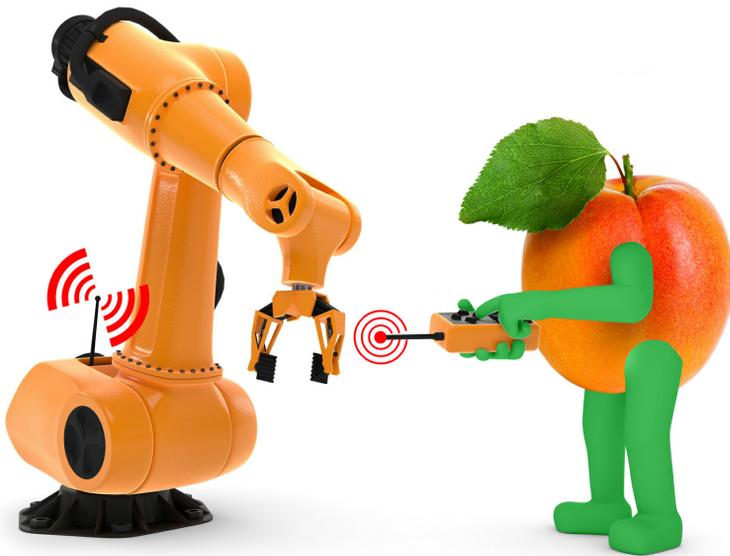


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THE PROBLEM OF COOPERATION BETWEEN SCIENCE AND BUSINESS

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Summary

The innovation rate of the Polish economy is one of the lowest in Europe. Researches indicates that one of the reasons is the low level of cooperation between science and business.

The problems of cooperation between these sectors stem from the differences in the organizational culture of both communities. Both environments differ from each other in the perception of defining business problems, the form of communication, the approach to solving conflicts, the attitude to time and financial constraints or even the way to build interpersonal relationships. Changing this state of affairs requires time and patience, working out methods of building cooperation and learning from each other.

The article diagnoses selected reasons of the unsatisfactory level of cooperation between science and business and proposes recommendations on how to change this situation.

Theses

- The main problem in building cooperation between the science and the business results from large differences in the organizational cultures.
- The key reasons relate to the issue of differences in communication and building relationship.
- Changing the situation requires changes in legal regulations that should favor projects implemented in the science and business partnership. However, the key factors are the changes that affect the attitudes and mentality of the scientific community.

Keywords: Mismatch of organizational cultures, problems in communication, different perception of problems, differently defined research goals.

Introduction

One of the most important factors for economic development and the process of building the competitiveness of companies is innovativeness. Research shows that the level of innovativeness of the Polish economy is among the lowest in Europe¹. This unfavourable situation inspired a scientific team of the Department of Management of Warsaw Management University to look into this issue. In the years 2014–2016 research aimed at, among others, defining the barriers for the innovativeness of the Polish economy² were conducted. The research conducted by the team from Warsaw Management University showed that one of the key factors contributing to this state of affairs is low level of cooperation between the business community and the scientific community, which in turn results from structural problems which are subject to the policies of the state and from the inability of the representatives of the spheres of business and science to understand each other.

The goal of this article is an attempt to diagnose the key factors behind the low level of cooperation between the sphere of science and economy, highlighting in particular the issue of difficulties in building relations between the two communities. The article also presents recommendations which according to the author could contribute to improving the situation.

The foundation for the theses formulated here is the author's almost 20 years of experience in the scientific environment and about a dozen years of experience in the economic sphere as an employee, manager, as well as a person running his own business. Interviews with the representatives of business and science, as well as studies on literature concerning the subject were an additional source of information.

Cooperation between science and business — current situation

Research conducted by Instytut Badań nad Demokracją i Przedsiębiorstwem Prywatnym (Institute for Private Enterprise and Democracy) show that only 10% of the surveyed companies³. declare that they cooperate closely with

scientific units. It is also worth pointing out here that the cooperation between the sphere of science and business in Poland concerns above all the technical areas. The surveys conducted by the Western Institute in Poznań show that the most important motivation for looking for the opportunities to build cooperation between companies and scientific units is the lack of specialist knowledge associated with a product, or the technology of manufacturing a product, as well as the lack of access to specialist equipment⁴. The knowledge held by universities is used directly in industrial production e.g. in form of prototypes, or new processes⁵. Looking for opportunities for cooperation business most often expects that a scientific unit will deliver a cheaper solution, than what it could buy on the market from another company.

The cooperation of companies with non-technical universities is definitely less common, also in case of business universities. The author doesn't know the statistics concerning cooperation of companies with universities' faculties of management and his own research shows that such cooperation is incidental and most often doesn't involve carrying out joint business projects. If it takes place, it is usually limited to didactic, or training activities.

This low level of cooperation between the faculties of management and companies is particularly puzzling, when you take into consideration the dynamic development of consulting and training companies — specialized in business consulting — in the past decade.

The reasons for low level of cooperation between science and business

Specific character of scientific work and practice

Explaining the reasons for difficulties in establishing cooperation between the scientific and the business community isn't an easy task. It results from both different characteristics of these areas and historical conditions forming the attitudes of both communities. These problems are systemic in their nature — that is, they are intertwined relations between various factors which are influencing each other. It is hard to distinguish them clearly from each other without losing the quality of explanations. However, it is worth trying to highlight the most important among them.

Differences in the characteristics of science and practice

Science and practice are different in nature. The goal of science — as Popper wrote — is looking for good explanations for everything that in our opinion needs explanation⁶. A scientific employee has the right to deal with the scientific issues arising from his need of intellectual curiosity.

At the same time a professional is forced above all to finance the costs of his activity, thus his key point of reference is solving the problems that hamper generation of profits. This means that the issues of minimizing costs and eliminating the existing sales barriers are becoming the basic factors shaping the perception of the issues of management and thus the needs to solve them.

This way, the needs of a professional with regard to the acquisition of new knowledge arise from pragmatics and the needs of a scientist arise from his intellectual curiosity. This difference in the perception of problems among scientists and professionals should be regarded as inevitable, as it arises from the nature of the fields they deal with. However, it would be a mistake to look for a justification of the situation, where a scientist looking for intellectual challenges loses orientation with regard to the problems from his field that professionals are facing.

Different criteria for the assessment of the quality of work

What is particularly important in scientific work is the compliance of dissertations with the rules of logic and scientific method. Mental leaps deprived of precise and logical cause-effect connections, lack of citations, low level of structuring of information and the lack of a scientific model are regarded by the community as serious professional malpractice and constitute the basic reason for critical assessment of the quality of scientific work. At the same time low practical value of views for professionals doesn't constitute a criterion that could be used to review and assess scientific publications.

At the same time what is important for professionals is the final conclusion, or solution. If it complies with the views of a professional (confirming and thus further expanding his earlier view based on experience), he recognizes it as valuable. At the same time the method of arriving at this solution, compliance of reasoning with the rules of logic,

consistency in drawing conclusions, sticking to scientific laws is a secondary issue for a professional.

An interesting example presenting differences in the perspectives of the two discussed communities could be observed during a certain PR conference to which the representatives of science and business were invited. A representative of business presented a PR campaign conducted by his company. The goal of the campaign was the promotion of one of the regions of Poland. After the end of the presentation a professor specialized in PR, well known in the academic community, expressed her disapproval of the presented campaign claiming that it wasn't conducted according to the rules of science. At the same time, the campaign was very successful, contributing to the development of the region and received a series of awards, including the award of a voivodeship governor.

Different understanding of the significance of innovativeness

Both in science and business innovative thinking is appreciated. However, innovative thinking is understood differently in business and in science. For a manager innovativeness is a tool he can use to improve the efficiency of operation. However, a manager won't be criticised for the lack of innovativeness, if his routine methods bring satisfactory results to the company. In a company the crucial issue is above all achieving goals measured with economic indicators, at the same time the path to achieving these indicators doesn't matter that much. Moreover, in a company innovativeness is appreciated when it brings value to a company, e.g. saving money, or time. Here it doesn't matter if these particular innovations are widely known on the market and used in other companies, or whether they are a completely new invention. At the same time innovativeness constitutes modus operandi of a scientific employee's work. Publications which contain correct, but commonly known contents may not be approved for publication by the reviewer. In science the innovativeness of hypotheses, research methods, or the author's views is more important than their practical value. Here it is necessary to remark that the imperative of innovativeness in science — striving to present a new point of view in every publication is associated with the consequence of the process of science's departure from the current problems. Naturally, this leads to reduction of the practicality of science.

Misunderstanding of the factors conditioning the decision-making process and the implementation of a solution

A factor which deepens the gap between science and practice is narrow scientific specialization. Focusing on investigating the secrets of a narrow field of science it is easy to lose connection to other areas of knowledge which in practice can't exist without each other. This happens in particular when a scientific employee in search of new concepts, or solutions neglects the issue of economic calculation, or doesn't take into consideration the circumstances conditioning the possibility of implementing solutions.

Here it is necessary to remark that, as long as it is possible to make up for the ignorance of economic calculation by studying appropriate literature, understanding the complexity of problems associated with the implementation of solutions requires practical experience.

In business taking into consideration the costs and conditions for the implementation of new solutions is an inherent component of every decision made by a manager and constitutes the first filter that he uses to select the analysed solutions. Before implementing any major project a manager has to take into consideration: whether he has secured the financial resources and sufficiently competent employees, who could be trained in an appropriate way, is the team ready for changes, does the technology and organizational culture allow the acceptance of the new solution.

In typical scientific work, in which a researcher conducts research independently, the problems of limited time, small budget, coordination of team work, or pressure of expectations don't appear at all, or appear in a limited scope. Thus, sometimes it is hard for him to understand the point of view of a manager and from this perspective prepare solutions for him.

Differences in the area of habits, relations and communication

Reaching a compromise

Scientific work is an individual work in its character. In course of scientific work a scientific employee carries out his research project in a laboratory, office, or library. Social relations appear mostly during

conferences and lectures. However, these situations can be described as superficial relations, because during presentations there is no room for deepened interactions and exchange of opinions, which make it possible to highlight flaws in the speaker's thinking and lead to compromise.

The conducted surveys show that in Polish scientific community scientific meetings at which a researcher presents his scientific plans, or concepts and other scientists comment on his theses and the research method are rare and typical rather only of older professors. This leads to the conclusion that scientific employees have few opportunities to directly confront their opinions with the opinions of other scientists. However, even in case when a scientific discussion takes place, it doesn't have to lead to a consensus and working out a new approach. If eventually none of the participants of a meeting agrees with others, such a meeting can still be recognized as valuable and fruitful.

At the same time in business the goal of organizing meetings is reaching an agreement, defining a common view of a situation, or making a binding decision. Lack of agreement can sometimes be recognized as valuable, but in case of the necessity to make a decision important for the participants, it is required to reach a compromise.

In case of cooperation between the representatives of business and scientists the need to confront arguments, reach a consensus in views, or renegotiate the terms of a contract may be hard to accept for scientific employees. Daily experience of work in research unit hardly ever develops such skills.

Language of communication

One of the functions of science is creating new concepts which are supposed to name newly discovered phenomena. Some of these concepts transpire into the professional language, but most of them remain in the sphere of academic language. Due to the individual character of a scientist's work and the fact that he focuses on the development of his specialization, he may not be aware which of the concepts he uses on a daily basis are commonly used and which are hermetic terms used only in his environment. Here it is necessary to add that for the representatives of science the ability to precisely define and use terms is a very important issue.

At the same time, the language of professionals is often characterized by the use of imprecise terms, which are commonplace, or typical of a particular branch. For managers it is important whether a particular discussion is heading in the right direction, whether the sides understand each other's intentions and not whether they use sufficiently precise language⁷.

Moreover, a characteristic feature of science is strong structuration of utterances. In the organizational culture of the scientific community the ability to speak in an organized way is highly appreciated. Beginning from the definition of phenomena, through elaboration of the subject to arriving at final conclusions. This strongly emphasized order of utterances is usually not natural for business and often constitutes an obstacle in communication, as it may embarrass some professionals.

This difference in the styles of statements, used terms, or in the area of arranging information may become a serious communication barrier for both sides⁸.

The attitude to interlocutors

The author conducted an interview with a bank director. As the director pointed out, scientific employees he has met "tend to conduct talks as if they were giving a presentation at a lecture". Years of work in the lecture hall form particular communication habits. Among these habits there is a patronising way of talking, treating interlocutors from the position of a "parent" who addresses others as if talking to his pupil. These attitudes are expressed by a whole range of behaviours: using hermetic, scientific terms, attaching importance to precise explanation of the discussed issues, referring to the concepts of other authors in a conversation, or going into details of issues, which are necessary for the discussed subject.

This way of communicating, which often has a side-effect in form of intellectual domination over the interlocutors, isn't deliberate. It belongs to the nature of communication in the scientific community, it is a part of

universities' organizational culture, fully accepted in the community. However, it may lead to a justified opposition of the interlocutors representing business and it can create a communication barrier, which is hard to overcome. It often discourages the representatives of business from further contacts.

A good example is a situation, when the author called a professor from a university of technology dealing with e-learning, with the intention to deal with a business matter. While explaining the purpose of the conversation he used a Polish version of the term e-learning — "e-nauczanie". As a result, the interlocutor devoted most of the conversation to explaining that the English word "to learn" means in Polish "uczyć się" and not "nauczać", which in English is "to teach", adding the comment that it is important to use the right terms. It is necessary to remark here that the two interlocutors didn't know each other before the conversation and it was their first contact. A professional treated this way would probably not try to build relations.

Utilization of research results

In literature on the subject it is often emphasized that what makes researchers and professionals different is also the approach to the utilization of research results. The representatives of science usually expect that after conducting research they will have a chance to present the results of their work to a broad group of recipients during scientific conferences and in publications. Their scientific development, career and building their position in the community depend on these activities. At the same time, for a company financing research and expecting financial benefits from the utilization of research results, the publication of this knowledge may be treated as an activity going against the interests of the company⁹.

A summary of the most important differences characterizing the representatives of science and business is shown in the following table 1.

Table 1. Key differences hampering the establishment of cooperation between the community of science and the business community

Factor	Approach of science	Approach of business
Specific character of science and business	Focus on general problems, broad concepts and theories, Depreciating the significance of current practical problems.	Focus on solving practical solutions. Lower interest in general problems, theories and concepts.
Criteria for the assessment of quality	The priority in the assessment of the correctness of a research project is the compliance with scientific methodology. Practicality of research results is a secondary matter.	The priority is to achieve the assumed practical goal. The compliance of the manner of conducting research with scientific methods is not the key criterion for assessment.
Approach to innovativeness	Innovativeness of theses and views as the modus operandi of a scientist's work. A publication recognized as valuable has to include innovative contents.	Innovativeness is the instrument used to achieve the central goal. It is desirable only when it improves efficiency. Innovativeness focused on the practicality of solutions.
The issue of implementation of solutions	Narrow scientific specializations lead to a narrow assessment of the situation. Not taking into consideration important factors associated with the implementation of the proposed solutions.	Every solution is analysed above all from the perspective of costs and factors conditioning implementation.
Language of communication	Specific, often hermetic language, comprehensible mainly for people specialized in a particular field of science. Above all, analytical language, highly structured statements.	Language typical of business relations. Popular phrases and terms, industry-speak. Communication focused on benefits, achieving goals, building relations.
Approach to interlocutors	Approaching the interlocutor as a mentor. Treating the interlocutor from the position of a "teacher" communicating with a student.	In business relations - communication on the same level. Treating interlocutors as partners.
Using research results	Willingness to publish research results for the purpose of building your own scientific development.	The expectation that the results of research will become a secret of a company and that they won't be revealed to the public.

Source: Own materials.

Recommendations

Thinking about the possible solutions which could reduce the distance between science and business we should point out that the problems existing here are complex and to a large extent result from traditions and history. They belong to the phenomena characterizing the whole community and are passed down from generation to generation. Trying to characterize the differences between the scientific community and the business community with one phrase, we can emphasize that the point of concentration of the scientific community focuses on the compliance of thinking with the rules of science. At the same time in case of business the superior feature is the efficiency in the implementation of a goal.

As the surveyed representatives of business and science emphasized, it is scientific communities that have to take a bigger step to get closer to business, rather than the other side. It is among others because it is scientific employees who care more about building relations with business than business employees care about building relations with science. Research conducted by the University of Economics in Katowice show that only 40% of the surveyed entrepreneurs declared they were willing to cooperate with universities, at the same time among scientific employees 98% of the surveyed expressed the will to cooperate with companies¹⁰.

The problems that have to be overcome are significant and require a mental change among the scientific employees — the change of attitudes, methods of work, rules of communication and building relations. It is impossible to achieve this change in a short time.

Two directions of solutions

Solutions aimed at connecting business and scientific communities can be divided into two groups. The first one includes structural and legal solutions created by state authorities. Among them there are regulations bringing financial benefits in cases when companies and scientific units start cooperation. The second group of activities is based on the search of

scientific and business units for initiatives aimed at bringing together the interests of the two sides and developing their common projects.

Among activities of a structural character there are above all regulations which facilitate, or even enable the acquisition of financial resources thanks to science-business partnership. For example, they can be regulations favouring projects which take advantage of cooperation between scientific units and companies. Thanks to this they raise the chances of getting co-funding from state and EU subsidies. Another example of activities supporting the cooperation of science and business may be tax allowances and tax facilities for entrepreneurs thanks to cooperation with scientific units.

What was also emphasized in the research conducted by Warsaw Management University was the significance of favouring the scientific institutions which successfully lead to the commercialization of their innovative products¹¹.

Legal and fiscal regulations are undoubtedly an important incentive for looking for cooperation between scientific units and business units. They force both sides to take up activities aimed at gaining financial benefits. However, they are not a sufficient factor which can solve the key problem which can be found in the process of building relations between the two communities, that is, problems with communication and establishing partner relations. Legal solutions can serve as an incentive for changes, but they won't solve the problem of mismatch of attitudes, language of communication, the way of thinking of the two sides — which is a necessary condition for establishing and maintaining cooperation. We can change these factors only through a slow process of learning about each other, understanding your needs, ways of thinking and on this basis — adapting to each other. Thus, what is becoming the key challenge is finding solutions which influence the frequency of contacts, exchange of thoughts, joint works on small problems to finally build a platform for carrying out harder and more complex projects.

Forms of cooperation between science and business

There are a few potential forms of cooperation between the scientific community and the business community. The scope of forms of cooperation

ranges from the most basic forms engaging the two sides to a small degree to the most complex forms which are hard to implement. Among the most often mentioned forms of cooperation there are¹²:

- Seconding a scientific employee to apprenticeship in a company
- Conducting trainings
- Consulting services, consultations
- Granting an order for research to a scientific team
- Joint work on a company project in cooperation with a scientific team

Scientific apprenticeships

We can assume that this is a form of cooperation free of risk, which doesn't lead to broader consequences in case of failure. Even if a scientific employee doesn't fit in the business community, it usually won't lead to any negative consequences for a company. In the worst case scenario a failure means one or two sides will have the feeling of having lost time. Interns hardly ever have to bear responsibility for tasks.

For scientists apprenticeships are an excellent source of practical knowledge and could be treated as the easiest form of building relations between the community of science and business. Experiences obtained this way and the established contacts can be a precious resource in the future both for a scientific unit and for a company. The main challenge of this form of cooperation is preparing the concept of the apprenticeship so that the apprentice can really get involved in the current activities conducted in a company, taking into consideration the situation that he doesn't have sufficient knowledge and skills to carry out the tasks assigned to him himself.

Cooperation on the basis of an internship is possible mainly in case when a scientist participates in the work of a company. It would be hard to carry out an internship programme for business employees in scientific institutions.

Conducting trainings

This form still belongs to the group of safe forms of cooperation characterized by low risk. The main challenge ahead of the organizers and

the people conducting training courses is understanding the needs of the participants and the ability to use a language they will understand. This is a particularly important matter in the situation when the coach conducting a training doesn't have experience in building relations with the employees of the other community.

A typical mistake in trainings conducted by scientists, apart from using hermetic scientific terms, is going too deep into the details of the discussed subject, as well as failing to address the essence of the needs and expectations of the participants for the purpose of explaining complex theories and concepts. At the same time a mistake made by coaches conducting trainings for the representative of science is excessively casual approach to relations and communication, as well as insufficient level of structuring of knowledge. One of the participants of the survey told the following story. He conducted a training for a scientific team and out of habit he proposed that the participants of the training should use informal address and use their names. Even though the participants agreed to this proposal, they quickly withdrew from it, as they weren't able to accept this level of informality.

Another participant of the survey told a story of trainings for university employees. A few times they asked about the sources of knowledge of the coach and the scientific theories associated with his statements. As the coach couldn't answer these questions, a few participants left the room, where the training was held.

Despite the described difficulties trainings should be classified as forms of cooperation between the scientific and business community characterized by low level of risk. In the worst-case scenario the sides will recognize a training project as unproductive and its result will be the loss of time and wasting small financial resources.

However, what is undoubtedly valuable in trainings is that the sides learn more about each other, deepen their understanding of the way of thinking and language of communication different from their own. They also deepen mutual relations.

Consulting service — consultations

The risk arising from the provision of a consulting service is higher than in case of trainings, as it is usually associated with much higher

expectations of a company with regard to a service. Consulting service is a form of cooperation engaging both sides to a much higher degree and requires earlier experience in cooperation with the other community. Usually, meetings are held in form of exchange of views and opinions, asking questions and giving answers, most often with the use of prepared reports with research results. In such case lack of understanding of the messages coming from the other side, mismatch of expectations, or incompetent preparation of one of the two sides would lead to serious consequences of a moral nature, such as the loss of respect, the feeling of lost time, as well as money.

Consultations should be classified as highly engaging forms of cooperation between the communities, associated with quite a high risk of failure. An added value of this form of cooperation is intensive exchange of knowledge between the participants.

Ordering research

This is a situation in which a company treats a scientific unit as a contractor. This form of cooperation is characterized by typical business rules of the B2B character (business to business). In this case one of the binding rules is defining the conditions of a contract in course of the process of negotiation, complying with these terms, maintaining the right form of communication in course of work on the order, as well as solving problems emerging during work on the order, complying with the rules applicable in business relations.

This kind of cooperation is associated with a major risk of failure due to the lack of experience in cooperation in case of both the company and the research unit. A company may treat a scientific contractor in the same way as it treats a business partner in the context of implementation of contract terms and rules of building business relations.

However, a scientific unit which has no experience in cooperation with business, may approach work on a contract in a similar way as it approaches a research project for the purpose of preparing a publication — that is, in a rather casual way. It is because it is not uncommon for a scientist who is unable to achieve the assumed goal of his research e.g. due to problems with finding information, to change the goal, hypotheses, or

research problems to adapt them to the available information. The author of this article knows a situation in which the management of a big state-owned company awarded to a scientific employee the analysis of the organizational structure for the purpose of introducing changes to the structure. As the researcher didn't have the appropriate knowledge concerning the methodology of conducting such research and collecting such information was beyond the competences of the researcher, he simply filled the report with scientific theory concerning organizational structures.

Such an approach to carrying out a project is not acceptable for the business client. A company ordering a research project expects strict compliance with the guidelines discussed in the phase of negotiations and in particular, the terms defined in the contract. Both the goal of research and deadlines are not a flexible matter for the company. A company orders research to satisfy a particular business need, so the lack of results, incomplete results, or results differing from the expected results won't satisfy the client, even if in terms of methodology the research was conducted correctly.

Joint work on a project

This form of cooperation requires the highest engagement of the two sides and the greatest experience. It combines the challenges and threats of the aforementioned forms of cooperation and brings new ones — associated with the ability to continuously assess the cooperation between partners. Thus, here not only occasional communication resulting from the project plan, or the emerging incidental, unforeseeable difficulties is required. What is needed here is continuous communication and defining the current plans of activity. The likelihood of causing a conflict through misunderstanding, or loyalty to different rules of work on a project is very high in this case. We can assume that if the two sides don't have prior experience in cooperation, the success and implementation of the goal defined by the two sides are highly unlikely.

Conclusions

The main direction which is supposed to address the problem of low level of cooperation between science and business is raising the practicality of science. We should look for the reasons for the unsatisfactory level of cooperation between these two communities mainly in the scientific community. Low level of understanding of the problems of business result from the low level of the scientific community's interest in practical problems.

The change of this situation may be partially enforced by state regulations bringing financial benefits for partnership in projects conducted together by companies and scientific units, however, legal regulations and subsidies are not enough to convince the scientific community to change its attitudes. Changes should be initiated by the managements of scientific units themselves, e.g. by creating adequate systems of motivation promoting the practicality of science. Currently these methods of management, already common in business, linking the efficiency of employees to the efficiency of the organization, are not applied in the scientific community on a large scale, as discussed in detail in a report prepared by Ernst & Young and ordered by the Ministry of Science and Higher Education¹³. The strategies implemented by universities, especially non-public universities, don't take into consideration the issue of quality of education and thus even more the issues of practicality of conducted research.

However, we can take an even broader view of the unsatisfactory quality of science. Understanding the problems of professionals requires contact with the business community and there is no alternative to knowledge obtained through experience and "field" research. However, the contact with business professionals themselves may be a necessary, but not sufficient condition for raising the quality of science and moving it closer to the needs of business. The second complementary condition is mastering the professional research methodology.

The conducted interviews show that in academic communities scientific meetings of the personnel aimed at discussing the quality of conducted research, or the development of methods of conducting scientific research

are rare. As it was emphasized, such subjects, if discussed at all, are more typical of older scientific employees.

The intellect is a scientist's work tool. The ability of using this instrument should become the most important task of a scientific employee. Learning the rules of logic, learning the ability to draw conclusions, conduct analyses, or create syntheses is a task necessary for factographic and communicative presentation of the description of investigated reality.

An entrepreneur who incorrectly diagnoses situations sooner, or later will stop being an entrepreneur, as the decisions he makes won't lead him to the desired goal. At the same time a scientist can for his whole life wander around the world of subjectively interpreted phenomena and what's even worse, may not realize he is lost in an illusion. This is particularly characteristic of the representatives of social science and humanities, who — as opposed to the representatives of technical, or exact sciences — don't have an unequivocal point of reference which could be used to verify the correctness of their opinions.

This leads to the following conclusion. The strong dissonance between science and business, which is visible especially in the area of social sciences, that is, among others, management science, results on the one hand from the lack of contact with business professionals and on the other hand from low level of intellectual discipline and the attachment to research methodology.

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