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# Stakeholders versus technological changes — theory and practice

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## Interesariusze a zmiany technologiczne — teoria i praktyka

**Abstract**

The aim of the article is to identify possible consequences for technological changes resulting from the company's cooperation with its stakeholders. An additional goal is the systematization of knowledge about relations with stakeholders and technological changes. Business practice confirms that there are real relationships between stakeholder relationship management and technological change. Proper relationship management contributes to the creation of tangible benefits for the company, increases the propensity of the organization to technological changes and innovations. The example of the bottling industry was used in the conclusion.

**Keywords**

stakeholder conception, relations, technological changes, bottling industries

**Streszczenie**

Celem artykułu jest identyfikacja możliwych skutków dla zmian technologicznych wynikających ze współpracy przedsiębiorstwa z jego interesariuszami. Dodatkowym celem jest systematyzacja wiedzy na temat relacji z interesariuszami oraz zmian technologicznych. Praktyka biznesowa potwierdza, że istnieją rzeczywiste związki między zarządzaniem relacjami z interesariuszami i zmianami technologicznymi. Właściwe zarządzanie relacjami przyczynia się do stworzenia wymiernych korzyści dla firmy, zwiększa skłonność organizacji do zmian technologicznych i innowacji. We wnioskowaniu posłużono się przykładem branży rozlewniczej.

**Słowa kluczowe**

koncepcja interesariuszy, relacje, zmiany technologiczne, branża rozlewnicza

JEL: L14, L66, M11, O33

**Introduction**

The stakeholder concept is widely explored in management sciences (Parmar, Freeman, & Harrison, 2010; Mainardes, Alves, & Raposo, 2011; Harrison et al., 2015; Preble, 2005; Ormord, 2020). This is due to the fact that the activities of enterprises take into account the specificity of various groups of stakeholders, the system of values adopted by them and their potential impact on organizational decisions (Wójcik-Karpacz, 2018). This means that stakeholders contribute to the

company's market success and engage in the process of managing it, thus having a real impact on its operations in many areas (Ciepela, 2014). One of such key areas is technological innovation. Nowadays, technological changes are strategic. It is the result of the fast pace of changes in the company's environment, including changes in the scope of customer needs and expectations. Technical innovations may determine the existence of a company on the market (Repetowski, 2008) and distinguish its offer from the competition (Romanowska, 2016). Therefore, science considers

it important to search for relationships between stakeholder orientation and the scope and specificity of a technological nature (Ya, & Rui, 2006; Cohen et al., 2010; Peek et al., 2016; Akinde et al., 2018). The aim of the article is to identify possible consequences for technological changes resulting from the company's cooperation with its stakeholders. An additional goal is the systematization of knowledge about relations with stakeholders and technological changes. Literature studies and desk research were used to achieve these goals (Bednarowska, 2015).

## Theoretical aspects of stakeholder conception

There are two approaches to stakeholder definition in management theory. The first, traditional approach, assumes that these are "owners" who have a dominant and direct influence on the functioning of the entity (Downar, & Niedzielski, 2006; Freeman, 2013). The second one, on the other hand, assumes a broader perspective on stakeholder issues. It assumes that these are "entities (individuals, communities, institutions, organizations, offices) that can influence and are influenced by the company" (Freeman, & Moutchnik, 2013). Thus, they are specific, identifiable entities that constitute the environment of a company, enter into direct or indirect relations with it of various kinds and can facilitate or hinder its functioning (Downar, & Niedzielski, 2006). This concept was introduced to the management science by R.E. Freeman using it for the first time in 1979 in his work "Strategic Management: A Stakeholder Approach". (Freeman, 1984) He defined stakeholders as "any individual or group that can influence or be influenced by an organization in pursuit of its goals. An important element of this definition is the impact that exists between stakeholders and the organization. It can be diverse in nature. Stakeholders can influence a particular organization, and an organization can influence its stakeholders. Donaldson's and Preston's definition of a stakeholder is also relevant to this discussion, which means that stakeholders are individuals or groups that have direct or indirect contracts with an organization. If a contract is defined broadly as an informal or formal contract that binds both parties (the organization and its stakeholders), then it can be concluded that a stakeholder can be virtually any element of the organization's proximate and distant environment. As a result of such an approach to the definition of an organization's stakeholder, the contractual context in which the relationship is embedded will be important. The provisions of the

agreement may limit or inversely impose the type of mutual cooperation, determine mutual interactions and influences. Moreover, it should also be noted here that in the case of contractual relations, the whole organization is not always the subject of interaction with a stakeholder. Very often, in economic practice, it can only be a specific process, a system element or a project limited in time (Civera, & Freeman 2019; Benna et al., 2016; Matuleviciene, & Stravinskiene, 2015). However, most often, in the environment of most companies currently operating on the market, classic groups of stakeholders can be distinguished:

- customers, suppliers;
- employees, owners;
- NGOs;
- local communities;
- investors;
- banks, media, state administration.

Depending on the sector of the organization's activity, each of these groups has a different weight for a given entrepreneur. The literature on the subject also lists several other possible ways of classifying the stakeholders and thus making their division into groups according to several criteria. From the point of view of this analysis the most important criterion is the type of relationship existing between the stakeholders and the organization. It allows to classify the stakeholders into:

- **Consubstantial stakeholders** — these are the entities that co-create the organization and operate within it, such as employees, owners, shareholders;
- **Contractual stakeholders** — their relations with the organization are based on business, contractual activities, e.g. suppliers, various types of cooperators;
- **Contextual stakeholders** — they do not have direct contact with the organization, most often they are groups working for the benefit of communities, influencing a positive image and acceptance of the company's activity on the market. Examples are local and social communities or institutions.

The classification presented above is shown in Table 1. Consubstantial stakeholders have a close relationship with the organization. They are strongly connected with the organization and are usually personally involved in its development. Contractual stakeholders are those entities or individuals who, on the basis of ongoing contracts or orders, cooperate with the organization on a more or less long-term basis. These entities are interested in its further welfare. Sometimes, depending on the relationship they have built, they may also be involved in maintaining and developing it. Contextual stakeholders will be more closely associated with the organization if it operates in

a strong relationship with local communities. This bond, or relationship, is a two-way impact between cooperating stakeholders and the organization. This relationship can take many forms. Starting from direct market contact, through the relationship resulting from an existing agreement between the entities or other formalized business relationship such as for example: strategic alliance, cluster or consortium. It therefore includes cooperation aimed at achieving the objectives of both parties. It is therefore a phenomenon characterized by bilateralism, voluntariness and active involvement in the existing relationship (Wiatrak, 2014). The multidimensionality and duality of the relationship causes that this type of relationship between entities can be both cooperative and competitive. From the point of view of an organization, it may have more or less value for it.

**Table 1. Stakeholder breakdown by type of relationship with the company**

Consubstantial stakeholders	<ul style="list-style-type: none"> <li>• employees</li> <li>• owners</li> </ul>
Contractual stakeholders	<ul style="list-style-type: none"> <li>• recipients</li> <li>• suppliers</li> <li>• financial institutions</li> <li>• competitors</li> </ul>
Contextual stakeholders	<ul style="list-style-type: none"> <li>• public administration</li> <li>• media</li> </ul>

Source: Rodriguez, M.A., & Ricar, J.E. (2002). Towards the sustainable business. *Revista de Antiguos Alumnos*. IESE Universidad Navarra, 86, 30–32.

It can be created by material expenditure, i.e., simply real material benefits, investments that have to be made in order to execute this relationship, or non-material investments that have to be incurred in order to actually confirm the existence of a relationship between organizations. In the context of analyzing its value for an organization, in simple terms, this is the difference between the benefits it can derive from it and the expenses it must incur to sustain it. (Zeithaml, 1988; Piwoni-Krzeszowska, 2013). The sources of relations should be sought in the following dimensions of the organization:

- economic — gives the possibility to reduce costs or increase revenues;
- product or service — allows to increase the value of the relationship meeting the needs of entities;
- behavioural — intangible aspects such as maintaining trust, culture of relations, its further development;

- organizational — enables realization of processes between entities in relation to synchronization of standards, information exchange processes, etc.;
- strategic — strengthening of competitive advantage, strengthening key competences, creating market position (Piwoni-Krzeszowska, 2013).

The value of the relationship as many other types of assets owned by the organization can be managed. This enables the organization to build a wide range of relations with other entities from the environment — optimal and useful for it at a given strategic moment. In order to maximize the desired effects, it is necessary to map the sources of relationship value and establish, in a thoughtful way, a strategy for managing the relationship itself. Only such action will allow to generate the benefits expected by the organization in a longer time spectrum (Piwoni-Krzeszowska, 2013). Stakeholder relationship management is a process which — to enable the organization to identify, build and maintain relations — should be carried out according to the following stages:

- identification of stakeholders with a distinction between external and internal stakeholders;
- analysis and diagnosis of interests/goals;
- formulation of appropriate strategies;
- implementation of the strategy (Downar, & Niedzielski, 2006).

Properly conducted diagnosis and stakeholder analysis will lead to the creation of opportunities to manage the relationships arising or already existing between them and the organization. It will also make it possible to establish a hierarchy of their importance, diagnosing the risks associated with their existence. A well-thought-out relationship management strategy can lead to a higher expected added value for the organization. The increase of relationship potential, achieved by appropriate relationship management and its value, can also be maximized. To this end the organization should use the factors influencing the relationship. The following groups are distinguished in the literature:

- relationship factors independent of the organization — they are beyond the possibility of shaping their influence on the company being a party of the relationship;
- relational factors depending on the organization which is a party to the relationship, e.g. satisfactory commercial conditions, readiness to synchronize, improving reputation, recommending to other entities, using informal relations, trust, loyalty, offering discounts, installment sales; informing the market about a joint offer or cooperation.

A consequence of striving for thoughtful relationship management and increase in its value

is also the possibility of developing a model of stakeholder relationship management adapted to the specificity of a given company. An exemplary management model is presented in Table 1. It should be individually adapted to the specificity of the organization itself and the environment in which it operates. The phenomenon of the existence of relations between the organization and its stakeholders has now become one of the most important tools enabling the organization to build and manage not only the relations themselves and their value. The epidemiological situation related to the occurrence of a viral pandemic in the world has highlighted the importance and positive impact that this phenomenon may have on the competitive advantage and perception of the organization on the market. Moreover, as the practice has shown, the difficult economic situation has naturally tightened the existing bonds and deepened them by showing and giving mutual support both material and non-material.

Business advantage and benefit have begun to be seen by organizations that cooperate or even compete with each other as providing mutual

support for the survival of the stakeholder in a complex situation. What is more, granting various types of support has become one of the factors enabling to build a positive image of the organization and, consequently, an intangible market advantage.

### Technical and technological changes — fundamentals and specificity

A technological change, according to the standards set by the OECD (Organization for Economic Co-operation and Development), relates to such a change in activities that leads to the production of a technologically new or possibly significantly improved object. It is sometimes referred to as process innovation, because it is the same as a change in the methods used by the company to manufacture products or provide services. It also means a modification of the way in which an enterprise reaches its customers with a product or service. They are often the result of

**Table 2. Process of Organisation Relationship Management**

1. Planning	
Preparatory stage	Execution stage
<ul style="list-style-type: none"> <li>• reflection on the role of relationships</li> <li>• analysis of company potential</li> <li>• adaptability of the concept</li> </ul>	<ul style="list-style-type: none"> <li>• internal and inter-organisational arrangements</li> <li>• activation of the relationship conditions</li> <li>• evaluation</li> </ul>
2. Organising	
Preparatory stage	Execution stage
<ul style="list-style-type: none"> <li>• selection of entities and forms of cooperation</li> <li>• collaboration</li> <li>• design of information and decision making systems</li> </ul>	<ul style="list-style-type: none"> <li>• coordination in the area of processes, structures, strategies</li> <li>• consolidation of cooperation</li> <li>• evaluation</li> </ul>
3. Motivating	
Preparatory stage	Execution stage
<ul style="list-style-type: none"> <li>• developing an incentive system</li> <li>• identification of motivational incentives</li> </ul>	<ul style="list-style-type: none"> <li>• exchange of information and experience</li> <li>• system of values and relational norms</li> <li>• implementation of the incentive system</li> <li>• evaluation</li> </ul>
4. Control	
Preparatory stage	Execution stage
<ul style="list-style-type: none"> <li>• expected status of the relationship</li> <li>• ratings</li> <li>• monitoring</li> <li>• scenarios of possible events</li> </ul>	<ul style="list-style-type: none"> <li>• current assessment of the status of relations</li> <li>• deviation analysis</li> <li>• improvement of solutions</li> <li>• evaluation</li> </ul>

Source: Own elaboration on the basis of the study: Danielak, 2018.

using new knowledge in a practical way, i.e. after implementing it in the manufacturing process. The effect will primarily be new production that has not been obtained so far, but also the delivery of new and improved products that would never have been manufactured or delivered using existing conventional methods (Karpacz, 2014). An additional effect may be to increase production efficiency (Caliskan, 2015). An example of process innovation in the field of technology is the installation of a new, improved production technology (for example, automation of the production line) in the company's technological line. However, technical change, according to OECD research, is an innovation resulting from modification activities of the so-called R&D (research and development). These improvements arise as a result of innovative activities covering a number of research (scientific), technical, organizational, financial and commercial activities, with the provision that smaller — technical or flexible modifications of products and processes, not directly affecting performance, properties, costs or the consumption of materials, energy and components are not included in this type of innovations (CSO, 2007). A different approach, dedicated to the production process in the strict sense, to the definition of technical and technological change is represented by J. Penc (2003). For this scientist, it is crucial if and how the change affects the production process. From this point of view, it is important whether its consequence is the introduction of a new production method, whether there is optimization, streamlining of production, and reduction of costs of this process (Penc 2003). For J. Penc, technological innovations mean the introduction of new production methods, streamlining production and making it cheaper, as well as bringing improvement in working conditions and its environment. However, he defines technical innovations as changes in the physical appearance of a product or service, performance parameters or production processes (Penc, 2007). To sum up, due to the different areas of innovation emergence, one should rather consider the view presented by the OECD as superior and more general. It shows that technological innovations are all necessary activities in the field of research and development (R&D) aimed at creating technological novelties. However, technical innovations are other activities of various types, aimed at introducing a new product to the market or absorption of a new production process by an enterprise. They include changes in product appearance, changes in packaging or taste, in the case of food products, creation of new distribution channels, use of new

product presentation methods, creation of new brands, use of new marketing compositions which task is to introduce products to new markets, implement new product pricing methods. After many years of research and observation of various economies, the OECD has also developed and proposed a division of technical and technological innovations into:

- process — mean the implementation of a completely new or improved production method; they often lead to lowering unit costs of production, increasing quality;
- product — they consist in introducing completely new or significantly improved products to the market;
- organizational — also called process-related, relate to aspects related to the production of products. it is assumed that they include: technology, equipment and production software (OECD, 2005).

In 2005, the OECD also added marketing innovations to the above list, which were defined as process changes resulting in improved identification of customer needs and product positioning on the market. The manufacturer's success is primarily determined by the technical parameters and modernity of the products, and in the long run, success will be achieved by the producer who will be more productive than the others, i.e. his market share will be greater than the share in the potential of all producers operating on this market. Enterprises often have problems with the implementation of results of technological progress, which is due to limited resources and the level of preparation of managers for the implementation of results of technological progress (OECD, 2005). The result is the so-called technological gap, which significantly negatively affects the level of competitiveness of such an enterprise in the sector. Organizations therefore have difficulties with the characteristics of the macroeconomic environment, as well as direct, close environment, and as a consequence, not only are they unable to design and implement innovative solutions, but also to maintain their position (OECD, 2005). A good remedial solution is technology transfer or entering into a strategic alliance, i.e. cooperation and sharing experiences in the field of innovative changes. However, for this purpose, it is necessary to create and maintain awareness and the significance and role of technical and technological innovations as a pro-development factor. In the organization's economic practice, the company's development philosophy based on increasing production capacity — rather than optimizing it — still dominates; on the expansion of production halls and enlarging the machinery park

or increasing employment or changing working time or organization of work based on cost reduction. Other enterprises operating in the sector are perceived as competitors rather than as partners who can be helpful in solving business difficulties. Currently, the CSO has the most current data on the state of innovative investments made by enterprises in Poland. This is a consequence of the implementation by the State of an obligation (threatened with a financial penalty) to provide reports with various types of information by organizations. These reports have defined queries, data format and strictly defined deadlines by which they must be delivered — currently electronically. In addition, this work uses an interesting and very up-to-date study prepared jointly by the consulting company Deloitte, the National Center for Research and Development and the PKO BP Bank regarding the effectiveness of innovations, technical and technological solutions, their financing as well as opportunities and threats related to this issue.

## Dependencies between stakeholder relations and technological changes

Modern organizations establish and maintain relationships with other entities because the value they possess makes it easier for them to function in a competitive economy. Moreover, it enables and even facilitates stimulation or achievement of innovation. Therefore, it also has an impact on whether and how the organization manages the broadly understood process of change.

Relations with external entities, as already mentioned, are determined by a wide range of factors, but from the point of view of this article the most important is their value, i.e. the potential of the bond built. It is the one that contributes to stimulating or even initiating and further developing the organization's innovativeness. Thus, it may stimulate its propensity to take risks related to generating and implementing broadly understood innovations (Wiącek, 2020; Pichlak, 2012). The entity's potential for such activities is determined mainly by various factors implying changes in the organization, as well as inter-organizational relations with their network value potential (Downar, & Niedzielski, 2006; Rzepka, & Olak 2017). Therefore, they usually enable, through more effective, skillful use of intangible resources such as knowledge, technology or experience, to initiate or maintain the innovativeness of the company and the potential for optimal implementation of widely understood technological changes. The consequence of this combination of influence is most often a significant improvement in the competitive position of such an

organization (Smolarek, 2010; Tidd, & Bessant 2013; Wiącek, 2020). However, it should be stressed at this point of consideration that the contemporary understanding of the sources of technical innovation and change, which differs significantly from the one initially used in the literature, is very important (Ibidem). It was once believed that innovations arise only inside the organization itself and are the result of its use of various own assets. Nowadays, however, it is believed that the technical innovativeness of an organization is not only a result of its internal resources, but also, or rather, above all, of the optimal use of external resources coming from cooperation between enterprises (Wiącek, 2020). In order to achieve or maximize such an effect, an organization must establish and maintain relationships (Luecke, 2005; Sankowska, 2009) within the market network of economic relations in which it operates (Czakon, 2007). The organization's membership in various formal and informal business groups, such as the so-called SNA Market Networks in the literature, as well as relationship management has a positive impact on creating and implementing innovation and change (Dewick, & Miozzo, 2004; Aarikka-Stenroos, Sandberg, & Lehtimäki, 2014; Kim, & Lui, 2015). The functioning of an organization in a network of relations, i.e., in the system of relations with other entities with which it cooperates (Czakon, 2017) significantly facilitates the technical innovativeness of the organization and thus the sharing of knowledge, conducting research or increasing access to resources, especially if they are unique. Such issues as dissemination on the market of information about innovations created by the organization and designed changes, i.e. promoting them, are also important for maintaining the organization's market advantage. It significantly facilitates this process and thus accelerates the benefits of sharing such business information by other entities that are co-workers of the organization and thus the previously described stakeholders. Therefore, in order to maximize the effects of its innovation, also currently called market agility, according to Czakon the organization should:

- create relationships with other organizations operating in its environment;
- ensure that all subjects of the relationship are kept separate so that each of them independently pursues their own goals;
- exchange resources by means of continuous interaction with the entities from the environment. In this way it will naturally create a common knowledge and experience base for itself and its stakeholders. The "exchange platform" that will be created in this way will enable synergy of strategic activities undertaken by all organizations participating in the process;

- generate innovation only through active interaction with other entities. This will create a competitive advantage created by the existence and maintenance of ties.

The way, the method by which an organization will make the described interactions is its individual, distinctive model of managing relations, changes and innovations with their potential. These activities are carried out using its unique way of interaction, coordination and effective communication (Czakoń, 2017). The modern organization is therefore dependent on effective cooperation with other entities related to it in many aspects affecting its strategic advantage. On the basis of these ties, it can create and develop its own value, increase its competitiveness, and influence the facilitation of its operations in unfavorable market circumstances. Therefore, network structures and relations existing in them positively influence development and innovation. They facilitate and stimulate changes in the organization that are inseparable from innovation. These are phenomena which, as the literature indicates, are

interconnected and permeate each other, significantly influencing the construction and maintenance of the strategic advantage of the organization. In the case of the change management phenomenon, a deep connection with the theory of stakeholders needs to be emphasized. Analyzing the causes of change, a common source of both phenomena is easily noticeable. It is enough to analyze the factors determining the organization's propensity to change. They are simply divided into external and internal ones (Zarębska, 2002). The internal ones, which are the result of management decisions, are aimed at further development of the organization, while the external ones are the result of events independent of the organization itself. Such events, which occurred in the environment and caused or even forced the organization to adapt. The changes taking place in the organization's environment affect all areas of its functioning. According to J. Penc, "they force a specific transformation and adjustment to the structure and potential of the environment. They cause the company to often reject what was

**Table 3. External factors causing change in the organization**

Company environment	Change inducing/shaping factors
International environment	<ul style="list-style-type: none"> <li>● Political changes in Europe and the world</li> <li>● Raw material crises</li> <li>● Integration and disintegration processes</li> </ul>
International and national economic situation	<ul style="list-style-type: none"> <li>● Globalisation of economies</li> <li>● Market Virtualization</li> <li>● Strong increase in competition</li> <li>● Increased customer requirements</li> </ul>
Legal environment	Tax, customs, labor laws that stimulate or inhibit entrepreneurship and job creation
Market forces	<ul style="list-style-type: none"> <li>● Globalisation of markets</li> <li>● Market Virtualization</li> <li>● Strong increase in competition</li> <li>● Increased customer requirements</li> </ul>
Social and cultural trends	<ul style="list-style-type: none"> <li>● Demographic phenomena</li> <li>● Social values</li> <li>● Lifestyle</li> </ul>
Technological changes	<ul style="list-style-type: none"> <li>● Rapid IT development</li> <li>● New solutions for materials, processes and products</li> </ul>
Ownership changes	<ul style="list-style-type: none"> <li>● Sale of companies</li> <li>● Acquisitions, mergers</li> <li>● Privatisation of companies</li> </ul>
Ecology	<ul style="list-style-type: none"> <li>● Changes in the environment</li> <li>● Environmental legislation</li> <li>● Eco-movements</li> </ul>

Source: Own elaboration.

effective in the past and even "invent" the future, transform itself and create itself anew in order to be able to realize its objectives and better serve its environment and at the same time itself" (Zajac, 2006). The most important external factors causing specially technical change in the organization are presented in Table 3. Thus, external factors that are a direct source of change force the organization to strive for greater technical innovation. Relationships with their potential, properly used and managed, can significantly support the functioning of the organization in the situation of implementation of change or reaction to its effects if it comes from outside the organization.

Another noticeable implication is the resulting conclusion that the functioning of an organization in a network of relations can contribute quite significantly to such activities. Table 3 presents a summary of a case study conducted by the author of this article in March 2019 on the example of one of the Polish organizations operating in the bottling sector. The bottling industry in Central and Eastern Europe consists of three leading segments: alcoholic beverages, non-alcoholic beverages and waters. In each of these segments, there are sub-segments of characteristic beverage types. The sub-segment of alcoholic beverages had existed and

developed, in fact, long before the birth of the modern civilization. In Poland the basic beverage, since the Middle Ages, was beer. It was made of cereals — mainly barley (Curry, 2017, p. 31–36). Various kinds of beer were produced — starting from light "home-made" beers with a short fermentation process, to those containing more alcohol, made of hops (Fałat, 2005, p. 21). Small quantities of vines were grown, brought by monks from western and southern Europe. Regular import of wines from abroad started in the late 14th/ early 15th century. However, due to high costs, it was very limited and was only aimed at satisfying the demand of the court. The 1990s had brought a revival mainly in beer production. It was the period of privatization of breweries, nationalized during the communist times (Fałat, 2005). As the free market economy developed, interest in the Polish brewing market grew among the biggest global players on the market.

Table 4 presents the consequences of technological changes for selected stakeholder groups in the bottling industry.

The results of this study prove that having relations by an organization not only increases its technical innovativeness and competitiveness, but also facilitates the management and implemen-

**Table 4. Consequences of technological changes for selected stakeholder groups in the bottling industry**

Type of stakeholder	Technological changes focused on stakeholders	Relational Consequences	Examples in the bottling industry
Customers	<ul style="list-style-type: none"> <li>Changes in technology to create a new product or service</li> <li>Technological changes resulting from the examination of consumer decisions (applications)</li> <li>Technological changes aimed at green consumption</li> </ul>	<ul style="list-style-type: none"> <li>Better satisfied need, personalization of consumer goods (elevated convenience)</li> <li>Creating product sets — faster and easier shopping, and thus building shopping habits</li> <li>Include a healthy lifestyle in the purchasing process</li> </ul>	Isotonics, fit products, functional waters, other product packaging formats (shots) Product mixes in-outs
Suppliers	Technological changes taking into account trends in green consumption in supply chains	The necessary for suppliers to focus on pro-health and pro-ecological trends in customer behavior	Greening of distribution processes
Workers	Technological changes in the field of automation of production lines	The need for continuous improvement of competences allowing the implementation of the company's market goals	Line automation in the field of changeovers enabling changes in the packaging format and in the field of chemical cleaning
Local society	Technological changes resulting in a reduction in the emission of heat, waste, including chemical wastewater Technological changes resulting in the renewable use of resources	Limiting the effects of exploitation of the local environment	Cooperation with the local government and establishing the principles of cooperation in the field of environmental protection

Source: Own elaboration on the basis of research conducted in 2019 in enterprise from polish bottling industry.



tation of other changes of different nature. Therefore, it is important for an organization not only to consciously establish relations, but to do so it should have knowledge about what can determine them and how they can successfully influence the advantage and innovativeness.

In the current market and economic situation prevailing in Poland, we can perfectly observe the materialized positive effects of the combination of relationship management with stakeholders, the functioning of enterprises in the network together with innovation and willingness to implement technical changes.

Frequent mutual exchange of experience has led to the dumping of innovative solutions, services or products (<https://nettg.pl> 2020; <https://www.pb.pl> 2020). As a result, an increase in export dynamics was already recorded in June this year, which, as estimated by economists associated in the Polish Chamber of Commerce, was to be expected much later this year due to the global epidemiological situation (<https://nettg.pl> 2020). Moreover, according to the projection published by the National Bank of Poland, thanks to the flexibility of Polish organizations' ability to react quickly to changes in their environment, the Polish gross domestic product, after the initial decline recorded this year, will gradually increase by 4.9% in 2021 and 3.7% in 2022. It should also be noted that compared to the results of other EU countries, the Polish gross domestic product, which in the second quarter decreased by 8.2 percent year-on-year and 8.9 percent compared to the previous quarter, remains at a very high level (GUS 2020). Poland recorded one of the lowest declines in the EU. Naturally, this was also influenced by an early and rapid response to the pandemic situation, the introduction of restrictions, but also — or above all — it was precisely the flexible, innovative, corporate behavior that made the effects of the crisis caused by the global crisis less severe. A very good example of this type of action were all those companies that started to spill disinfectants (Orlen, bottling industry, cosmetics) or sew protective masks (clothing industry) according to their own technical capabilities. To sum up, therefore, in a situation which was difficult for all market players, it was easier to cope with the survival of those who did:

- they had support from their stakeholders,
- have the inclination and courage to take the risk of innovation,
- thanks to both of the above, they were competent to implement and manage the implementation of the change efficiently and quickly.

All these phenomena as well as the way of dealing with them were a flexible response to factors from the organization's environment and derived from cooperation with stakeholders in the network.

## Conclusions

Relationships between technical and technological changes and relations with various groups of stakeholders are visible. Relationships with stakeholders can determine the making of changes in technology. On the other hand, enterprises undertake such changes to achieve the durability of relations with stakeholders. An example of this type of coupling is the bottling industry. The bottling industry is an example of this. At this stage, only certain dependencies were identified. This problem requires in-depth analysis and deepening. Nevertheless, the implementation of technology (also in terms of changes) depends on cooperation with the environment, limiting uncertainty and increasing trust (Witness, & Wiśniewska, 2015). Technology, technological changes are also a relationship in the sense of sharing knowledge, resulting from inter-organizational relations (Panteli, & Sockalingam, 2005). Technical and changes in the bottling industry determine the consumers' purchasing behavior. They allow producers to deliver products that meet expectations and to adapt to their lifestyle. On the other hand, they provide knowledge about the market and customers, which gives the customer more choice. Such activities strengthen the relations of enterprises with target markets. Green technologies are of great importance. In the case of suppliers of raw materials and semi-finished products, introducing technological changes is a condition for functioning in the value chain that has been created in the industry. Technological changes allow them to build partnerships and force them to be oriented towards green technologies. Employees working in the bottling industry also suffer the consequences of technological changes. They must constantly improve their qualifications, which contributes to the achievement of the market goals of enterprises. On the other hand, when equipped with new qualifications, they become more competitive on the labor market, which may weaken their relationship with the current employer. Technological changes can affect relationships with local communities. Bottling companies, using green technologies, and thus improving technological processes, may have an impact on reducing the effects of environmental exploitation.

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