The Proposal of Data Sharing Platform Principles for Academic Spin-off Companies

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Abstract – In order to streamline the technology transfer process, eliminate errors and speed up the implementation of new innovations, the author proposes basic principles for creating a platform for sharing information between spin-off companies, which will enable effective cooperation between individual entities with the potential to have a positive impact on the economic and technological environment. By studying research on the topic of strategy, innovation and data sharing, the author compiled the basic principles of the platform according to the qualitative Grounded theory method with regard to the practical usability of the created proposal.

Keywords – cooperation, entrepreneurial discovery, information sharing, open innovation.

1. Introduction

The current rapid development of business tools significantly aids long-term economic growth in many countries. The competitiveness of companies is growing, a number of macroeconomic indicators (with the exception of inflation) reach surprisingly positive values despite the economic impact of the Covid-19 pandemic.

Despite all this, the current long-term economic development has its limits [1]. One of the reasons can be considered that companies focus too much on being better than their competitors, even though in many areas cooperation between individual actors would be more beneficial.

In his theory of entrepreneurial discovery, Israel Kirzner [2] mentioned the need to learn from mistakes of company. Not only own mistakes, but also mistakes of competitors, partners, suppliers and other entities around the company. The ideal way to prevent one's own mistakes and their consequences is to identify these mistakes in others and adapt one's processes to the knowledge gained, which should lead to faster development of individual companies and the economy as a whole.

At the same time, Kirzner [2] emphasized the importance of cooperation for economic development. By working together, the less experienced can learn from the more experienced. But even experienced people can get a completely different perspective on a certain issue. Individuals could figure out development opportunities on their own, but in many cases they acquire this knowledge too late. Cooperation accelerates technological, process and innovation development and thus stimulates economic growth. Underestimating Kirzner's findings has the exact opposite effect, creating significant risks of error and slowing down the entire economy.

A number of new progressive tools are being applied in strategic planning. However, some of them are still not given enough space in professional circles. Such a tool is, for example, open data, the potential of which is not emphasized enough, and even the professional public (with the exception of a few global and regional initiatives) does not devote as much space to open data as it should [3]. Opening selected data can bring significant benefits to stakeholders, streamlining company’s development and helping to prevent mistakes (by analyzing and learning from available data and trends) [4].

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Innovative companies and companies based on knowledge of scientific activity, especially so-called academic spin-offs, are currently significant bearers of innovation potential. The majority of spin-offs operate on the basis of their own knowledge and, according to the available data, they only establish forms of cooperation to a small extent [5]. The possibility of establishing cooperation could have a significant impact for spin-offs in the areas of research and commercialization of research results. Some standardized form of information sharing should result in more efficient research and production processes, and simplify the search for suitable partners for research and production process.

2. Literature review

The spin-off concept basically represents the separation of a functional part from the parent organization, thereby creating a new independent company. A typical example is an academic spin-off, which is an independent company whose parent organization is a university or research institution [6].

Furlan and Grandinetti [7] describe the key points important for the development of the knowledge economy. According to their findings, academic entrepreneurship in the form of spin-off companies has a positive impact on the economy in terms of both microeconomic and macroeconomic impacts. These impacts are effective only in case of intensive technology transfer and effective commercialization of science and research results. From this point of view, the role of research organizations and their employees, who must be significantly active in these processes, is emphasized. Establishing cooperation with companies in the form of cooperation agreements with reference to the basic elements of the project (research and development, know-how, implementation, commercialization, etc.) can be considered key to streamlining processes. Cooperation between the research community and the private sector companies promotes positive economic impacts, increases the innovation potential of spin-off companies and supports the business environment. Therefore, it is advisable to prioritize a cooperative strategy and open innovation principles.

Cooperative strategy represents the effort of companies to achieve set aims through cooperation with other market players instead of competing with each other. The importance of a cooperative strategy is primarily in the possibility of bringing the benefits of mutual cooperation to the participating entities. This option can often be used by entities that lack certain skills or do not have sufficient resources (financial, material or technological) to fulfill their aims.

Optimum use of resources and capabilities of all interested parties enables better use of current market opportunities, taking into account the interests of all members of the cooperation. In this case, the efficiency of inputs should increase significantly. Due to the connection of entities, it is possible to gain new experience and skills through mutual learning, increase future revenues and minimize costs, or enter a new market more easily [8].

Open innovation is a situation where the company is willing to a certain extent to share its knowledge and experience with other entities and to further develop the innovation potential. In recent years, a number of factors have contributed to the development of open innovation. Globalization of the economy generally facilitates inter-firm communication and participation in various projects [9], [10].

The element of open innovation and the participation of companies in various projects bridges the lack of resources and helps companies to innovate. This in turn leads to the stabilization of innovative companies and technological progress [11]. Due to the professional participation of a larger number of subjects, today open innovation is considered more beneficial, as in most cases it achieves successful commercialization, with a positive financial impact on innovation participants [12].

One possible tool that can be applied in the open innovation mode is open data usage. Open data contains potential for the development of the economic environment of the state and for individual companies. Open data can have a significant impact on the innovation potential of a company, which can use open data to consider the suitability of innovation and subsequently plan and manage innovation adequately [13]. Furthermore, open data can serve as a tool for evaluating and searching for potential partners, increasing the company's transparency or communicating with customers and partners [14].

A wide range of data application areas offers the potential for the economic development of companies and the elimination of risks that could ultimately lead to the financial problems of the company or even its demise [15]. From a strategic point of view, the use of open data offers the possibility of creating an optimal strategy that can reduce to some extent the impact of a bad choice at the beginning of a business or project planning. Open data can be used in operational, tactical and strategic management [16].

Creating company's own open data can create a certain competitive advantage and contribute to the establishment of a good company name.
This can support the loyalty of existing customers and attract new customers, partners and suppliers. On the other side, based on open data, the company can select suitable potential partners too [17].

The new paradigm was created by Bargh et al. [18] which they called Semi-Open Data. This approach means that internal company data is made available to the general public, but does not meet all the necessary open data requirements. Among other things, this approach proposes to share information only in a closed community (e.g. only between scientific institutions). The data is therefore not provided to everyone, but only to entities that can represent the potential for technological and economic development for providers of semi-open data, and at the same time, the risk of misuse of the provided information is eliminated. This paradigm could subsequently motivate a number of entities to provide some information to the professional public and establish effective cooperation.

The semi-open data paradigm could be applied in the field of Open Data Science in the future. Open Data Science stands on three basic pillars – Open Data, Open Algorithms and Open Collaboration. If the entities decide to provide their information in the form of open or semi-open data, it is necessary to ensure sufficient technical support for the data sharing process for this opening. It is also important to sufficiently ensure the security of information sharing in order to reduce the risk of misuse of the information provided. Therefore, any such system must have a sufficiently functional and robust algorithm to work. Through these systems, it is then possible to effectively establish cooperation based on the mutual openness of the entities in terms of information provided to the other party [19].

Already Israel Kirzner [20], in his theory of entrepreneurial discovery, brought a number of fundamental insights that can be described as groundbreaking. Their understanding and application should lead to more efficient operations not only of spin-off entities. For the purpose of establishing the data sharing platform, the following points are key:

1. Market dynamics
2. The need for cooperation
3. Targeted risk taking
4. Work with information
5. Learning from partners and competitors.

The theory of entrepreneurial discovery made it clear that only market imbalances lead to development. The perfectly competitive equilibrium postulate of neoclassical theory (price formed by the clash of demand and supply) means that there can be minimal or no potential for development of society, science, economy and technology.

Only the disruption of the balance and the stimulation of the supply or demand curves will lead to overall cross-industry development. However, in order for such a stimulus and imbalance to occur, it is important for individual subjects to leave a kind of comfort zone (targeted protection of knowledge, avoidance of competition and minimal establishment of cooperation, etc.). It means to change orientation to cooperative strategies and open innovations. More effective stimulation of demand and supply curves and thus greater market dynamics have the potential to effectively stimulate economic and technological growth [21].

The cooperation of individual entities always brings new knowledge and stimulates market dynamics. One company may know something that another company has not yet discovered. This helps prevent unnecessary risk. In addition to minimize risk, it is also possible to learn from the more experienced. In particular, spin-off companies usually have rich experience of a theoretical nature and in the field of applied research, but they often lack experience in business matters. A well-thought-out product that is not sufficiently advertised to the public and sold through adequate channels has no chance of a sufficient financial return. In this, the starting spin-off can certainly learn from other market entities, especially private sector companies. Further, spin-offs can learn from each other, in both areas – research and commercialization. Cooperation is ideally beneficial for all parties, where there is an adequate return of experience and finances (minimization of sunk and unnecessary costs in combination with expected higher returns brings greater profits to all involved) [22], [23].

According to the theory of entrepreneurial discovery, every new project represents a risk for entrepreneurs, which can take a different form - for example, the financial return of the project may not be sufficient, the project implementation process may not be well set, the created product may not necessarily be accepted by consumers, etc. Risk avoidance can ultimately cause, that the company or institution will sooner or later be overtaken by more progressive competition that was willing to take the risk and profit from it, either financially or in the form of a larger market share. Taking risks is the only way to introduce any innovation and subsequently develop the company and the entire market [24].

Risk can be managed and minimized. A high-quality information base is used to minimize the risk, which is also important for the implementation of the innovation itself. Information can be obtained from various sources.
A company can obtain data itself in various ways, including open data. Working with open data can help companies get some important data that can be used to identify project threats or to estimate whether the project will have sufficient financial return (e.g. according to published financial statements of companies with similar projects) [16]. Cooperation significantly speeds up learning processes. It may not always be easy to follow the development of science and the market. Reacting to all changes and finding an adequate market niche is currently very difficult, especially for companies that primarily focus on their own research activities [8]. The spin-off companies could eventually figure out the necessary procedures themselves, but at that point it may already be too late and the competition will deprive the spin-off of its potential advantage, and the time delay may prevent the successful commercialization of the project. All cooperation actors can learn from each other, which ideally will lead to more effective development of individual entities and the minimization of unnecessary losses [6].

3. Aim and methods

The study of publicly available sources led to the identification of a strategic gap in the form of insufficient cooperation, especially between research organizations. Israel Kirzner already defined the basic aspects of successful development, among which cooperation was a necessary part. A survey of the available literature and public sources revealed that a central space for sharing information at the international level practically does not exist and the development of individual subjects (including learning opportunities) is considerably limited. The analysis of literary sources became the first prerequisite for the creation of the basic elements of the platform for sharing information.

The main aim of the contribution is to propose the basic requirements of a platform for sharing information between academic spin-offs, with the possibility of effectively connecting research organizations with each other and eventually with the private sector companies. The proposal reflects the needs of a modern economic concept, which moves from competition to cooperation with regard to the support of economic and technological growth. It is based on the ideas of Kirzner’s theory of entrepreneurial discovery and the real potential of open data in the public and private sector.

The main research questions are:

RQ1: Is it possible to increase the effectiveness of establishing cooperation between spin-off companies or between spin-off companies and private sector companies using an information sharing platform?

RQ2: Can an information sharing platform bring positive effects to the economic environment?

RQ3: What risks can an information sharing platform have?

A segment of spin-off companies was selected for the research purpose of this paper. This category was selected for reasons of high innovation potential, sensitivity to inputs and potential lack of experience in various areas of product management and commercialization. The potential for growth is highest for spin-off companies, and the most significant impact of information sharing can be assumed precisely on the possible development of individual entities, including research organizations.

The synthesis of the established theoretical knowledge forms the basis for the creation of assumptions of the methodology used to set up the proposed platform. Connecting of individual knowledge creates a comprehensive framework, the output of which is the design of a platform for sharing information with the basic aim of positively influencing the research and commercialization capabilities of spin-off companies.

Based on available individual studies ([2], [5], [11], [18], [22], [24]), the author uses induction method to create a model that should be generally applicable in practice and whose principles should fulfill the potential of a project capable of positively influencing the microeconomic parameters of spin-off companies and the markets in which they operate, as well as the overall macroeconomic environment.

Specific findings lead to the setting of the basic necessary requirements of the platform, their assumptions and expected benefits.

4. Results

The platform methodology for sharing data across academic spin-off companies is built on three basic pillars, namely cooperative strategies and open innovation implemented in individual companies, the semi-open data paradigm and also on the basic points of Kirzner’s theory of entrepreneurial discovery. Without these pillars, the model would not be robust enough and its effects on the microeconomic or macroeconomic situation would be minimal.

According to the findings presented in the literature review, the cooperation of subjects has the potential primarily for the emergence of new innovations, the acceleration of corporate and overall economic growth, and the elimination of business-related risks. Abandoning tightly closed innovation is essential. Closure only provides a view from "inside" the organization. Research and development is based on the knowledge of employees, in the case of academic spin-off companies on the knowledge of employees of universities and research institutions.
However, too narrow specialization and too much effort to protect their own research results can be a problem for these institutions. It is understandable and the risk of theft of important information is not negligible. However, insufficient cooperation across research organizations can lead to an inefficient and lengthy research process or to the overlooking of new findings or ignorance of new procedures that are already applied by other entities and would be suitable for another organization. All this can lead to the obsolescence of research, the emergence of problems with possible development (time delay, the need to introduce new procedures, increasing financial demands, etc.) and significant problems with technology transfer. Another problem can be that the spin-off company does not have a sufficiently controlled commercialization process. Private sector companies have much more experience in the distribution, sale or promotion of the final product offered to consumers and can be helpful for spin-offs in business processes.

The main aim of the proposed platform is the efficient and secure sharing of information by spin-off companies with other research organizations, possibly also with private sector companies for the purpose of establishing cooperation. The assumption is that the spin-off companies will share such data so that they can be offered cooperation or the spin-offs themselves can offer cooperation.

The established cooperation should have the following primary effects:

- **streamlining and accelerating research and development processes**
- **accelerating technological progress**
- **accelerate the development of individual sharing participants**
- **streamlining the process of technology transfer and commercialization**
- **minimization of unexpected and transaction costs**
- **support for the implementation of larger projects**
- **support for efficient placement of investment funds**

The proposed platform is intended to help individual spin-off companies orientate themselves in the field of establishing cooperation through a virtual environment and especially through semi-open data (accessible to a limited group of users). The proposal gradually answers the following key questions for establishing cooperation:

- **On what principle the data will be shared?**
- **In what format will the data be published?**
- **Who will have access to the platform?**
- **Who will share the data and be responsible for this issue?**
- **Who will the information be shared with?**
- **What data will be shared?**
- **How will data sharing be secured?**
- **How will it be possible to establish cooperation?**
- **How will the creation of the sharing platform work?**
- **How will the professional public be informed about the creation of the platform?**

**Data sharing platform**

The platform on which the data will be shared should be as user-friendly as possible. Currently, a well-secured shared disk is offered, where it will be possible to gradually upload individual data. Emphasis should be placed on an intuitive user interface. However, the emphasis should be on security so that the risk of misuse or theft of shared information will be minimized.

The platform should work on the principle of Open Access for academic spin-off companies or research organizations. Each organization would be assigned original access credentials. Access for research organizations should be free, any paid form of information sharing will discourage subjects from actively participating in the project. But it is necessary to close the sharing environment to the general public, mainly because of the expected sensitivity of the shared information.

Nevertheless, there is an opportunity to make the platform available to private sector companies. However, it is advisable to allow access under a license and for a fee. This eliminates the possibility of companies entering the platform that have nothing to offer and will only use it. Thus, only companies with the motivation of their own development and development assistance for other entities should enter the platform, also with a strong motivation to increase own profits. As part of the license, companies from the private sector would also receive access data and could operate on the platform for a limited period of time depending on the type of license.

**Shared data format**

Due to the characteristics of semi-open data, the data must be easy to read without additional external costs, i.e. without purchasing the necessary software. Data should be published in a format that can be read by any electronic device (computer, smartphone, etc.). It should be a format in which it will not be possible to interfere in any way with the project and change the specified parameters, either intentionally or by mistake.
In this case, the *.pdf format option is clearly offered, which fully meets these conditions. The platform should allow the upload of other formats with the possibility of editing the inserted document (for example to create a table in which those interested in cooperation can write), but the recommendation clearly points to the above-mentioned *.pdf format for sensitive data.

**Platform access**

The platform is primarily intended for spin-off companies and research organizations. In addition, access will be provided to private sector companies on a license basis. The spin-off companies are expected to cooperate primarily to support research activities, while the private companies will collaborate to commercialize the research results of the spin-off companies. Nevertheless, even companies from the private sector can help with product development or the innovation process based on their own experience from the commercial world.

The functioning of two distinct areas – research and the private sector – will result in the creation of two different dimensions of this platform. It will be necessary to create "Academic" and "License" accesses. The "Academic" approach will allow to see the complete dataset on the platform, while the "License" approach will allow to see only the information that the spin-off will allow the private sector to see. The spin-off will always be able to decide in which mode it will publish its data, i.e. only to other spin-offs and other research organizations (visible only to "Academic"), or to all members of the platform (for "Academic" and "License"). This will be an important side decision. It will be appropriate to share more sensitive information exclusively with other scientific research organizations. General information can be shared with a larger group to look for potential cooperation in the private corporate sector.

Representatives of national and international institutions should also have access to the platform (e.g. responsible employees of ministries, the Academy of Sciences, etc.). The involvement of these institutions can make the process of cooperation more effective, as well as the process of introducing and managing innovation. These institutions would have "Academic" status, could offer cooperation and coordinate already established cooperation.

Private sector companies will also be able to share their projects, for example if they need help with development and seek this help in scientific circles. Even in this case, the company will be able to choose whether only the "Academic" group or the "License" group will see the published information.

The platform can thus have an impact on the entire private sector, which can result in deepening the positive effects of the proposed platform.

**Data sharing and accountability**

It is not possible to share any information recklessly, and the decision to share should be a responsible and rigorous process. The selection of data to share should include answers to basic questions:

- Is the data suitable for sharing or is it better to protect it?
- What can data sharing bring?
- How significant is the risk of data misuse?
- Will the shared data be protected by copyright?
- Who will be responsible and who will decide on data sharing?

It is necessary to work sensitively with specific information and consider the risks and possible benefits of its publication. It is not necessary to disclose all information. Even if the spin-off needs help with any area (research, development, commercialization), it is advisable to consider whether it is necessary to publish more information or just a general description of the project in progress. Therefore, it is necessary to choose which information is too sensitive for publication and which should be published so that possible collaborators get an accurate picture of the development of a specific project.

The use of the platform must be motivated by the expected benefits. The spin-off must identify what the cooperation can bring, whether it is finding a way out of the bad decision of the project, minimizing costs, increasing the profitability of the project, streamlining the development and production processes, etc. If these benefits cannot be identified (e.g. due to a highly specialized project), information sharing does not make much sense, otherwise data sharing is at least worth considering.

Since there is a risk of misuse of published information, it is advisable not to publish sensitive data at all or to protect it by copyright. Only data that does not pose a significant risk to the spin-off should be disclosed. The question of "what and to what extend will publish" have to be answered only after a thorough analysis of risks and benefits.

It is necessary to determine who will be responsible for sharing the data. One person should not be responsible for this problem. The problem should be solved by collective two-phase decision-making. Spin-off executives should decide what they want to share using the proposed platform.
The publication itself should always be finally approved by the parent university, which is usually the owner of the intellectual property of the project, and the loss or misuse of the information would have a major impact on it. Therefore, the ultimate responsibility for making information available should rest with the parent university, unless the spin-off itself receives decision-making authority from it. The overall decision process for platform sharing is shown in Figure 1.

**The character of the data shared**

The character of the shared data should not be limited in any way and should be fully within the competence of individual companies. It can be various technical and financial data. It is important that the information is not too brief, as the intent may not be well understood by potential cooperator. On the other side, too much published information poses a greater risk. So a certain balance needs to be found.

The spin-off will primarily publish data from the research and development of the project, for which it will need external cooperation. It will be possible to find a partner who will progress the research and development towards successful commercialization. The phase of adaptation and commercialization of a project or product to the general customers could be a key phase that the spin-off will not know how to deal with, and they can also seek help from a private sector company.

Published materials should always include a note where the spin-off encountered a problem and in which areas it is seeking help. A short accompanying report introduces the observer to the issue and draws his attention to the parameters of possible cooperation or clearly shows that cooperation with this company is not appropriate.

In order for the system to be as efficient as possible, informational emails or notifications should be sent to interested parties when linked to a mobile application about new documents being uploaded. This prevents input data from being overlooked and reduces possible time delays. It is in the interest of everyone involved that changes on the platform should not be ignored and should be adequately reacted to. In order to monitor changes, it would be advisable to assign responsible personnel to monitor changes on a shared platform.

**Platform security**

Given the sensitivity of shared information and the associated risks, it is necessary to adequately secure the sharing platform. During creating a platform, care must be taken when logging into the system, providing access licenses or encrypting information on the platform. Platform administrators and developers should be responsible for these questions. All academic spin-off companies in the "Academic" mode will receive original login data in the form of a login name and password from the platform administrator after filling out a questionnaire with basic information about the spin-off. The ideal way to deliver the password is in person or via encrypted multimedia messages to prevent access data theft. However, the login should be at least two-phase.
Login to the platform can be approved using a confirmation in the mobile application or using a code from an SMS that will be sent to the contact number listed in the registration questionnaire. Another option is to install a special certificate on the computer of the account manager, when the certificate for a specific account can only be installed on one device. This will prevent anyone from logging into the platform with the given credentials from another device (thus preventing misuse of stolen credentials). Second-phase login methods can be combined for greater security.

Private sector companies in the "License" mode will be offered a paid license with a time limit. The license will carry the same security features as the "Academic" mode. A two-phase login will always be required, i.e. after filling in the login name and password, it will be necessary to confirm the login using a certificate, a mobile application or a code from a SMS message. To increase the credibility of the participating companies, they will state the name of the company according to the commercial register and the assigned identification number when registering. The system should immediately recognize if the entered data does not correspond to reality. This prevents fake companies to entering for steal sensitive information.

The entire platform should be sufficiently encrypted to prevent hacker attacks. If the information is stolen, it will be encrypted and its contents will be unreadable for hackers. This barrier is a convenient and relatively easy-to-apply method for specialists. Currently, asymmetric encryption methods are used. They guarantee the readability of available information only for registered members. The theft and misuse of information by non-participants of the platform becomes much more complicated, the system becomes more secure and its credibility on the part of the participating companies grows.

Spin-offs and private sector companies participating in the sharing will be able to choose how long the data will be available to other entities. It will only be possible to publish data for a certain period of time. The data will be deleted automatically after a maximum of one year, as well as after a set shorter period. It is primarily a defense against hackers who could steal information from older data that could be misused even after a long time. Regular deletion of information prevents misuse of too much data. This automatic function of the platform must be ensured as automatic so that the spin-offs themselves do not have to solve this problem and can devote their time and energy to the development of the product and the production process.

Establishing cooperation

It will be possible to use two methods to establish cooperation. The first is based on the registration of data on a spin-off company or a private sector company. When registering or purchasing a license, those interested in participating in the project will be asked to provide contact information. Company that wants to offer cooperation will therefore have the option, after viewing the shared information, to directly contact the other entity sharing the information according to the registration data. The minimum requirement will be consent to the publication of an e-mail address, it is optionally possible to provide a telephone number.

The second option will be encrypted communication using an integrated chat. Encrypting communication is a key so that, for example, external sabotage of cooperation or misuse of information contained in communication cannot occur. However, this option is only recommended for initial contact, further communication should take place within the framework of the agreement between potentially cooperating entities and is no longer the subject of interest of the created platform, which is only intended to mediate the establishment of cooperation. The cooperation establishing process is represented in Figure 2.

![Figure 2. Scheme for establishing cooperation](image-url)
Information sharing promotion

Information about the existence of the platform must be presented to all academic institutions in order to achieve an efficient possibility to share information between as many companies as possible. This information should be communicated directly to the spin-off companies by the responsible authorities of the national innovation institutes and responsible ministries. After implementation, information about the existence of the platform should gradually reach private sector companies, where there is potential for cooperation with research organizations.

5. Discussion

As a result of a series of adverse events, Europe in particular is dealing with the risk of a recession. Economists and politicians are looking for ways to reduce negative economic impacts on individual market entities. Although the main possibilities for influencing the economy are in the hands of fiscal and monetary policy, individual market participants also have the potential to positively influence long-term economic development and the market environment in general [25]. The cooperation of entities operating in the field of commercialization of science and research results has considerable potential to influence the economic environment of states and the region. The expected consequences [26], [27], [28] of the implementation of the proposed platform are documented in Table 1.

Table 1: Microeconomics and Macroeconomics impact

<table>
<thead>
<tr>
<th>Microeconomics impact</th>
<th>Macroeconomics impact</th>
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<tbody>
<tr>
<td>increase in the profits of companies</td>
<td>increase capital expenditures</td>
</tr>
<tr>
<td>technological progress</td>
<td>growth in exports and net exports can be expected</td>
</tr>
<tr>
<td>growth of product quality</td>
<td>growth in domestic product</td>
</tr>
<tr>
<td>supply growth</td>
<td>increase the pace of economic growth</td>
</tr>
<tr>
<td>increase in the demand for labor and capital</td>
<td>growth in aggregate supply</td>
</tr>
<tr>
<td>production possibilities frontier may increase</td>
<td>real wage growth and increase in labor supply</td>
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<tr>
<td></td>
<td>growth rate of gross domestic product</td>
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<td>positive effect on the balance of payments</td>
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<td></td>
<td>decline in unemployment</td>
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<td>decline in capital expenditures</td>
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According to available sources [28], [29], [30], sharing information, even using an information sharing platform, can have several fundamental limitations and risks. Among the most important are:

Limitations:
- insufficient interest of potentially cooperating subjects
  *solution*: quality promotion of project benefits
- the technical complexity of the platform's security
  *solution*: experienced staff

Risks:
- hacker attack
  *solution*: robust security measures
- misuse of information provided within the framework of cooperation
  *solution*: quality management of information sharing and screening of potential partners
- the departure of high-quality employees from spin-offs to companies without a connection to the academic environment
  *solution*: adequate working conditions and salary evaluation

6. Conclusion

Israel Kirzner has already presented his findings, in which he clearly emphasized the necessity of cooperation. This is the key for the rapid development of the market and its individual participants, for the elimination of future mistakes by learning from the more experienced and thus achieving higher net profits. Although the basic points contained in Kirzner's theory of entrepreneurial discovery are also supported by other economic theories, its practical application is not always effective enough.

Research organizations and their spin-off companies must effectively commercialize the results of science and research for the quality development of their own capabilities and the entire market. Unfortunately, this does not always happen at the level that is needed. Development is too long, mistakes are coming, experience is lacking. The process of research, development and commercialization can be moved to a higher level thanks to cooperation, which has the potential to further develop the innovation potential of companies whose activities are based on scientific knowledge.
The effective sharing of information can bring significant opportunities to simplify the establishment of cooperation, from which all its participants and the entire business environment can subsequently benefit.

It is crucial that the establishment of cooperation is as simple and systematic as possible. For that reason, it is advisable to create a platform that will allow this and will meet the strictest standards for maintaining the safe sharing of information. In the case of a real application, the platform should effectively help spin-off companies in the process of commercializing the results of science and research. This will result in targeted development of the overall economic and technological environment.

The proposal of the platform represents the basic important points that must be implemented in its real form. The contribution can serve as a basis for the implementation of a project at the national or international level, which, in the case of a successful comprehensive application, should bring about the important effects mentioned in the contribution and thus positively influence the competitiveness of the spin-off companies.

Although the practical implementation of the platform entails certain limitations and risks, its potential for the development of economic and technological environment is so significant that the positive effects of the project outweigh the risks. Therefore it would be advisable to create an information sharing platform containing the features mentioned in the main text. Ideally, such a platform should be created at the international level so that its economic and social impacts are as significant as possible.

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