The XXI century is fairly called the era of rapid changes in the geopolitical and socio-economic life of society. A man in an effort to adapt to his needs the external environment, to defeat time and distance, has accumulated a sufficient mass of innovations in various spheres of his activity. This has led to the transformation of traditional commodity markets and their integration into a single global space, which is characterized by a higher intensity of competition. In addition, world society has undergone a significant depolarization of the centers of poverty, which led to social isolation of the population of the countries. This upgraded the need to create a roadmap for social inclusion for people who fell below the poverty line. Among the key tools of such a roadmap, the innovation entrepreneurship is considered as an opportunity to earn money for poor and socially vulnerable groups of the population who do not have the means to implement large-scale and capital-intensive projects, but are able to realize creative business ideas using unique intellectual resources and personal abilities.

The need to ensure social inclusion through innovative entrepreneurship in Ukraine is due to a number of current circumstances. A country that did not manage to recover from the global financial crisis was in a protracted turmoil of events caused by confrontation of the military conflict, annexation of territories, economic and political instability. Of course, all this has affected the welfare of the population, resulting in a significant increase in the number of poor people. According to recent years, 23.8 per-
cent of the population was at the expense of relative poverty. The deteriora-
tion of the labor market, especially in regions with a large population of
displaced persons, was one of the main factors of the aggravation of poverty
problems. If in 2011 the unemployment rate in Ukraine reached 7.9% of the
economically active population and gradually decreased over the next two
years (by 7.5% in 2012, by 7.2% in 2013), due to the loss of employment
by forced migrants the unemployment rate increased to 9.3% in 2014 and
remains at 9.1% (2015) and 9.6% (2016) [1]. In addition, one out of every
five unemployed is in a state of unemployment for more than 12 months.

The results of the Social Development Index 2017 indicate that coun-
tries achieve significantly different social progress, even at the same level
of GDP per capita [2]. According to published data, if last year Ukraine,
with a score of 66.43 points (at a maximum of 100 points), led a group of
countries with a development below the average, then its new score of 68.35
points allowed it to move to a higher category. At the same time, a number
of other countries over the past year have made even more progress. As a
result, if a year ago Ukraine in the ranking was 63 of the 133 countries, then
in this — 64th among 128.

Research by many scientists proves that poverty significantly impedes
human development, generates social conflicts, and threatens the unity of
society. An effective instrument for combating it should be the implemen-
tation of innovation entrepreneurship in the national economic system.

There is now a claim that entrepreneurship contributes to economic
growth through innovation and job creation [3]. In addition, entrepreneur-
ship has a long history of leadership in matters of social inclusion. Let’s
recall, for example, the philanthropic activity of such innovators as Andrew
Carnegie and John Rockefeller. However, in recent years, we are witnessing
growing dissatisfaction with the public by the “elite”, when the so-called
“one percent” is considered prosperous at the expense of other “99 percent”.
Especially with the onset of the global financial crisis, many corporate ex-
cutives are accused of taking unnecessary risks, unethical behavior and
the fact that they do not share the fruits of entrepreneurship. The general
result was the fall of public confidence in big business. So the credibility of
large US companies over the decade does not rise above the lowest mark of
18 percent [4]. Trust in banks has fallen from 49 percent ten years ago to 27
percent today. A recent survey by Deloitte has shown that more than half of
the generation born at the end of the 20th century refuses to work in a particular organization if they have doubts about their behavior [5]. However, the ability of entrepreneurial activity to create (and maintain) employment is valuable in a period when so many people were unemployed.

In order to determine the state of development of entrepreneurship in the country, the data of DOING BUSINESS rating of World Bank Group [6] are recently used. It is based on the analysis of legal and regulatory conditions applicable to enterprises throughout the country throughout their life cycle, including the establishment and conduct of business, foreign trade activities, taxation, and liquidation.

In Table 1 and Fig. 1 shows data on the dynamics of changing the position of Ukraine in terms of Doing Business rating indicators during 2010-2017 and assessment of the identified trend.

**Table 1**

Dynamics of changing the position of Ukraine in terms of indicators of the Doing Business rating for 2010–2017 *

<table>
<thead>
<tr>
<th>Indicator of the rating</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Trend*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 — «Starting a Business»</td>
<td>136</td>
<td>118</td>
<td>116</td>
<td>50</td>
<td>69</td>
<td>70</td>
<td>30</td>
<td>20</td>
<td>positive</td>
</tr>
<tr>
<td>2 — «Dealing with Construction Permits»</td>
<td>181</td>
<td>179</td>
<td>182</td>
<td>183</td>
<td>68</td>
<td>139</td>
<td>140</td>
<td>140</td>
<td>stable</td>
</tr>
<tr>
<td>3 — «Getting Electricity»</td>
<td>–</td>
<td>–</td>
<td>170</td>
<td>166</td>
<td>182</td>
<td>138</td>
<td>137</td>
<td>130</td>
<td>positive</td>
</tr>
<tr>
<td>4 — «Registering Property»</td>
<td>160</td>
<td>164</td>
<td>168</td>
<td>149</td>
<td>88</td>
<td>64</td>
<td>61</td>
<td>63</td>
<td>negative</td>
</tr>
<tr>
<td>5 — «Getting Credit»</td>
<td>30</td>
<td>32</td>
<td>23</td>
<td>23</td>
<td>14</td>
<td>17</td>
<td>19</td>
<td>20</td>
<td>negative</td>
</tr>
<tr>
<td>6 — «Protecting Minority Investors»</td>
<td>108</td>
<td>109</td>
<td>114</td>
<td>117</td>
<td>107</td>
<td>87</td>
<td>88</td>
<td>70</td>
<td>positive</td>
</tr>
<tr>
<td>7 — «Paying Taxes»</td>
<td>181</td>
<td>181</td>
<td>183</td>
<td>165</td>
<td>157</td>
<td>106</td>
<td>107</td>
<td>84</td>
<td>negative</td>
</tr>
<tr>
<td>8 — «Trading across Borders»</td>
<td>139</td>
<td>139</td>
<td>144</td>
<td>145</td>
<td>153</td>
<td>109</td>
<td>109</td>
<td>115</td>
<td>negative</td>
</tr>
<tr>
<td>9 — «Enforcing Contracts»</td>
<td>43</td>
<td>43</td>
<td>44</td>
<td>42</td>
<td>44</td>
<td>98</td>
<td>98</td>
<td>81</td>
<td>positive</td>
</tr>
<tr>
<td>10 — «Resolving Insolvency»</td>
<td>145</td>
<td>150</td>
<td>158</td>
<td>157</td>
<td>141</td>
<td>141</td>
<td>141</td>
<td>150</td>
<td>negative</td>
</tr>
<tr>
<td>Overall</td>
<td><strong>147</strong></td>
<td><strong>145</strong></td>
<td><strong>152</strong></td>
<td><strong>137</strong></td>
<td><strong>112</strong></td>
<td><strong>96</strong></td>
<td><strong>83</strong></td>
<td><strong>80</strong></td>
<td>positive</td>
</tr>
</tbody>
</table>

* systematized by the author according to the data [7]
An analysis of Ukraine’s position in the Doing Business rating showed that the country needs to introduce further systemic administrative reforms that should lead to improvement of the business climate and, consequently, increase the position in the rating in the near future to 75-77 places. Expectations are mainly related to indicators: business and property registration, protection of minority investors, enforcement of contracts. If by 2020 this positive tendency to improve the position of Ukraine in the Doing Business rating will be maintained, this will be able to create an additional 50-70 thousand jobs and attract about 30 billion UAH of investments into the Ukrainian economy.

Improving the business environment creates preconditions for the formation of an inclusive business model in Ukraine.

The concept of an inclusive business model was first presented on July 1, 2008 in a UN report entitled “Benefits for All: A Strategy for Doing Business with the Poor” (Creating Value for all: Strategies for Doing Business with the Poor). It contained over 50 real business practices from around the
world, identified and systematized experiences that underpinned the definition of an inclusive business model. The report was prepared by the United Nations Development Program: “Inclusive Market Growth Initiative” with the participation of the Advisory Board, which included the International Business Leaders Forum, the International Finance Corporation, the main international donors of the United Nations (United States Agency for International Development and AFD), the World Business Council for Sustainable Development, the University of Michigan and the Harvard Business School.

In this case, the benefits of inclusive business models are not only in direct receipt of cash. The benefit for business is also in attracting new customers, expanding employment and strengthening the supply channels for raw materials and products. The benefits to low-income people include the satisfaction of basic needs, steady income and higher productivity.

Given the content and objectives of innovative entrepreneurship, several models of social inclusion can be identified.

1. Consulting Multiplication Model. This model implies the dissemination of successful experience of innovative entrepreneurship among inclusive audiences by practitioners themselves. They advise on the opening of their own businesses, which then sell their innovative products or services to the open market.

2. Venture model. Under such a model, large innovative enterprises or entrepreneurs innovators can participate in co-financing or lending their own creative work to poor people.

3. Model of employment. According to this model, companies provide employment and professional training to people who cannot compete on the traditional labor market (people with disabilities, homeless, socially vulnerable young people, former convicts). Such a model is widely used by civic organizations of various directions, as well as companies for urban improvement, coffee shops, courier companies, etc.

4. Philanthropic model. Entrepreneurs sell goods and provide services, and their revenue is almost entirely used to finance social programs. However, the existence of such a model has been repeatedly criticized by a large part of entrepreneurs due to contradictions with the competition law.

5. Communication model. The model is often used for the commercialization of social services or for the benefit of intangible assets, such as
It should be noted that the issue of using innovative entrepreneurship as a tool for providing social inclusion has both its supporters and opponents. Some studies indicate that technological innovations targeted by innovation entrepreneurship can exacerbate social inequality (work reduces people's wages or even employs jobs) [8]. These fears are not new, as evidenced by the rebellion of Lyon weavers in France in the XIX century and the resistance of the industrial revolution from the movement of Luddites in the UK. Such anxiety needs to be taken seriously, for example, by investing in advanced training and social security systems. At the same time, we also need to appreciate the positive aspects of technological innovation. Putting them into service can help to ensure social inclusion, creating opportunities for people to participate more in the economy and gain a greater share of benefits.

According to J. Schumpeter, “... the task of entrepreneurs is to reform and revolutionize the way of production by introducing inventions, and in a more general sense, through the use of new technologies for the production of new goods or former goods, but by a new method through the discovery of a new source of raw materials or a new market finished products — up to the reorganization of the former and the creation of a new industry ... “[9]. Thus, J. Schumpeter believes that innovation and novelty are an integral feature of entrepreneurship.

Indeed, the search for new ideas and their implementation — this is one of the most important, but at the same time and difficult tasks of the entrepreneur, because in this case, the entrepreneur needs not only the ability to think creatively and find new solutions, but also think perspective, anticipating future needs that are formed in society. Consequently, the task of the entrepreneur-innovator is to reform the way of production by introducing inventions, and in a more general sense, through the use of new technological opportunities for the production of fundamentally new products or the production of old goods by new methods through the discovery of a new source of raw materials or the new market of finished products — up to the creation a new branch of the economy.

Creation of innovative products and services is strategically a priority direction of ensuring competitiveness and, under current conditions of
management, is considered as the most important factor of growth. As the study proves, there is a correlation between the concept of “innovation” and “competitiveness”: the higher the degree of innovation, the higher the competitiveness of the economy. The Global Innovation Index for Ukraine has remained relatively stable for three years — 56-64 [10], while Ukraine’s position in the Competitiveness Index (The Global Competitiveness Index) ranged from 73 to 85 places [11]. Innovation considers such a position of Ukraine through the prism of disintegrators and stimulators of innovation development. Among the most significant disintegrators: the low level of financing of fundamental and applied scientific developments (0.62% of GDP including 0.21% at the expense of the state budget); insufficient part of intangible assets in the cost price of Ukrainian products which does not exceed 0.5-2% and 20 and more times lower than in economically developed countries; a low share of Ukraine’s presence in the innovation market (0.1% vs. 39% of the US, 30% in Japan, 16% in Germany [12], pp. 37-39), etc. However, the presence of world-renowned academic schools and the positioning of Ukraine in the priority directions of world scientific and technological development creates the prerequisites for integration into the world market of innovations and acts as a significant stimulator for the development of innovative entrepreneurship. According to the data of the State Statistics Committee [13], in recent years scientific and scientific-technical work in Ukraine was carried out by 978 organizations, 44.3% of which belonged to the state sector of the economy, 40.3% to entrepreneurship, and 15.4% to higher education. Of the total number of works, 9.9% is aimed at creating new types of products, 41.9% of which are new types of equipment; 7.5% — to create new technologies, 45.4% of which are resource-saving; 2.2% — for the creation of new types of materials; 5.8% — new varieties of plants, animal breeds, as well as 16.5% — for the creation of new methods and theories, more than half of which were used in future work. The share of executives of scientific research and development (researchers, technicians and auxiliaries) in the total number of employed population was 0.50%, including researchers — 0.33%. More than 50 innovative business incubators have been created, of which 12 are in Kyiv and Kyiv oblast, 9 in Odessa oblast; 18 out of 27 regions of the country have 1 to 2 business incubators, out of 255 existing innovative funds, 175 operate in Kyiv, and today there are 10 innovation centers, with higher educational
Institutions — intellectual property units, Ukrainian Institute of Scientific and Technical Information regional offices.

Improving technologies is essential for international competitiveness, business success, as well as for creating high-value jobs and solving large-scale social and environmental problems. Therefore, for the sake of prosperity and success in the next decades, the economy of the country should rely on high-performance science and an effective state innovation system.

The main feature of the current worldwide expansion of forces is the significant disconnection of the leaders of the countries that create the “innovative enclave,” from less powerful countries, which are forced to fully depend on the position of active players. The countries that lead in technological development, determine the directions and nature of global shifts, adapt to these changes from time to time. In countries-outsiders who do not keep up with the pace of world NTP, there is a deformation of the production system caused by the moral aging of the technological base. As a result, the positions of such countries on the world markets deteriorate, they start to import technologies, resulting in dependence (technological, and then economic) from the leaders of the countries.

Among the priority areas for innovation development for the UK, Germany, the United States, Finland and a number of other developed countries is space exploration, energy sector development, healthcare, biotechnology, information and computer technology; for India — information technology and software development, biotechnology development and space, for China — machine building, instrumentation and automation, chemical and petrochemical industry, biotechnology, microbiology, etc.

Consequently, industrially developed countries concentrate their efforts on the accelerated development of those sectors of the economy, which, on the one hand, provide a decisive contribution to the increase of labor productivity, and on the other hand, allow to maintain technological advantages over competitors.

According to experts from the Organization for Economic Cooperation and Development (OECD), in the USA in the 80’s and 90’s of the last century, at the expense of high-tech sectors, almost 50% of the total productivity growth was achieved, in the UK, Canada, Japan — more than 30, France and Italy — 25% [14]. At the same time, the industry structure of the “innovation countries” of the latest technologies was identical to the mid-90s of the last
Chapter 5. Social investments as a contribution to SMEs development

century — aerospace, automotive, electrical engineering, — each of which accounted for 10 to 15% of all R & D expenditures in the US, Japan and EU. But in the mid 90’s. The situation has changed qualitatively. In the USA, the service sector was the leader, represented by information technologies (20% of all R & D expenditures), which pushed the aerospace industry (12%) and automotive (11%). In the EU, electronics (15%), automotive (13%) and services (14%) became the leading ones. In Japan, priority areas are electronics (18%), electrical engineering (11%) and automotive (10%) [15, p. 44].

Technological developments taking place on a global scale concern a wide spectrum of technologies and cover all the main directions of modern scientific and technological progress. The basis of the formation of the global production system lies in the process of internationalization, which results in a trans boundary spread of technologies. Activating rivalry forces national producers to increase their competitive edge, including through the introduction of new technologies. Without sufficient funding to develop their own innovations, Ukrainian companies are constantly waiting for new global technological challenges. Among other things, it stimulates the international transfer of technology, as manufacturers seek to obtain cutting-edge technologies from abroad. In this way, domestic enterprises in 2016 acquired: energy transportation technologies, resource-saving technologies, new technologies for the production of materials, their processing and connection, technology for updating and developing the agro-industrial complex, modern information and communication technologies. In addition, intensive diffusion of knowledge is stimulated by the emergence of global information networks with open innovation.

In modern conditions there is a large number of technological innovations that affect the business. PwC’s experts have analyzed more than 150 modern technologies that are most relevant for business. As a result of this analysis, eight technologies were selected that will have the most significant impact on business in the near future: artificial intelligence, complemented reality, Blockchain technology, drones usage, Internet things, robotics, virtual reality, 3D printers [16]. Let’s consider them in more detail.

Technology No. 1 “Artificial Intelligence”. This technology is reduced to providing computer properties to knowledge comparable to those of the human brain. Most experts in this area agree that there are three varieties of artificial intelligence:
Artificial Narrow Intelligence (ARI) is the first level of artificial consciousness that specializes in decision making in just one area of activity;

Artificial General Intelligence (AGI) is the artificial intelligence of the second level that achieves and exceeds the level of ordinary human consciousness: can solve mathematical and logical problems, think abstractly, compare and master complex ideas, learn quickly, have their own experience;

Artificial Super Intelligence (ASI) is the third level of development of artificial intelligence technologies, where it is smarter than all humanity combined, at first a little, and then as a result of self-learning — in trillions of times.

First level artificial intelligence (ANI) is already used in automotive, energy, finance, telecommunications and more. In particular, ANI technology is at the heart of Google’s search engine, the basis of the Facebook news feed.

Technology No. 2 “Enhanced Reality” (AR in English — augmented reality) allows you to put virtual images (holograms) into the real world. AR is a technology that can free up a human brain, free up part of cognitive efforts and help to optimize their use. This technology is already widely used today in the broadcast of sports competitions. The viewer can, when viewing the pictures on the TV screen, compare the achievements of the athlete in real time with the achievements of records in the past. However, the most famous case of penetration of AR everyday was the game Pokemon Go, which last year unexpectedly seized and tucked into smartphones and tablets millions of people around the world. According to virtual pokemon sites, both children and adults were hunted in real areas.

Technology No. 3 “Blockchain”. This is a fundamentally new reliable storage technology that can dramatically change the approach to building and storing databases. This reliable and open technology will soon change our lives. For example, when issuing bank loans will be locked into a blockchain, nobody will ever face a credit fraud. Yes, and “holes” in bank balances will also be clearly visible, therefore, large bankruptcies will be avoided. Frauds with mortgage apartments and lending cars will simply be impossible — and many people will avoid problems and cash losses. Even public services related to the execution of documents, issue and confirmation of
rights and certificates, can be implemented as a convenient and open registry based on blockchain.

Technology number 4 “Using drones”. Consumer demand for drone recently grew very fast. Droni are small flying machines with multiple screws that operate on remote control and can stay in the air for quite some time. Recently, Google and Facebook have officially announced strategic investment in projects that specialize in the production of solar powered drones and will be able to work continuously in the air for a month. In addition, Amazon.com intends to widely use drone in postal logistics. There are plenty of ideas about how to use drone in agriculture, police, healthcare institutions, television and other areas of human life. Therefore, there are all prerequisites for the further development of the droni industry.

Technology No. 5 “Internet of Things” (IoT — Internet of things). This is a technology for connecting devices over the Internet, allowing them to communicate with us, applications and with each other. Thus, all devices in buildings, in cars, on the user perform the processing of information, its analysis and exchange between themselves, depending on the results, make decisions, and perform certain actions. Internet of things is one of the most promising technologies of recent years, which actually creates hundreds of new products (fitness bracelets, smart-watches, “smart glasses”, smart-houses, etc.) and leads to the emergence of new companies in the market that dictate their conditions for IT giants.

Technology number 6 “Robotics”. This technology focuses on the creation of robots and robotic systems designed to automate complex technological processes and operations, including those performed in non-deterministic conditions, to replace a person during heavy, tedious and dangerous work. Japan and Germany are now leading the world market for robotics — these countries produce more than half of all robotic products in the world. Talking about some serious achievements of Ukraine in this field is too early, but we do something about it: there are both industrial producers and Start-up. So at the CES 2017 exhibition, the Ukrainian company RnD64 introduced the Hello Egg device (a robot-egg that works as an assistant in the kitchen). According to KNN Systems, the most commonly used works in Ukraine are automotive, chemical and electronic industries, for cutting and welding processes, packaging, packaging, palletisation. The most famous companies that use robotic systems are Procter & Gamble,
Henkel, AvtoZAZ. About the level of robotics says the ratio of robots to the number of staff serving this area. The average world Fig. is 60 robots per 10,000 people, while in South Korea it reaches 400 robots, in Japan 340 robots, and in Germany, 280 robots. In Ukraine, this Fig. is still at 1:20 000. In 2016, about 15 old and 5 new robots were purchased in our country.

Technology number 7 “Virtual reality”. The new technology of contactless information interaction, which implements with the help of complex multimedia operating environments, the illusion of the direct occurrence and presence in real time in the stereoscopically presented “screen world”. The main difference between the virtual reality of everything that existed before — its maximum impact on all human feelings — sight, hearing, sense of smell, touch, and so on. In virtual reality, there may be other objects or other people, and people can interact with them. Thanks to operations on virtual patients, doctors are studying new techniques and surgical techniques. Virtual simulators help pilots of aircraft or drivers to work out situations that are virtually impossible in today’s world, even for a person with a great deal of experience. Virtual excursions are now offered by most museums in the world. With the help of special equipment, the virtual world becomes accessible to everyone.

Technology number 8 “3D printers” is the construction of a real object for the computer model created by the 3D model. 3D technologies allow you to completely exclude manual work and the need to draw drawings and calculations on paper — because the program allows you to see the model from all angles already on the screen, and eliminate the defects found not in the process of creation, as it happens in manual manufacturing, but directly in the development and create model for a few hours. 3D printing has opened up great opportunities for experiments in such areas as architecture, construction, medicine, education, clothing modeling, small-scale production, jewelry business, and even in the food industry.

Due to the constant monitoring of technological innovations and the direction of entrepreneurial ideas in the direction of their use and distribution, domestic companies are able to achieve the desired level of competitiveness in the target markets and provide for a stable development.

The results of the research have shown that the development of innovative entrepreneurship depends on the demand from consumers for innovation, the availability of the developed scientific and technical potential of
Chapter 5. Social investments as a contribution to SMEs development

the national economy, the functioning of venture companies and investors that finance risky innovation activities.

As suggestions for systematic stimulation of innovation activity, one can propose the following:

– granting of tax privileges (reduction of rates and tax holidays) for the enterprises in the high-tech areas and oriented on creation of innovations;
– creation of business incubators, techno parks, etc.;
– creation of special educational programs and educational institutions focused on the formation of an intellectual resource for the development of innovations at enterprises of various spheres;
– use of tools to encourage the use of innovations (grants, bonuses, ratings, etc.);
– formation of tools for available financing of innovations for enterprises (loans, subsidies);
– creation of conditions for the application and stimulation of demand for innovations (both internal and external) through, above all, fiscal measures;
– creation of scientific schools based on universities and commercial educational institutions.

International experience demonstrates the possibility of reducing poverty and social exclusion of the population through the development of innovative entrepreneurship through the use of social and economic policies through expanding access to education services, health care and other social services, improving the state of the environment and the use of natural resources, especially in the countryside. Under the conditions of the implementation of the Strategy for Overcoming Poverty, in the next three years, our country can prove that the following is approved by the Cabinet of Ministers of Ukraine from March 16, 2016, No. 161-p [17]:

– the poverty rate by absolute criterion% (according to the World Bank methodology) in 2018 to 0.8%, and already in 2020 to 0.5%;
– poverty rate by relative criterion% (60% of median level) in 2018 to 6.6%, and in 2020 to 6.5%;
– the poverty level by the absolute criterion% (costs below the actual subsistence minimum) in 2018 to 23%, and in 2020 to 15%;
– the unemployment rate of the population aged 15-70 (% of economically active population of the corresponding age) in 2018 to 9.2%, and in 2020 to 9%.
The prerequisite for achieving such indicators should be the maximum use of domestic internal reserves of business entities, the transition to innovative technologies and projects focus on foreign economic activity and strengthen cooperation with larger enterprises to stabilize the financial situation and expansion of markets.

The aforementioned research is presented in the context of logic and dialectics of knowledge of innovative entrepreneurship, disclosure of economic essence and ensuring social inclusion as the only system-forming mechanism for solving socio-economic problems of Ukraine. Each direction of this study has a list of tasks that need to be considered and further studied.

REFERENCES

Chapter 5. Social investments as a contribution to SMEs development