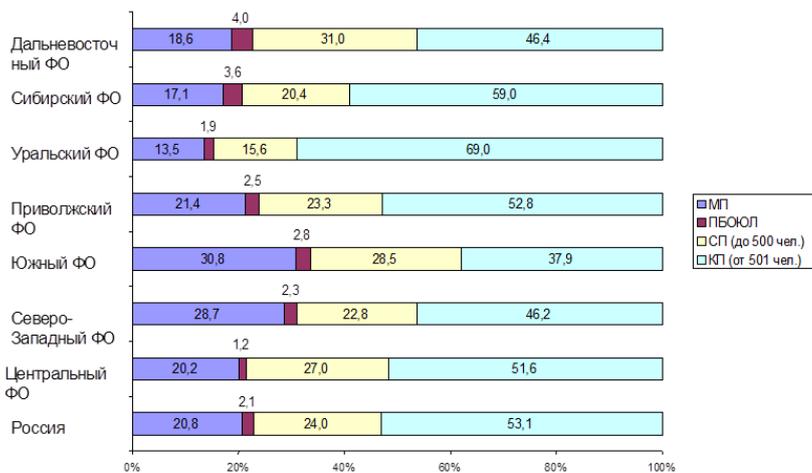
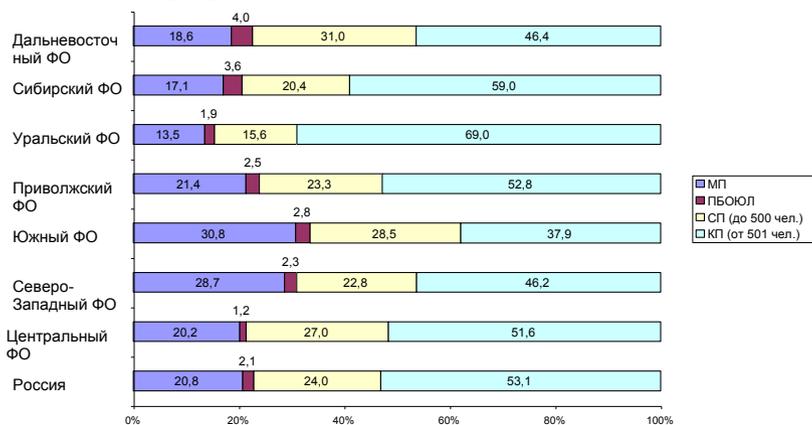
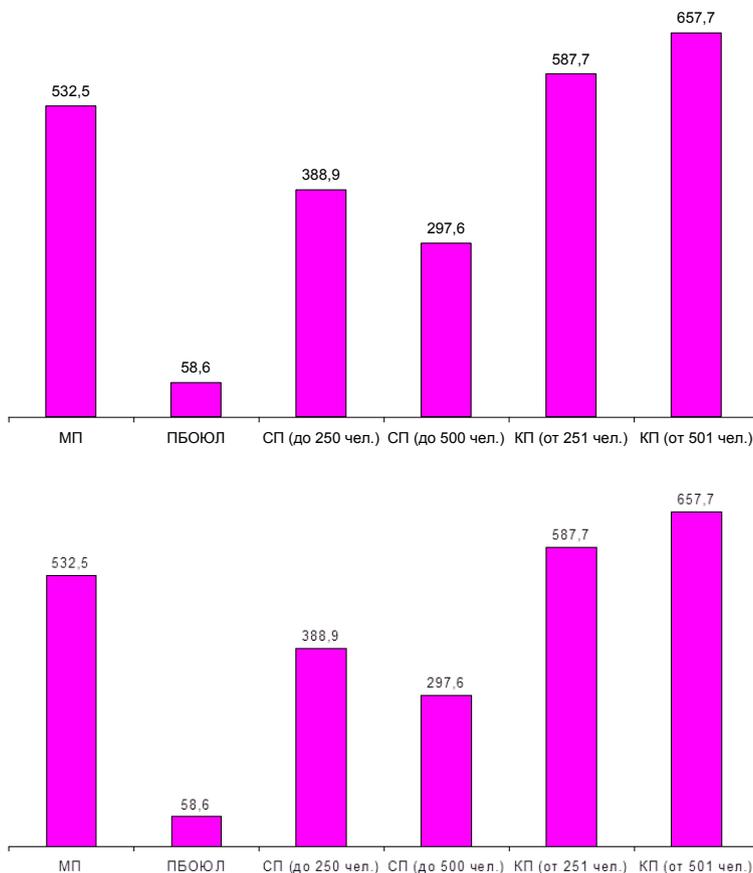


Diagram 17: Revenue per 1 thousand rubles employed in Russia.



The diagram clearly shows that the most effective were large enterprises. There are several reasons for this, let's call the main ones. Many of the large enterprises are monopolists in their market, as a rule they work in the areas that are the most economically profitable, they have good relations with local authorities. (Diagram 17).

The second in effectiveness - МП. Being private, these enterprises are aimed at high efficiency of functioning and thus became the most important component of the national innovation system of Russia [32].

2.3. Forms and methods of increasing innovation activity in small and medium-sized enterprises

Within the framework of the European Union's technical assistance project for economic reforms in the Russian Federation (Tacis program) - SMERUS9501 "Technical Assistance in the Creation of the Small Business Resource Center", a survey of small business enterprises was conducted. The purpose of the study is to analyze the current state, trends in the development of innovative processes in small business and, on its basis, to develop recommendations for their intensification. The object of the research is small enterprises, organizations accompanying and supporting innovative processes. Based on the analysis of the data obtained, you can:

- determine the state of innovation in the production segment of small business, the scope and depth of innovation processes;
- determine the nature and extent of the impact of innovation activity on the overall performance of small enterprises;
- identify the main barriers to the development of innovative activity.

In order to identify differences in behavior and performance of individual groups of enterprises, the following main subgroups were identified:

subgroup A - main, includes all enterprises belonging to the production sector;

subgroup D - those enterprises from group A, which carried out innovations at least once .;

subgroup E - those enterprises from group A that did not innovate even once ($A = D + E$).

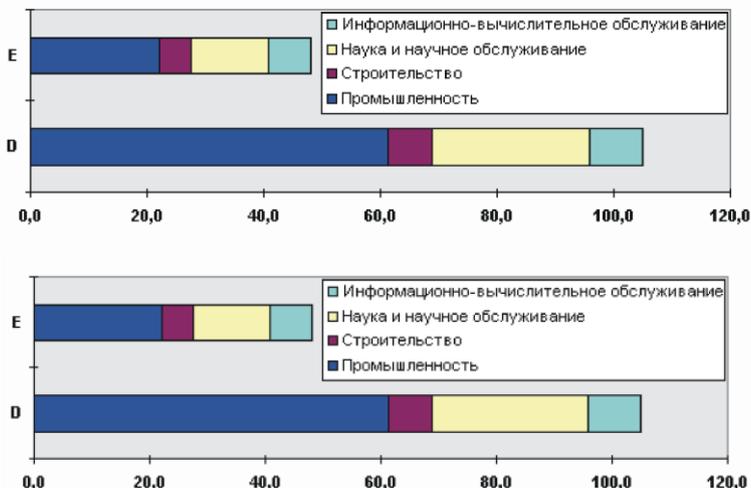
The total number of enterprises in each of the main subgroups, as well as their distribution by type of activity, is presented in Table 1.

Table 1
Number of enterprises in the main subgroups

<i>Kind of activity</i>	<i>A</i>	<i>D</i>	<i>E</i>
Industry	108	81	27
Building	17	10	7
Science and Scientific Services	52	36	16
Information and Computing Services	21	12	9
Total	153	105	48

In percentage terms, in subgroups D and E, the distribution of enterprises by type of activity is approximately the same, which makes it possible to count on a certain correctness of comparative assessments.

Diagram 18: Distribution by type of activity of enterprises in the subgroups that conducted (D) and non-innovation (E)



Among innovative enterprises (group D) there are enterprises with different lifespan: both very young (age 1 year) and quite mature, leading their history from the beginning of restructuring (see Table 2) and operating on the market for over 10 years.

**Table 2
Distribution of enterprises by age**

Age of the enterprise, years	1-3	4-5	6-7	8-10	>10
Number of enterprises	21	27	34	16	4

Significant indicators of the loyalty of the external environment in relation to business are the ratings of factors constraining the achievement of the short-term goals of enterprises. Studies show that the differences in the significance of deterrence factors in enterprises that carried out and did not carry out innovations are not so great (see Table 3). Under current conditions, innovative enterprises are

more acutely aware of the decline in demand and the lack of working capital as deterrent factors. The reason for this, perhaps, is that the products of innovative enterprises (on a sample scale) are not essential products, and in the conditions of market contraction it is consumers who refuse from them in the first place. On the other hand, the “instability of legislation”, to which entrepreneurs often refer, is less significant for innovative enterprises, not because it has less impact on their activities. Simply due to more advanced management, they have adapted to it. In addition, when this factor is noted, they most often have in mind the regulations defining current activities, and for innovative enterprises at different stages, the impact of these acts is different, so the resulting estimates are smoothed out.

Table 3

Comparative characteristics of ratings of factors that impede the achievement of the objectives of the enterprise

Deterrence factors	Rating		
		D	E
Equipment depreciation, backward technology	11		13
Increase in costs	7,8		5
Reduced demand	3-5		6,7
Low solvency	1		1
High competition	10		11,12
Supply difficulties	12		-
Трудности в управлении	13,14		14
Rent terms	7,8		8,9
Legislative instability	6		2,3
Lack of funds for development	2		2,3
Lack of cash working capital	3-5		6,7
Loan terms	10		11,12
Insufficient qualifications of employees	13,14		-

High taxes:			
local		9	8,9
federal		3-5	4
Bank insecurity		9	10

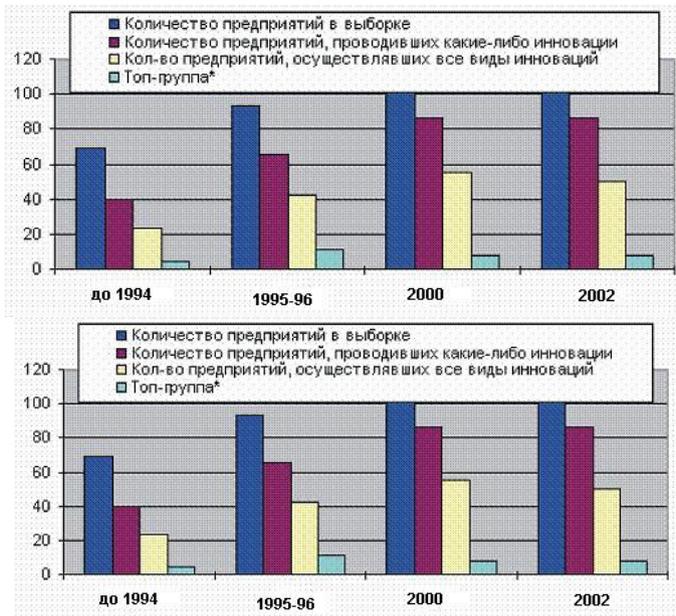
The difference in the strategy of using profits between innovative and non-innovative enterprises is also small, although they reflect a fundamentally different approach in this matter. Among non-innovative enterprises there is a much larger number of those whose profits do not remain. The second largest group is a group that invests profits in business development, the next priority direction for using profits is the payment of bonuses to employees. Approximately as often as employees receive bonuses, non-innovative enterprises invest it in various financial assets. For innovative enterprises, according to the degree of priority, the use of profits is arranged in the following way: investments in business development, work without profits, repayment of debts to suppliers and only then premiums and other investments. This suggests that these enterprises are more focused on long-term tasks in business development, more economical and rational in forming the sources of their financing.

Thus, the analysis performed allows us to conclude that the differences in the priority of deterrence factors and profit utilization strategies demonstrate a more market-oriented orientation of the management of innovative enterprises, its concentration on long-term business development objectives. At the same time, the analysis shows that those innovative enterprises that received state support, at least quite often turn out to be less wealthy “innovators” than their “unhappy” state colleagues. The correctness of this conclusion, of course, requires additional justification.

With sampling materials, it is possible to create, with certain reservations (related primarily to the fact that the sample is Moscow), a qualitative portrait of a typical small manufacturing enterprise or, more correctly, about the formation of its information model.

If we talk about intra-company innovations, dividing them into product and process, as well as fundamentally new and improving, the picture is as follows (see Diagram 19).

Diagram 19: Dynamics of innovative activity of enterprises

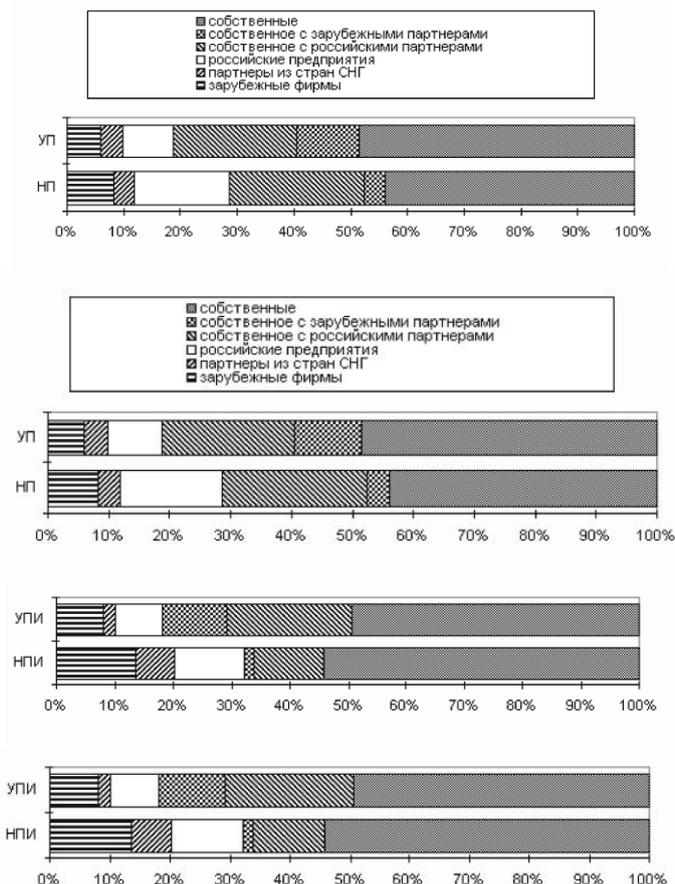


* - top group - a group of enterprises that, during a certain year, carried out all types of innovations: product and process intra-firms, and in each case both improving and radical ones.

Sample materials showed that innovation is continuous. This means that enterprises that carry out innovations constantly do this, improving their products and bringing new products to the market from year to year. The annual increase in the number of enterprises carrying out innovations is associated not only with different age of enterprises in the sample, but also with an increase in the intensity of innovation activity, with the involvement of an increasing number of enterprises. On the other hand, although product innovations are carried out more often than process innovations, for many enterprises, the boundary between them remains fairly conditional: up to 65% of innovative enterprises are carried out by both of them at the same time. Approximately the same ratio (65%) between the number of process innovations, possessing fundamental novelty, and improving; a little more often, fundamentally new innovations are found among the grocery ones (up to 70-75% of those that improve).

Diagram 20 presents data on developers of innovations introduced by Russian enterprises. It is characteristic that about half of enterprises introduce their own developments into production. Taking into account partners (Russian and foreign), the share of innovations created with the participation of Russian developers and implemented in Russian small enterprises increases to 70-80%. Russian partners are attracted for development 2-7 times more often than foreign ones, and in the case of fundamentally new (both product and process) innovations, this ratio is maximal.

Diagram 20: Innovation Developers



From the standpoint of further deepening the ideas about the qualitative features of innovation, it is of interest to compare the following ratings: authorship of developments (Diagram 20), motivation to implement innovative projects (see Table 4) and sources of information from which initial information about innovative ideas is drawn (see Table 5).

Table 4
Rating of the motives for innovation

I	Increase competitiveness	3,40
	Improving the quality of products	3,39
	The development of new markets	3,35
	Increasing the share of the already developed market	3,24
	Expanding the range of product use	3,16
II	Realization in practice of own scientific developments	2,95
	Replacing obsolete products	2,86
	Reducing production risks	2,54
III	Labor cost reduction	2,42
	Compliance with standards	2,40
	Material reduction	2,32
	Energy savings	2,04
	OS load reduction	2,00

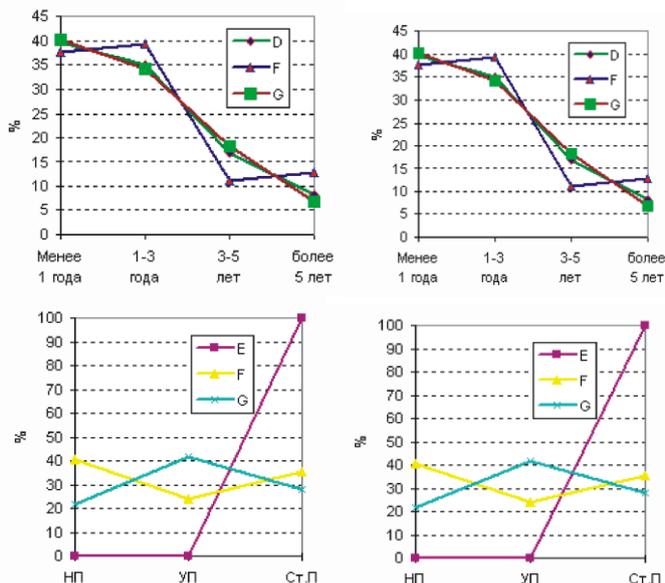
It should be noted that the creative moment in innovation activity is not dominant. This factor can be attributed to the second group and defined as “of almost medium importance”. More important motives are: increase of competitiveness and quality of products, development of new markets and expansion of a share in existing markets, expansion of the range of product use. This means that pragmatic market criteria have already become dominant in business. Moreover, from the very beginning, the developments and the selection of innovative ideas are guided by their promising market development, that is, at the OCD stage, directions are selected according to their market demand.

Table 5
Rating of sources of information on innovations

I	Own development	3,31
	Exhibitions	2,98
II	Customers	2,79
	Competitors	2,73

	Suppliers	2,48
III	Conferences, seminars	2,42
	Computer databases	2,23
	Other businesses	2,06
	Other partners	2,03
IV	Science Centers	1,89
	Universities	1,75
	Foreign training programs	1,58
	Consulting firms	1,18

Diagram 21: The nature of the products of different groups of enterprises [32]



The results of innovation activity are clearly visible in the example of the age structure of products manufactured by various groups of enterprises (Diagram 21). In innovative enterprises, the entire range of products is divided into approximately three equal parts: the products are old (St.Petersburg in Diagram 21), new and improved. The continuous innovation process ensures a constant change of assortment. The share of products older than 3 years is only more than 15% for innovative enterprises (in the group of innovative enterprises that received government support, the corresponding share is about 10%)

The most important stage in the formation of a business is the stage of the establishment of an enterprise - a test of strength in a new business. The success of the key problems of this stage largely determines the enthusiasm of new entrepreneurs in the further development of their business, in overcoming new problems, which do not become less. The problems of the stage of formation of an innovative enterprise can be placed in order of importance (Table 6).

Table 6
Rating of problems at the stage of formation of an innovative enterprise

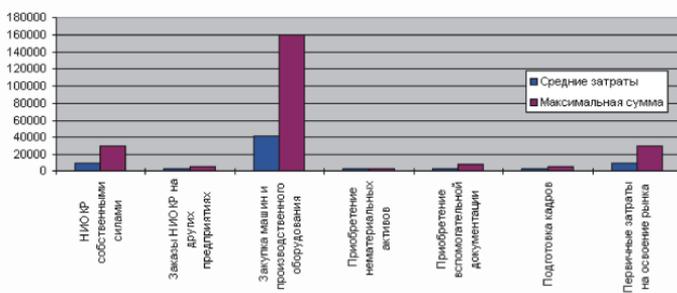
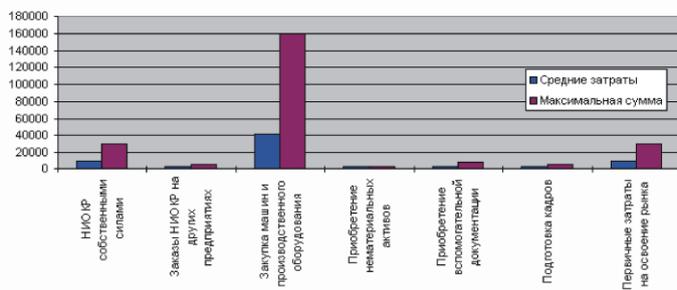
I. Raising funds for the completion of scientific research	1,25
II. Weak marketing justification of the project	4,68
Lack of equipment	4,74
III. Search for special information	5,05
Copyright protection	5,11
Lack of relationships with suppliers	5,16
Testing and product certification	5,26
Lack of space	5,42

The most acute problem of becoming was “raising funds for the completion of scientific research”. Compared to it, all other problems are far behind in their sharpness and are characterized by such close ratings that their further ranking does not make much sense. Nevertheless, for each individual enterprise the listed problems are very significant and at various stages are often decisive in the fate of the business as a whole.

However, the problems of finding funds are not closed to a specific initial stage, but are permanent. Small business works within the framework of the balance between its production capabilities and market needs and, in general, is not inclined to expand its activities. To be more precise, the increase in market share and the development of new markets occur within the capabilities of the industrial base of the MP and the possibilities of raising funds for its development. In these cases, the main deterrent to the development of the material base is the lack of sufficient funds.

For innovative enterprises, innovation activity is continuous. Maintaining the innovation potential at the same time involves systematic costs. The approximate structure of these costs is presented in Diagram 22.

Diagram 22: Cost structure for various areas of innovation activity of enterprises.



The main costs of innovation are related to the procurement of production equipment. However, the study showed that the second largest item of expenditure - R & D costs, which are commensurate, and taking into account the costs of intangible assets, orders to other organizations, etc., even exceed the initial costs of market development. Today there already exist and are trying to actively develop MPs that are not engaged in the market promotion of projects, and specialize exclusively in bringing scientific research to existing samples and their testing. The further fate of the development - the problem of the customer.

As the results of the study showed, in most cases (a little over 80%), it took no more than 2 years for entrepreneurs to complete the development work and bring the products to the first market sales (30% - less than 1 year and about 50% - 1-2 years). Only single projects had a longer training cycle. It should be noted that this is not a payback period, but only a period necessary for entering the market with the first lots of goods. This means that, on the whole, the prevailing conditions (and, apparently, objectively determined by the exist-

ing economic realities) of the provision of financial support correspond to the needs, although they are quite tense. However, the scale of support is still insignificant. Due to limited funding, direct support remains the exception, not the rule. Of the 33 enterprises in the sample that had R & D costs, 5 enterprises actually received support for the completion of development: 1 from the budget, 3 from state support funds and 1 from private Russian investors.

Another aspect of the problem of attracting financial resources is subjective. As the results of the Resource Center project "Financial Technologies in Small Business" showed, the economic training of entrepreneurs is still insufficient. Preparation of business plans today has ceased to be a problem: they learned how to make them in all regions, including using traditional and adapted packages, which significantly increased their overall level. Nevertheless, the entrepreneurs themselves are still not sufficiently qualified in terms of the economic efficiency of projects, this is confirmed by the results of the survey: in terms of assessments of acceptable parameters for lending to innovative projects, the responses of entrepreneurs are very contradictory and incorrect. This allows us to conclude that entrepreneurs still have an inadequate understanding of the value of money, they are not sufficiently aware of the real risks and benefits of the project, which inevitably causes problems in the negotiation process with banks and creditors. Thus, in addition to improving the state support system, the task of raising the level of skill in the economic field remains relevant.

For innovative enterprises in the regions, the problem of access to both special and publicly available information resources is extremely relevant. In the first case, these are, as a rule, state standards and departmental instructions determining those or other rules of entrepreneurial activity. In connection with the collapse of the system of scientific and technical information centers, it is very difficult to find fresh information in the regions. Recently, increasingly, entrepreneurs point to another problem - the need for access to the resources of the Internet.

Apparently, the solution of the problem lies not only in the way of equipping regional agencies with appropriate equipment, training personnel to work in information networks and establishing preferential rates for access to resources for MPs. It seems relevant part of the funds allocated for informatization, to direct to the financing of work to ensure the availability of information resources of departments through modern information technologies.

In Moscow, there are no problems with obtaining qualified assistance, this is more typical for remote regions. In Moscow, with a relative degree of confidence, it is possible to speak rather about the availability or unavailability (for financial reasons) of the services of relevant specialists. It is known that the main part of certified patent attorneys, possessing modern knowledge in the field of protection of intellectual property rights, are concentrated in Moscow and St. Petersburg. A little further, already in the Volga region, they can be met quite rarely, and beyond the Urals there are regions where there is not a single such specialist. From our point of view, this is a rather serious problem, especially for the regions of Siberia, where large scientific and defense centers, traditionally associated with the development and introduction of high technologies, are concentrated.

Another obstacle to the innovative development of small and medium-sized businesses is the lack of experience in the field of technology transfer and the implementation of production projects. Skilled consulting in this area could also help many entrepreneurs.

There is another aspect to this reason, only a few Western firms are engaged in civilized work in the industrial property market. Most of the buyers from the number of buyers in this or that degree demonstrate elements of activity that can be attributed more to the field of industrial espionage than to the civilized forms of technology transfer. The plight of Russian scientists causes the partner a natural temptation to save. This suggests that simultaneously with a rather sluggish current process of technology transfer, a more intensive diffusion of knowledge occurs. The latter is practically not hindered by legislation. Although it requires that the development was originally patented in Russia, it does not provide for any consequences in case the authors violate this provision of the Law. And such violations occur. State losses from this phenomenon are difficult to estimate. To some extent, the damage can be reduced not only by tightening the legislation (or rather, by its consistent improvement), but also by expanding the practice of lending for patenting abroad of promising scientific developments. At the same time, many of our projects, especially high-tech ones, do not have a solvent market within Russia. Technology is a set of documents that describes how to produce, sell and earn something. For such a kit in a small enterprise they give 50% of the shares: only for the paper, considering that all material resources are being pulled by 20%, and providing the market by 30%. But in Russia such a scheme is not working yet. This means

that technologies are being sold in the world that are not worked out at the level of a prototype, but at least an experimental batch, or have a certain level of complexity that ensures the production of a rather complex final product. In addition, access to the global level means, on the one hand, ensuring global competitiveness, and, on the other, rapid implementation and a high technological level update rate. Otherwise, everything quickly becomes outdated, there is an alternative competitive solution. Russian developments, in most cases, do not correspond to this level.

The solution is to create venture funds and companies. In accordance with the developed concept, existing and existing funds will be allowed to invest in high-risk projects through a specially created venture capital fund, which will thus accumulate financial resources and independently, with the help of their own managers who have developed the necessary experience in recent years to promote innovative projects. However, this process is extremely slow. The main reason is the insufficiency of the existing legal framework for the implementation of such a form of funds that would allow, without irrational losses, to attract and spend funds and be acceptable to private investors.

Support at the stage of entering the market could be provided not only by changing the conditions for financing projects. An extremely noticeable result would be measures of state protectionism to domestic producers. It is about creating equal conditions for domestic and foreign manufacturers with participation in various tenders.

The problems of susceptibility of the Russian industry to innovations (or, as it is called above, the availability of a solvent market for high-tech projects) are clearly visible in the example of enterprises engaged exclusively in the production of scientific and technical products. The fate of their development is highly dependent on the state of the industry in which they operate. Few of the industries today can be called receptive to innovation. Even in relatively prosperous industries in recent years, primarily in those that are focused on the daily demand of the population, as well as providing them, the situation is absolutely far from the Western model, when "for every enterprise the problem of integrating a new technology into its activity is a problem of survival, strategies and profit." In most industries (even at first glance, in prosperous, such as the fuel and energy complex) enterprises are forced to reduce costs, which is why future costs do not seem to be justified. Therefore, orders for scientific and technical development for independent innovative MPs are falling.

Unlike the West, where competition conditions force enterprises to pursue an active technological policy, we have little need for market needs and creative activity of developers for various reasons. This is also one of the reasons for the low rates of technological re-equipment. Because of this, in our market, a special subject of the high-tech market, a marketer of scientific and technical products, is in demand. This is an intermediary between the author and the market, possessing unique abilities: the author must trust him, he must be able to work in the market (know what the industry needs) and he must be able to control the developer, that is, he is competent to accept the work.

CHAPTER 3. Economic mechanisms to stimulate innovation in enterprises

3.1. The formation and development of a network economy as the main factor in organizing and stimulating the innovation activity of enterprises

Today, more and more signs indicate that we are already on the threshold of a new economic form. It can be called information economy, network economy, or even high-tech economy. At the same time, the formation of network structures that have a decisive influence on the advancement to the network economy and the emergence of a new business form, within which a positive feedback starts to work effectively, plays a particularly important role.

These changes in patterns are formed primarily where economic processes are determined by the scientific and technical level of the entire national economy. This can be attributed primarily to the industry, producing computers, medicines, missiles, aircraft, automobiles, software, as well as telecommunications equipment. This means that the network economy will be implemented precisely in the economic system, where network relations and services dominate on the information and scientific basis.

Trends and patterns in the development of the communication environment indicate that the integration of market partners into physical as well as virtual networks is gaining more and more weight in business activities and organizational processes. The development in the direction of a fully networked market business enterprise, in which coordination links will mostly be provided with technical means, is still in its initial stage, but in the coming years it will be constantly accelerated. Information networks are increasingly becoming the basis of the production relations between an enterprise and its customers, employees and business partners. Innovative management within such networks requires new management decisions with a focus on developing cooperative strategies.

If we talk about the fundamental changes caused by technical development, then we should first of all mention the huge increase in productivity due to microelectronics, the change in the cost structure in the direction of the constant component and the effect of the law of increasing marginal profitability. The domination of fixed costs gave

E.Shmalenbakh as early as 1928 to speak of a change in the economic form — a transition from a free economy to a tied economy [28].

Currently, the share of fixed costs in their total volume in most industries exceeds 50%, and in chip production it is already above 90% (in the 1920s-1930s, this share was maximum in the textile industry — almost 60% against 20–30% in most industries). Such a strong imbalance in the ratio of variable and fixed costs is typical for the branches of the fifth Kondratieff cycle, in which new technologies dominate. If during the first four cycles emphasis was placed on the resource "energy" or "matter", then in the fifth cycle of Kondratieff information is the dominant growth factor for the first time. According to Nefyodov, the transition from the fourth cycle to the fifth one means much more than just changing one long period to another. This shift is characterized by a transition to a different development paradigm, which is based not on energy, but on information. It is expected that in the future information will remain the dominant source of growth and will form the basis of the following Kondratieff cycles (Fig. 1) [32].

Fig. 1:



In the field of telecommunications, this trend is manifested due to the need for large pre-production investments to create a network infrastructure. Empirically, this trend is confirmed by the law of Huntley. The predominance of fixed costs requires enterprises to funda-

mentally different methods of action, which range from participation in strategic alliances through modeled approaches to costing, especially taking into account fixed costs, to new revenue support schemes, for example, in the form of fixed revenues.

Along with the problem of fixed costs, the phenomenon of production with low marginal costs is observed, as well as the increasing effect of increasing marginal profitability. With a direct network effect, systems with a critical mass of consumers and an increase in marginal profitability, new behavioral models are required when making economically rational decisions. At the same time, the formation of network structures that have a decisive influence on the advancement to the network economy and the emergence of a new economic form, within which the law of increasing marginal profitability begins to operate and positive feedback works, plays an especially important role.

In order to successfully confront competitors in the future, managers and specialists must meet new qualification requirements. The transition from an industrial economy to a network economy is associated with fundamental structural changes, which for the most important aspects of business processes are schematically represented in Figure 2 [32].

These structural changes, together with the characteristics of the network economy described above, lead to radical changes in qualification requirements. Currently, they are often discussed in connection with the expected stages of development in the field of electronic business [28]. Analysis of publications on this topic allows us to distinguish two aspects of future qualification requirements, which are determined, on the one hand, by the need to link technical and economic know-how, and on the other, by the need to create psychological and social competence [28].

The introduction of new technology in the conditions of rapid technological development is one of the necessary conditions for success in competition. On the contrary, the suitability of technology for differentiating competition increasingly recedes into the background, and personnel qualities such as creative activity, constant readiness for innovations, a sense of responsibility, ability to cooperate and group work are becoming a necessary prerequisite for success in the future markets. This trend is supported by empirical research.

Fig. 2: Comparison of hierarchical and network structures [32].



	Hierarchical structure	Network structure
Hierarchical levels	lot	lot
Division of labor	wide	insignificant
Employee position	substitutability, dependence, submission	commitment, loyalty, awareness, independence
Network connections	insignificant	wide
Workflows	insignificant	flexible, situational organized for the duration of the project
Influence power	depends on the hierarchical level	depends on knowledge and skills
Opportunities for cooperation	insignificant	wide
Organizational orientation	on the economy of the enterprise	self-interest, enterprise and team
The most important goal	maximize release	benefit optimization

As technical networks increasingly turn into networks of relations between an enterprise and its customers, employees, and business partners, the value of those from the field of social and psychological competencies as important qualification requirements for managers and specialists noticeably increases with advanced training.

The possibilities of communication technologies, especially telecommunications, allow increasing the number of network options not only between technical systems, but also members of the social system. Therefore, achieving a multi-directional communication flow between members of a social system is one of the specific objectives of communication technologies and network systems. To create the maximum number of network options, compatibility of networked el-

ements is required. At the level of consumer goods, the effect that occurs when consumers evaluate a product higher, if it is compatible with the goods of other consumers, M. Katz and K. Shapiro characterize as network external compatibility. In German-speaking countries, this effect is called the net effect, or net gain effect.

For further analysis, it is important to distinguish between direct and indirect network effects. An indirect, or market-related network effect occurs when the component products (spare parts, services, programs, etc.) become cheaper and more accessible. It occurs when, for example, along with the growth in demand for goods, as a rule:

- increases the substitutability of component products;
- service is improved in terms of advanced preparation of spare parts, technical and repair services, etc. ;
- market standards are formed that stimulate mass production, contributing to the improvement of product quality and reduction of production costs.

While an indirect effect is characteristic of ordinary market events, a direct network effect occurs only when the benefit of a product is directly enhanced through the use of a similar product by other people. For example, the benefits of telephone service, telex, fax, or e-mail manifest themselves primarily if they are used for communication purposes by as many people as possible. The wider the circle of subscribers, the greater the benefit of an individual consumer of system technology services, as with their growth the number of possible communication links increases. So, the phone itself does not bring any benefit to the owner, if other persons do not have it.

The increase in benefits that a network can provide to a user as a network effect solely as a result of an increase in the number of subscribers B. Metkalf expressed in the form of the following rule, according to which the cost (value) of a network is determined by the number of possible communication links between all users:

Metkalf's rule:

$$SS = K^2 - K,$$

where SS is the cost of the network;

K - the number of connected subscribers.

According to this "rule", if the cost (value) of a network for a single user is \$ 1, then with 10 subscribers it increases to about \$

100, and the network cost of 100 subscribers reaches almost \$ 10,000. A tenfold increase in size network leads to a hundredfold increase in its value (value). Metcalf proceeds from the fact that, for example, the benefit from the telephone network is the result of the total number of potential conversations, which is obtained from the sum of all possible two-way communications of subscribers. In online networks, this number is significantly increased, since it is possible to simultaneously connect three, four or more parties. These additional combinations dramatically increase the cost of networking. In addition to the physical expansion of a telecommunications system, the increase in the benefits of an individual subscriber network contributes to improving its quality (for example, as a result of improved functionality or offering additional services), wider geographical coverage, and increased access to the system.

The effectiveness of the direct network effect leads to the fact that the cost (value) of the network for the consumer directly depends on the number of partners in the system technology. Since systemic products do not have an initial commodity value (the telephone itself has no cost for communication), in the initial phase the partners must take into account adaptation losses due to the relatively small volume of communication links and the lack of a multi-directional communication flow. A certain minimum number of network subscribers is necessary in order for system products to gain sufficient value when it is used for a long time by consumers.

Considered from a technological point of view, trends and patterns indicate that the integration of market partners into physical as well as virtual networks is gaining more and more weight in economic activity and organizational processes. The development in the direction of a fully networked market business enterprise, in which coordination links will mostly be provided with technical means, is still in its initial stage, but in the coming years it will be constantly accelerated. These technical networks are increasingly becoming the basis of the production relations between an enterprise and its customers, employees and business partners. Management within such networks requires new managerial competencies.

It is obvious that investments in equipment in the telecommunications sector will be significantly higher compared with classical manufacturing enterprises. In many ways, the same can be said about the so-called information product, which usually refers to services that are in demand to eliminate the actual or potential infor-

mation deficit. K. Shapiro and H. Varyan argue that information is expensive to produce, but cheap to reproduce. Economists believe that the production of an information product is associated with high fixed costs, but with low marginal costs. The cost of producing the first copy of an information product can be very significant, and subsequent copies (reproduction costs) are negligible. If the news was once broadcast, then the marginal cost of releasing further blocks of these messages is close to zero.

These findings ultimately indicate a significant shift in the cost structure of enterprises towards the predominance of fixed costs. Studies confirm that in most industries, their share has increased markedly, and it reaches its maximum in the production of chips, where it sometimes exceeds 90%. The development towards domination of fixed costs and reduction of marginal costs of production of a product means a serious challenge for enterprises, since the costs of experimental development, which should be borne by companies for the continuous improvement of the performance of modern technologies, are confronted by ever smaller market revenues. As a result, enterprises can no longer afford to make large pre-production investments alone and for this reason have to, for example, resort to participation in strategic alliances for the implementation of joint technological developments. Sometimes enterprises try to pursue a more flexible policy in the area of fixed costs, transforming their divisions into independent firms. Another way out of this situation is to look for new ways to make a profit. A typical example here is the introduction of a single tariff in telephone networks.

Not only shifts in the cost structure, but also changes in the situation with respect to the performance of products, which are reflected in the law of G. Moore, have a direct impact on the behavior of business entities. In accordance with this pattern, productivity in the semiconductor industry and microelectronics is constantly and extremely rapidly growing, and technological innovation is also changing rapidly, and the product life cycle is continuously shortened. This development, accompanied by price erosion, in principle applies to all industries that are heavily dependent on microelectronics, although, as a rule, to a lesser extent. For enterprises, this means that the "market windows", which are still open and provide them with revenues from the services offered, are becoming narrower and narrower.

Enterprises generally face the problem of time: due to the lengthening of technological development terms, their costs are con-

stantly increasing, while the time spent on the market stagnated at a very low level due to frequent alternation of technological developments and the associated replacement of the supplied products with more productive ones. Enterprises have a very limited time for the depreciation of pre-production investment. Moreover, in view of the erosion of prices, the producer gets an advantage, who will be one of the first to use the high price level for rapid depreciation in the market. Therefore, time has become a strategic success factor, because, firstly, when there is a delay in entering the market there is not enough time to cover high fixed costs, and secondly, a new standard can be formed that will predetermine the further development of the market. In this regard, the opinion is expressed that in multimedia markets, not large competitors absorb small, but fast - less agile, in other words, more innovative than rivals, market actors take the upper hand.

Technical developments affect not only supply, but also demand. Rapid replacement of existing equipment with more productive, while price erosion often causes a market situation of uncertainty, which has a direct impact on the behavior of the buyer, causing, for example, the phenomenon of deferred demand. The buyer may postpone the decision to purchase, firstly, in the hope of lower prices, and secondly, in anticipation of the soon emergence of a new, more productive technology.

In the future, according to the forecast, we should expect an increase in data transmission capacity [8]. Communication opportunities will be virtually unlimited. If these forecasts regarding the development in the field of the transmitting frequency range are justified, the transmission costs will decrease so much that they will not have any value for business entities. Ultimately, this trend can lead to the death of a distance, when the time and cost of overcoming distances lose their strength as a factor in communication constraints.

At the same time, it should be expected that the use value of networks, determined by their utility, will increase dramatically with an increase in the number of subscribers. The usefulness of networks as a direct network effect begins to increase only after reaching the so-called critical mass. This refers to the minimum number of users from which the system acquires a certain level of utility, ensuring long-term network operation. For systems that require the accumulation of critical mass, the so-called starting problem is characteristic, the solution of which requires specific measures, such as creating a base circle of

users, providing special insurance conditions, influencing consumer expectations, differentiating tariffs, etc.

It is possible that in the future, direct network effects will not be limited only to communication (based on technology) between people within a social system, but through information technology networks will be brought into other areas. For example, the use value of the content of information offered via the Internet may exceed the original cost of this content, especially through the use of hyperlinks. The more hyperlinking systems there are, the more fully the user can inform about their specific requests. The hyperlink structures are characterized by a direct network effect and thereby determine the cost of the information offered through the networks.

Thus, the emergence of a network economy is the birth of a new economic form. Of particular importance is the question of whether a fundamentally different management mechanism is operating in the industrial economy than in the information economy. K. Shapiro and H. Varyan argue that the main difference between these economic forms is based on the fact that the old industrial economy is guided by the effect of the scale of production, and the new information economy is driven by the network effect [8].

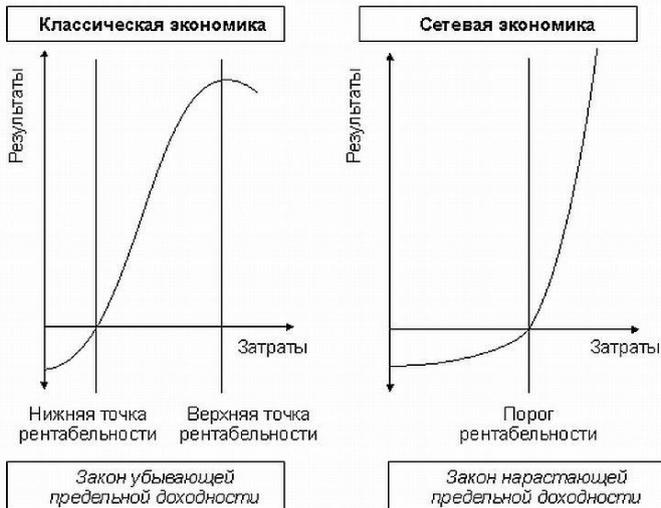
The key conceptual feature of a network economy is the occurrence of positive feedback.

The fundamental relationship between economic indicators in classical economics is expressed by the S-shaped curve, which characterizes the relationship between the indicators of costs and output with the assumed constancy of other important variables. This relationship is specified within the framework of generally accepted economic theory, for example, in the theories of production, costs, budget, wages, profits, etc. According to the law of diminishing marginal profitability, depending on costs, the income first grows in a larger proportion (area of increasing marginal income), and then a certain point is replaced by an increase in a smaller proportion (area of declining marginal revenue).

Based on the law of diminishing marginal profitability, the state of equilibrium of economic development usually occurs at the point where the increase in costs for a profitable unit (marginal cost) exactly corresponds to the additional benefit from this unit (marginal revenue), thereby maximizing the total benefit (profit). Thus, the negative feedback is triggered, which, according to the ideas of the classical theory, leads to an equilibrium state that reflects the optimal result of

the most rational use and distribution of resources under these conditions. In the ideal case, this achieves a balance between prices and market shares of products sold and, as a result, stabilization of the economy as a whole. Traditional economic theory was developed for economic forms in which the law of diminishing marginal profitability and negative feedback as a factor of equilibrium and stabilization work. This is observed in energy- and material-intensive industries, such as agriculture, mining, or manufacturing.

Fig. 3: Advantages of a network economy



Thus, in the network-oriented information economy, in contrast to the industrial one, it is not the law of diminishing marginal profitability that dominates, but direct network effects and thus positive feedback. This is embodied in the increasing marginal profitability, which arises in the case when the dynamics of income flow goes up exponentially (Fig. 3). The positive feedback in effect is generated and amplified for the following four reasons. In this case, the first two effects occur mainly in the field of demand, and the rest are in the supply area.

1. The effect of direct network effect. This effect should be considered as the main source of increase in revenues due to the increase in the scale of production, since, by definition, they are characterized by an exponential increase in utility.

2. Strengthening expectations. The usefulness of the accumulation of critical mass is determined, among other things, also by the expectations that participants in the system associate with its development. The faster the system expands, the higher the willingness of potential consumers to connect to it and thereby increase its utility.

3. The dominance of fixed costs and product with low marginal costs. In the conditions of domination of fixed costs and production with low marginal costs, which is typical primarily for the information product, telecommunication services or software, the manufacturer should strive to market the maximum possible production volumes in order to compensate for high initial costs with appropriate revenues. Here, too, there is a gain effect, and the mere reduction of fixed costs leads to a continuous increase in profits.

4. Effect of learning curve and accumulated experience. This effect can also be considered as a source of positive feedback. This means that the potential savings, which the company can realize to increase the share of value added, increases with increasing production volumes, resulting in lower real costs per unit.

Trends and patterns in the development of the communication environment indicate that the integration of market partners into physical as well as virtual networks is gaining more and more weight in business activities and organizational processes. The development in the direction of a fully networked market business enterprise, in which coordination links will mostly be provided with technical means, is still in its initial stage, but in the coming years it will be constantly accelerated. Information networks are increasingly becoming the basis of the production relations between an enterprise and its customers, employees and business partners.

3.2. The role of network strategies in stimulating innovation in regional markets

The experience of the Russian province is a challenge to orthodox views on exactly how the transitional period should take place at the local level. A familiar explanation of the dynamics of relations between the center and the regions in the Russian Federation was that the stronger the Moscow center can push reforms, the better the result. Although during the decade of reforms, true control from the center has weakened, regional and local governments have been forced to deal with the fiscal, production, economic, and social consequences of the center's policies.

This process was analyzed by L. Vardomsky, who examined in his writings the different approaches of the regions to overcoming the specific “local” manifestations of the economic crisis in the country. In an attempt to find a key that could be useful in the future, he analyzed local experience and made sure that a number of Russian regions (for example, on the Upper Volga) used a set of measures aimed at slowing down, softening or even anticipating the expected effects of liberalization, marketization and privatization conducted by the Russian government [9, 10].

Such measures, initiated by regional authorities, led to complex and controversial events that developed against the background of a rapidly changing and unpredictable economic environment. Since some measures within the framework of the local policy were contradictory to the neoliberal development strategy during the transition period, sometimes the central government itself actively tried to reduce their effectiveness, which was not convenient for the chosen economic course.

These measures were implemented not without difficulties, but in most cases gave the desired direct (favorable supply conditions and lower inflation, higher rates of health of citizens and lower mortality) and the indirect effect of economic activity (low degree of monopolization and criminalization of the supply chain). Such a socio-economic tactic has long been distinguished by regional bodies. Economists (and analysts committed to the neoclassical tradition) are often surprised that the consequences of such measures could have been felt for a decade in the market economy of Russia.

However, this effect does not contradict the laws of the market economy. According to the natural dynamics of the development of simple markets, the differences between the interconnected parts of a larger system are reduced. In their resistance to the pressure of the center in favor of unconditional acceptance of all-Russian conditions, local authorities relied primarily on horizontal ties within the region and often even resorted to power politics in order to maintain sufficient economic autonomy and ensure the functioning of such a semi-autonomous approach within the region.

The analysis of such an original approach testifies to the self-supporting economic logic of many measures in the field of supply and demand undertaken by local authorities. The economic reasons for success are clear: they run into the control and stabilization of local production aimed at local consumption; the use of a combina-

tion of markets with controlled and uncontrolled (but subsidized) consumer prices; preemption of simultaneous failure / corruption in the wholesale and retail distribution channels. This approach can be called the formation of network structures that ensure local economic security.

In some regions, private retail trade was tightly controlled and taxed, and these revenues were used to partially finance (at the expense of local funds only) certain aspects of the previously existing “safety net”. Such is the socially positive side of what is called “protectionism” in the work of L. Vardomsky [9].

Measures taken by regional authorities either acted on the supply side and included direct interventions to manipulate prices, or indirectly influenced the course of events on the demand side. The practice of regulating the consumption of a number of main products was widely used in order to mitigate the threat of reducing the subsistence minimum in crisis situations. This affected the volatility of demand, slowed down the tendency to loss of labor, reduce waste and contributed to the implementation of social programs.

In some regions, there were periods of a strict ban on the “export” of certain “basic” products produced in the given territory to other regions of the country. In a sense, this restriction became an advantage, since their connections with retail trade were maintained through the local wholesale network. The maintenance of such a distribution system was supported by the rationing system and price controls in the early years of the transition period. The wholesale distribution network in other regions of Russia often refused to offer local products to the market (due to the fact that the sale of excess goods subsidized by the EU brought higher profits to wholesalers; that wholesalers as monopolists could simply exclude cheaper goods or small manufacturers; that dense criminalization developed distribution network), and manufacturers faced fewer problems. The loss of the wholesale distribution system is the main reason for the decline in production in many regions of Russia. This is the main reason why small and medium-sized manufacturing enterprises have difficulties of becoming against the background of the powerful effect of generally reduced aggregate demand.

An analysis of the functioning of markets in the period of transformation of non-equilibrium economic systems provides a basis for asserting that such measures can be interpreted as a form of common market pragmatism. Such an approach allows for the subse-

quent emergence of market forces, however, only after enough time has passed when the appropriate institutional development of the network structure will allow them to function successfully.

In Europe, Mondragon, a system of grassroots cooperatives in Spain (Mondragón Corporación Cooperativa), can serve as an example of such successful networking.

The development of network cooperation began with a technical school for training local steel makers, which became a small cooperative business for the production of steel-smelting furnaces. With funds collected locally, used equipment was purchased from a bankrupt company and then updated. A bank was opened to manage the savings of employees and the assets of the pension fund, which then began to place these funds on new enterprises owned by employees.

Mondragon today is a network of 160 cooperatives, with 90 of them being industrial producers, many of them are engaged in large export sales. Among them are the largest manufacturers of the refrigeration and machine tool industry in Spain, as well as the country's only manufacturer of computer chips. The profitability of cooperatives often double the average level of profitability of Spanish companies. The profits are distributed between the employees' pension fund, reinvestment funds and charitable donations in the proportion of 70:20:10. The Mondragon Bank (Lankide Aurrezzkia Bank) has played an important role in providing borrowers with technical support and assistance in the area of innovation stimulation, if necessary.

Thus, cooperation creates an economic environment conducive to the innovative development of small business.

Cooperation and entrepreneurship are two sides of the market economy, actively interacting with each other, encouraging change and development. These interactions, in our opinion, constitute the most important moment in the development of the innovation potential of Russian regions, since they allow us to see and evaluate a wider and more specific range of conditions for the implementation of reforms than the general conditions of a market economy. Summarizing foreign and domestic research experience, we can conclude that the development of networks of horizontal cooperative relations. is an important prerequisite for stimulating innovation activity in determining the strategy for managing small businesses. The market economy as a system of production relations is a self-regulating phenomenon, having as its basis the independent activity of people, their interests and motivations.

Effective stimulation of the innovative development of small business can occur when creating certain conditions for its functioning. These include: first, the formation of horizontal links, which are the basis of the technology transfer infrastructure and information exchange system; secondly, the formation of vertical links in the form of the organization of centers for the assessment of technologies; thirdly, the creation of centers for regional development and distribution of new technologies; fourth, the implementation of the financial-saving system of production and technological support of small innovative entrepreneurship based on the potential of existing large industrial enterprises.

The state also participates in the organization of these processes (by issuing relevant regulations in the field of entrepreneurial activity, etc.). The economic sphere and in particular the development of small business can be influenced, but not directly, but indirectly, by creating a favorable economic environment conducive to its formation and development in the right direction. Of course, we are talking about the development of innovations in small business, competition in the introduction of advanced business practices, the impact not on entrepreneurs, but on the environment in which they operate.

The analysis of the experience of regional support for small business allows us to conclude that reliance on the development of horizontal ties and the development of cooperation is undoubtedly an essential condition for the preparation of market development and the functioning of small business. At the same time, not direct, but indirect measures of influence, and especially tax ones, work most effectively. In this regard, there is a gradual abandonment of direct measures of influence, since the assistance of local government in this form does not stimulate entrepreneurial initiative and innovation activity, and sometimes even hinders it.

3.3. The organization of a virtual enterprise for the formation of a system of incentives for innovation

The basis for the implementation of innovation processes is an innovation project, which is a set of documents regulating the technical, economic, organizational, legal and other aspects of planning and implementing a set of investment measures.

Cooperation of small enterprises with research teams of universities and large enterprises can be more large-scale and fruitful if

we implement networking and evaluate investment investments depending on the stages of their life cycle. The starting point and defining point of this cycle is the generation of an idea; the next link is the materialization of the idea in a certain system of machines and the corresponding technology; and production is the use of scientific and technological advances. The life cycle of innovation has time, labor and cost estimates used to organize the planning, financing and use of scientific and technical products. The innovation process is the process of transforming scientific knowledge into innovation, i.e. a consistent chain of events in which innovation ripens to a particular product, technology or service and is distributed through practical use.

Unlike scientific and technical products, the innovation process does not end with the introduction — the first appearance on the market of a new product, service, or bringing to the design capacity of a new technology. This process is not interrupted even after implementation, because as it spreads, innovation improves, becomes more efficient, acquires new consumer properties. This opens up new areas of application for it, new markets, and, consequently, new consumers who perceive this product, technology or service as new for themselves.

The process of creating and mastering new equipment (PSNT) begins with basic research (FI), aimed at obtaining new scientific knowledge and identifying the most significant patterns. FIs are divided into theoretical and search. The results of theoretical studies are manifested in scientific discoveries, the justification of new concepts and concepts, the creation of new theories. FIs are financed, as a rule, at the expense of the budget on a competitive basis, and also partly at the expense of extra-budgetary funds (charitable, commercial and other funds). In other words, the personal professional qualities of a researcher are funded, which act as a guarantee of a high level of work and possible results. According to experts, the positive yield of FI in world science is only 5%, therefore, the predicted commercial risk can be estimated at 95%.

Search research includes the task of which is the discovery of new principles for the creation of products and technologies; new, previously unknown properties of materials and their compounds, methods of analysis and synthesis. They are more clearly focused on obtaining results that have potential and estimated applied production value in the priority areas of commercialization of scientific and tech-

nical achievements. Funding for these studies is carried out by any investors interested in the final results - government agencies, commercial organizations, innovation funds, etc. Experts cite a number of specific reasons for the current difficult situation in basic science, one of which is the absence of a mechanism for an objective assessment of scientific results and the effectiveness of scientific work. , measuring the level of fundamental contribution of individual scientists and research teams. In such circumstances, the risk that investment in these studies will not pay off can be estimated at 90%.

The second stage of PSNT is applied research (PI), aimed at finding ways of practical application of previously discovered phenomena and processes. Applied research and development (R & D) aims to solve a technical problem, clarify unclear theoretical issues, and obtain specific scientific results, which will later be used as a scientific and technical section in research and development. In addition, PI can be independent scientific works. The procedures for monitoring the activities and results of such studies are quite stringent.

According to statistics from industrialized countries, approximately 85-90% of R & D give results that are suitable for further practical use, so the risk of no return on investment at this stage of the life cycle can be estimated at 10-15%.

- The final stage of scientific research is experimental design work (R & D). A kind of transition from laboratory conditions and experimental or pilot production (EP / OP) to industrial production (PP). At this stage, the final verification of the results of theoretical studies is carried out, appropriate technical documentation is being developed, and samples of new equipment are being manufactured and tested. Created documentation, accumulating intellectual search and solutions, is in itself an intellectual product with high consumer properties. Estimated indicators of design know-how are: useful effect, coefficient of knowledge intensity; know-how ratio of financial value [27].

- The probability of obtaining the desired results increases from R & D and at the OCD stage, according to experts, 95-97% end positively. Therefore, the predicted value of risk can be taken equal to 3-5%.

- In the face of declining allocations for science, the relationship between FIs: PIs: OCDs increases towards OCDs. This is a consequence of a market economy, forcing science to engage in applied work in order to “survive”, and enterprises to focus on the use of borrowed scientific and technical achievements.

• The final stage of the sphere of science is the development of industrial production of new products (OS) or pilot production (OP). Evaluation of the results of this phase can be carried out on the basis of the following actions:

- the quality and efficiency of the applied design and technological solutions is checked, inevitable errors, omissions, omissions are eliminated, new solutions are proposed;

- determined by the commercial feasibility of the developed product in relation to the capabilities of the existing production - the accuracy of the equipment, the capabilities of materials, technology, organization of production, qualification of the staff served, environmental protection, etc .;

- the final requirements for product design are determined - design, packaging, accompanying documentation, after-sales service;

- final requirements for reliability and conditions of use of products by the consumer are determined.

- The factors hindering the development of innovation in the enterprise include, first of all, the lack of own financial resources and high interest rates on loans from commercial banks, the “contraction” of domestic demand and the economic risk of developing new products.

After the stage of development begins the process of industrial production (PP). At the stage of PP there are two stages: own production of new equipment and sale of new products to consumers. The first stage is the direct production of materialized achievements of scientific and technical developments on a scale determined by the demands of consumers. The purpose and content of the second stage is to bring the new technology to consumers. As indicators of assessing the commercial attractiveness of products created can serve as indicators of competitiveness.

If we accept that the proposed GM are still relevant. The following rational cost-cost ratios between stages of PSNT, having quadratic dependence from stage to stage: FI-20, NIR-22, OKR-24, Os-28, are then fair; %, 50% and 20% [27].

Consequently, at each of the stages of the innovation life cycle, an emerging idea, a constructive or technological solution, as well as a sample can serve as an object of sale, i.e. are commodity. Any business entity, innovative enterprise, individual entrepreneur, starting to search for the most rational strategies for creating high-tech

products or scientific and technical innovations, always faces the need to constantly solve the following task: whether to bring your idea, development to the final product (production sample) or at each stage, determine the degree of risk and, at its high level, stop further investment, turn the result of research and development into a product and sell it Interested consumers. Spacing of stages not only in time but also in space by creating a network of executors of a common innovative project can become a method for solving problems.

As a means of developing a cooperative strategy in small and medium-sized businesses, we propose a model of a virtual enterprise operating in a networked economic environment. Virtual enterprise is a new form of economic organizations. It is a group of economic entities that unite their forces to provide a certain service or product that has traditionally been provided by one enterprise. Such an opportunity, ultimately, seriously affects the development strategies of the entire economy, as well as of individual enterprises.

– The launch of a new product or service on the market is becoming possible for much smaller organizations with only a fraction of the capital required by the traditional method. This will lead to increased competitive pressure on traditional organizations.

The location of the partners of the virtual enterprise will lose its relevance, which will intensify international cooperation and lead to a more intensive movement of activities between countries and regions.

In general, it will actively contribute to the renewal and expansion of the range of products and services, which is one of the prerequisites for further economic development.

– Traditional organizations will face emerging competition from non-traditional enterprises and are likely to be forced to invent new ways to organize their production.

The Internet provides any individual with the opportunity to exchange information with any person anywhere in the world, and this allows you to create a community of people for interests for which distance does not matter (e-commerce is part of this scenario). At the same time, modern technologies to support business processes allow them to cross company boundaries and “connect” again via the Internet. Thus, there is the prospect of cooperation between economic entities for the organization of joint ventures and the possibility of dynamically restructuring their configuration as necessary. Ultimately, this will lead to a powerful breakthrough in productivity, organization,

international exchanges and economic growth due to the following factors:

- innovative products and services that provide efficient and low-cost customer service worldwide by combining communications, e-commerce and automating business processes;

- structured and described processes, where the client is a direct participant, and the processes on the basis of Workflow trace transactions, crossing the boundaries of departments, companies and enterprises;

- Efficiently built organizations that provide the best service through the implementation of integrated business processes based on Workflow, despite the internal structure that is adapted to market needs;

- dynamic mutually beneficial cooperation between enterprises and individuals; The best market services will be based on the optimal performance of each of the united partners, which is achieved through business process management based on the latest information technologies.

- These factors point to those key issues that are critical to the existence of any virtual enterprise. These are processes and information technologies that set the tone in the context of automating business processes, above all, the technology WORKFLOW (translated as workflow performed within the framework of business processes of an enterprise), knowledge management technology, electronic data processing (EDI) and, of course, all technologies related to work on the Internet. Managing the work flow and through it through the relevant business process, which is implemented in the enterprise by various departments and services, is the primary task of the Workflow technology. The emergence of Workflow technology and related software is the reaction of the information technology market to the introduction of new principles in the management of enterprises and a change in the orientation of the enterprise management system with a function-oriented process orientation.

- These trends imply the support of a constantly evolving set of processes that exist between enterprises, and not only within a single enterprise. At the same time, enterprises must develop an infrastructure of information support that can evolve with these processes.

- Using a modern, well-developed outsourcing system and new methods of electronic communications, modeling and monitor-

ing, virtual enterprises can reduce the time and cost of creating a new product cycle, reduce investment costs and risks, and increase the value of their innovative products.

- With the help of experts, a virtual enterprise carries out an initial and then a final selection of innovations of an enterprise or a scientific organization, identifies market risk factors, as well as factors that ensure commercial success. Further analysis of the effectiveness of investment at the stages of the product life cycle. If for a business entity (entrepreneur), for various reasons, investing at subsequent stages is not appropriate, then it stops investing and draws up an intermediate product as a commodity. If the expediency of investment is confirmed, then the degree (probability) of success P is determined, a comparison with the permissible probability of success is made: $P > R_{dop}$. (for example, 0.9). If this inequality is fulfilled, the investment continues to the stage of industrial production and subsequent sale of products.

When assessing the effectiveness of using own or borrowed capital to finance innovations, innovative (investment) projects are evaluated using indicators characterizing the efficiency of investments.

Obviously, a project that is generally effective, but financed with “expensive” loans, cannot be attractive to an initiator or potential investor.

Thus, since fundamental research and development can serve as the beginning, the source of several PNIR, and each PNIR - several OCD and PTR, etc. You can build a kind of tree decomposition, which includes all the possibilities of the network of interaction of organizations creating FNIR.

After the set of supporting processes is fully designed, each function in each process must be tied to a specific resource in order to sum it up.

A business process can be schematically represented as a sequence of operations (works, functions) performed by individual employees using certain information (documents, data from databases, e-mail, etc.) and in accordance with some rules that dictate the order of performance of work, determine the routes of movement of documents, the timing of individual functions. The creation of such a sequence is carried out using the information management system – WORKFLOW.

The Workflow system is obliged to support all components of the process and their various interrelations (role, information, time,

route, etc.), therefore its functional fullness reflects the structure of the process, its elements and most of the concepts and definitions of Workflow is based on the concepts of the process. Workflow applications use several levels of different categories of information management organization activities: processes, functions, instances of processes and functions, work orders, participants, applications and information of various types and types from the point of view of sources and carriers, and the following terms are used to formulate the rules: role , routing and work queue.

Workflow systems can provide automation and support for a complete process by assembling and managing all of its previously described components. In this case, Workflow contributes to the rationalization of the entire process, regardless of the number of units involved in it. The system can:

- automatically generate warnings in case of a process slowdown and accurately indicate the place where it stalled or slowed down;
- accurately reflect the state of the process, allowing the help center to provide customers with accurate information about the state of the serving process;
- provide statistics not only for each function involved in the process, but also for the combined totality of results, reflecting the efficiency of the enterprise from the point of view of customers;
- provide results of cost analysis by type of process and make a concrete contribution to the continuous improvement of processes.

Upon completion of this stage, the small enterprise will have a list of necessary resources, and for each resource, a list of the functions that it will have to perform, along with a description of the input, a description of the output, and specifications for the quality of service.

The methodology for doing this work is well known. All of them are organization methodologies that help an organization specialist to distribute and group tasks as efficiently as possible.

When an accurate description of the work and resources needed and the exact specifications of the functions they need to perform, the next step is to select and allocate resources between different processes.

With reference to a virtual enterprise, the basic principle at this stage is to find resources outside the structure of the enterprise. This includes the rental of warehouse, reference, production, assembly, accounting services, placement of e-commerce applications, etc.

The idea is to, based on a comparison of the results or financial commitments of various suppliers with benchmarks in the industry, select the best supplier for each resource, taking into account the previously prepared specifications of functions.

A special approach is required only to resources that are of critical importance, which in itself is a distinctive part of the service offered in the sense that the organization's own resources will be established within the enterprise.

One of the most important advantages of such an organization is a sharp reduction in the amount of start-up capital for establishing a new business, since most of the necessary resources will be raised on a contract basis and paid as services are provided. The enterprise, in this case, relies on the investments, personnel, tools and methodologies that are already available. This will contribute to a decrease in investment of more than three times compared with traditional structures.

The second advantage is a significant reduction in the time required for commissioning the service, compared to traditional methods.

After all the resources have been identified, the most pressing issue is the ability of the management of a small enterprise to exploit a complex set of resources controlled by many different and independent organizations. Workflow tools on the Internet are called upon to play the most important role in this:

- Workflow tools can support interorganizational processes and automatically transfer each function planned according to the process description and business rules, the proper resource for execution, and accompanying it with the proper input information.

- Internet, provides a universal communication and presentation environment that allows you to effectively deploy applications anywhere and at low cost thanks to generally accepted and widely supported standards.

Without Workflow, the cost of operating such a complex would undoubtedly nullify the effect of the expected benefits. However, as we saw earlier, these same tools should and will be used to overcome the shortcomings of traditional enterprises. It is here that Workflow and the Internet will truly open up new perspectives, allowing you to create different organizations with economic entities that have different structures.

The most important part of monitoring such a network structure, covering a number of economic entities, is the control that each entity fulfills its contractual service obligations.

Here again, Workflow tools come to the scene, solving this task with the help of registration mechanisms that record each event with the date, time and participant. Such a detailed logbook provides complete traceability and serves as the basis for monitoring and managing the quality of services provided by each entity in the chain.

This feature is an intermediate result of the automation of all business processes based on Workflow and does not require additional costs.

A virtual enterprise, if necessary, relies on one individual or on a small group of prospective-minded leaders, who initially developed the service and decided to implement it. It must assemble a team of highly qualified specialists to carry out the following tasks:

- design of all processes required to support this service;
- forecasting market opportunities in order to determine the volume of necessary resources and its continuous adjustment;
- active marketing of planned services and their protection by all available legal means;
- contracting the necessary resources;
- audit of the services provided in terms of quality;
- constant comparison of contractual resources with benchmarks and the mobilization of alternative resources where appropriate.

All these functions are more or less “intellectual” in nature and can be effectively supported by knowledge management technologies.

Workflow systems should be able to automate processes that go beyond the boundaries of the company, within the entire chain of added quality of a virtual enterprise - “producer-client”, “supplier-producer”. The advantage of these systems lies in their ability to easily “stitch” various applications, supporting the business process by integrating users and other systems.

Basic requirements for Workflow systems within a virtual enterprise:

- full-featured routing - focusing on outsourcing implies the ability to direct work to employees, clients and partners;
- flexibility (easy adaptation of the process using a graphical description, dynamic linking of process fragments on the fly, allowing participants to use existing functions and, with the necessary authority, create new adapter interfaces to communicate with document management systems, ERP systems, and technology);

- scalability (basic functions are distributed among several nodes and at the same time function well on small servers).

Thanks to WfMC standards, Workflow products can interoperate through Internet infrastructures within a virtual enterprise.

The process of evolution towards a truly virtual enterprise will, in all likelihood, be very long, since it requires numerous changes in current practices that exist in many areas of activity. This evolution:

- will have legal consequences;
- will require new methods for assessing the assets of an enterprise, based not only on their physical characteristics and number of staff, but also on such significant factors as the ability to attract a large clientele, conduct business flawlessly and provide products and services that have real added value;
- change the relationship between trade unions and enterprises;
- will generate massive movement of activities between countries and large economic regions, leading to the need to create new regulatory mechanisms for the distribution of work at the international level;
- change the nature of competition between enterprises, in some cases destroying the current barrier preventing new competitors from entering the existing business, thanks to the introduction of new methods of distribution and production.

For e-business, the key is a clear definition of business processes. Workflow systems are vital for virtual enterprises because they are aimed at automating PROCESSES, “being able” to integrate various applications, as well as “being able” to communicate with each other, which ultimately will ensure the most effective formation of the incentive system for innovation activity of any enterprise.

CONCLUSION

The dependence of the success of the enterprise on innovation has long been recognized by both theorists and practitioners. The focus is on the focused and rational management of individual phases of the innovation process. The degree of depth of study of these phases is very different. While the phase of the actual product development has been studied quite thoroughly, the early phase of the innovation process, the so-called “unclear front”, has not been studied enough. This state of affairs in no way reflects the enormous significance of this phase, because it is here that the development projects will be carried out by the enterprise, and this directly affects the effectiveness of innovation in general. In addition, the early phases of the innovation process, especially in the case of radical innovations, i.e. original and from a market and technological point of view, are considered by many authors as not amenable to organizations, which calls into question the possibility of purposeful stimulation of innovation activity, and thereby planning the long-term development of an enterprise.

Strategic decisions on innovation can and should be made only in connection with decisions in the area of the overall strategy of the enterprise and the strategic production program. They predetermine the initial conditions of decisions regarding the subsequent process. The strategy allows you to pre-set the bar in the innovative aspirations of the enterprise. However, in the practice of entrepreneurship. Innovation can have a decisive influence on the strategic direction of an enterprise's policy. In small and medium-sized enterprises, it often happens that the only innovation for a long time predetermines the development of the entire enterprise. This demonstrates the decisive importance of stimulating innovation at the very early stage of the organization of the innovation process.

The following strategic decisions are decisive for the innovation process:

- choice of market or market segment;
- approval of the applied technology;
- selection of goods and services to be made at the enterprise;
- decision on cooperation in development, production and marketing;
- establishing the volume and speed of the process of updating goods and services.

The early phase of innovation also includes the search for ideas and their evaluation. In this phase, searches of creative ideas for problem solutions are carried out.

Innovation management is implemented in the form of innovation management, which covers all strategic and operational tasks of management, planning, organization and control of innovative processes in the enterprise. In a broad sense, it should be understood as change-oriented management. Such management differs in its essence from decision-making processes in other industrial areas, since innovative solutions are not routine, but imply a broad understanding of the problems of the enterprise and the creative abilities of employees. In principle, small and medium-sized enterprises for the successful implementation of innovative projects can take advantage of two alternatives to the transition to radical innovation or the use of cooperative strategies.

In the first case, enterprises themselves develop innovative technical background and implement the results obtained on the market. This approach is focused on radical innovation and is associated with large and constantly growing financial costs, due to scientific and technical progress, and thus with enormous economic risks. This applies primarily to products of high technical level and great complexity. All this is basically only for large enterprises.

Within the framework of a cooperative strategy, small and medium enterprises cooperate with other companies. In this case, cooperation can be carried out at all stages of the innovation process. Cooperation of small and medium-sized enterprises in order to improve competitiveness and reduce risks is becoming more widely used in large-scale innovations. Cooperation can take place in various forms, for example, in the form of a strategic alliance, cooperative research, cooperative production, or cooperative marketing.

The paper analyzes the use in the initial phase of stimulation of both incremental and radical innovations of the intuitive search methods used in solving the problem: brainstorming and synectic.

The general direction of the methods used is to identify internal boundaries and barriers, stereotypes and overcome them. These methods allow you to adjust the images and representations formed about the object, and therefore go beyond the usual. It is this kind of overcoming of stereotypes that lead firms to radical ideas of new products, open new niches in the market, and sometimes in principle change the very concept of a product.

There are two approaches to the organization of innovation in the process of creating a new product. Some companies are trying to give this process some orderliness, embed innovation in the development strategy. However, in many enterprises this process is chaotic and subjective.

Under the market for the majority of Russian manufacturers is still meant purely Russian market. But it is quite possible that in ten years there will be no Russian market, and there will be a single global market. It is necessary to think about this now, and it is possible for some enterprises to develop not in the direction of diversification, but in the direction of concentrating on a certain relatively narrow market segment and organizing cooperative ties.

However, some enterprises prefer to develop "not related" businesses for them. Accordingly, the entire innovation process is built. In our opinion, for the main part of Russian enterprises, unrelated diversification means dispersion of already meager means and resources.

In terms of developing innovative ideas, our companies as a whole are following the global trends:

- the share of research institutes is decreasing;
- increasing influence in the science of educational institutions;
- Russian enterprises began to buy more licenses;
- many managed to drastically reduce development time.

An important lever of innovation development is the stimulation of radical innovations through the organization of technological transfer. In the field of research and development, the following differences are made: fundamental research is not directly related to the product, applied research is aimed at the future application of the results obtained, and in the course of development, the specific market result is of primary interest. As for this sphere in the conditions of small and medium enterprises, their business is limited, as a rule, to developments; research in the proper sense is here in the background.

Based on their target installations, these enterprises can carry out the technical realization of the product through their own development (possibly research) or resort to cooperating with other companies. In principle, this problem should be solved taking into account the following points:

- final clarification of the problem and development of a fundamental solution for a new product or new service;

- constructive development of the product up to the creation of a prototype;
- design and pre-production for a new product with the manufacture and testing of a prototype, production equipment and zero series.

At this stage of innovation, it is recommended to resort to external sources of knowledge, for example in the following forms:

- exchange of scientific and technical information through participation in conferences, fairs, publication of articles;
- transfer of knowledge due to the hiring of employees with special training, university graduates;
- joint research with other enterprises;
- acquisition of patents and licenses for use in a special project;
- cooperation in development.

The constantly growing influence of modern technologies on the competitiveness of small and medium-sized enterprises requires the targeted use of all the possibilities of technological transfer.

Stimulating the innovation activities of enterprises in transition periods is provided by a cooperative strategy. Cooperation creates an economic environment conducive to the innovative development of small business.

Cooperation and entrepreneurship are two sides of the market economy, actively interacting with each other, encouraging change and development. These interactions, in our opinion, constitute the most important moment in the development of the innovation potential of Russian regions, since they allow us to see and evaluate a wider and more specific range of conditions for the implementation of reforms than the general conditions of a market economy. Summarizing the foreign and domestic research experience, we can conclude that the development of cooperative relations is an important prerequisite in the development of small business. The market economy as a system of production relations is a self-regulating phenomenon, having as its basis the independent activity of people, their interests and motivations.

Effective stimulation of the innovative development of small business can occur when creating certain conditions for its functioning. These include: first, the formation of an infrastructure for technology transfer and an information exchange system; secondly, the organization of technology assessment centers; thirdly, the creation of centers for regional development and distribution of new technolo-

gies; fourthly, the implementation of the financial-saving system of production and technological support of small innovative entrepreneurship based on the potential of existing enterprises.

Information networks are increasingly becoming the basis of the production relations between an enterprise and its customers, employees and business partners. Innovative management within such networks requires new management decisions with a focus on developing cooperative strategies.

As a means of developing a cooperative strategy in small and medium business, a model of a virtual enterprise operating in a network economic environment is proposed. Virtual enterprise is a new form of economic organizations. It is a group of economic entities that unite their forces to provide a certain service or product that has traditionally been provided by one enterprise. Such an opportunity, ultimately, seriously affects development strategies at both the macroeconomic level and the microeconomic level of individual enterprises.

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