Abstract: The driving force of civilizational change was and is the development of science, education, and great ideas that determine human actions, shaping the attitudes and behavior of individuals, organizations, and entire societies. Such an idea is sustainable development, an anticipation of the possible future challenges of society, so knowledge about it should be communicated to a wide audience because action is possible when various entities have the appropriate knowledge. Implementing the concept of a sustainable organization requires an organization to change its mindset (testing existing principles, beliefs, or behaviors) and to take steps to build an organizational culture so that the idea of sustainability applies to all levels in the organization, i.e., jobs, processes, and strategies. The changes should go in the long-term direction, not just be short-term actions. What is needed, then, is a deep analysis of existing resources and an understanding that the organization does not operate in a vacuum, but interacts with the natural environment, the local community, employees, shareholders, and stakeholders. The purpose of the article is to identify ways to implement the concept of sustainability through knowledge management using an e-learning platform in the relationship ecosystem using the example of the chemical company ‘Grupa Azoty’ Group. A case study method was used, which allowed the analysis of the issue of sustainable development in the context of knowledge management and corporate e-learning. In addition, an analysis of the state and prospects of the chemical industry in Poland during the period of sustainable transformation as a business environment for ‘Grupa Azoty’ Group was carried out. For the described company, the development and implementation of an e-learning platform can support the implementation of a sustainable development strategy.

Keywords: e-learning; managing knowledge; sustainable development; chemical industry; company

1. Introduction

Sustainable development, also known as durable development or eco-development, is the concept of an economy assuming the level and quality of life at the guaranteed level by the development of civilization at a given time. This summarizes the first sentence of the report of the World Commission on Environment and Development (WCED) from 1987, also known as the Brundtland Commission, entitled Our Common Future: ‘At the present level of civilization, sustainable development is possible. It is such a development in which the needs of the present generation can be satisfied without diminishing the future generations’ chances to satisfy their needs’. It aims to ensure economic development while protecting social and environmental sustainability [1].

The essence of the idea of ‘sustainable development’ is to develop such mechanisms and ways of acting that will allow continuing further civilizational development whilst protecting the rights and laws of nature and the socio-economic striving of humanity. It is an original vision and a proposal to tackle environmental problems or civilizational problems based on revised mechanisms of economic and social development.
socioeconomic development is to be accomplished, it must be re-evaluated and guided by the principles of permanence and self-sustainability. The idea of sustainable development was disseminated by ONZ (the United Nations Conference on Environment & Development (UNCED) in 1992 in Rio de Janeiro. During this Earth Summit, the principles contained in the ‘A global Agenda for change–Agenda 21’ were adopted. The idea of sustainability is intended both to protect natural resources and to ensure economic development resistant to crises. The preamble of the document noted: ‘Humanity stands at the decisive point of its history. We are experiencing increasing differences between and within nations, increasing poverty, more and more disease and illiteracy, and increasing damage to the ecosystems on which our prosperity depends’. At the Sustainable Development Summit held in September 2015 in New York during the plenary session of the UN General Assembly, 193 member states came to an agreement on the final document ‘Transforming our world: the 2030 Agenda for Sustainable Development’ (Agenda 2030 for Sustainable Development) [2]. It contains 17 goals and 169 tasks regarding eliminating poverty and building a more sustainable world over the next several years. The Sustainable Development Goals apply to the whole world (developed and developing countries) and are based on three coherent elements: economic growth, social inclusion, and environmental protection. They are intended to stimulate action in areas of the most relevance: people, our planet, prosperity, world peace, and partnership. They are an expression of common global tasks tailored to the capabilities of a given country. A set of global indicators has been developed to monitor and analyze individual activities by the Inter-Agency and Expert Group on SDG Indicators and approved by the UN Statistical Commission.

Sustainability encompasses three dimensions, namely environmental, social, and economic sustainability [3]. Environmental sustainability emphasizes the environment and resources; social sustainability refers to society and people; and economic sustainability focuses on the economic and financial aspects of companies [4]. Decreasing natural resources and advancing global warming are causing organizations to feel strong pressure from society [5] and other stakeholders to abandon practices that cause environmental problems and adopt those that ensure sustainability [6]. To achieve the goal of sustainability, dynamic organizations are adopting a number of strategies that have been proven to increase organizational performance, such as knowledge management and quality management. The concept of sustainable development implemented by organizations in the knowledge environment fits into the model of holistic knowledge management (SET KM Model) is based on three pillars: (1) the organization’s strategy, i.e., the strategic organizational concept of awareness, knowledge, and learning; (2) an environment for the creation, sharing, and use of knowledge, dependent on the organization and its partners and objective factors; and (3) knowledge tools conducive to effective management processes, including knowledge diffusion [7]. The concept of sustainable development takes on particular importance in the era of society and the knowledge economy because knowledge is the driving force behind the development of individuals, organizations, and the entire economy. Knowledge is an intangible asset that plays a key role in the success or failure of any organization [8]. Organizations treat it as an instrument that enables them to compete effectively in the market [9]. Knowledge is an abstract concept that is free from the material world and has two forms, namely explicit knowledge and tacit knowledge [10]. Explicit knowledge is any knowledge that can be codified, verbalized, communicated, and articulated. Typically, explicit knowledge is in written form, such as written reports, books, and manuals [8]. Tacit knowledge is hidden and unwritten knowledge that exists in the minds of people [11]. It is acquired with experience and through contact with people. As it is unspoken and unwritten knowledge, compared to explicit knowledge, tacit knowledge is difficult to pass on to others [12]. Knowledge management can be defined as the transformation of tacit knowledge into explicit knowledge that enables a seamless transfer of knowledge in the company [13]. In the literature describing the essence and significance of the concept of knowledge management, there are at least three different approaches to the study of this management structure. They depend on what, in the author’s opinion, contributes to the development of
knowledge management, i.e., IT instruments, organizational context (methods–processes), as well as human and social relationships and ties in the organization [14].

Over the past two decades, knowledge management has been recognized as an essential element of strategy design, the development of new products and services [15], and operational process management [16]. Of course, there is no shortage of critical opinions about the usefulness of this concept. Many of the managers studied, especially senior managers, believe that knowledge management does not bring the expected benefits and discredit it as a management method, treating it rather as unique competencies [17], as the pragmatics of knowledge management.

The results of a significant part of the research indicate the lack of a link between knowledge management and business performance [18]. Therefore, managers are constantly looking for ways to develop knowledge management, and in particular to develop new forms of acquiring knowledge, applying this knowledge in the organization, new tools for managing the flow of information, and using hidden knowledge (tacit knowledge) or knowledge from experience. In the opinion of Wong et al., knowledge creation involves the creation of new concepts and notions by interacting with people through tacit and explicit knowledge [19]. Given changing customer preferences and a dynamic business environment, organizations need to acquire knowledge from employees, customers, and suppliers to continuously improve the quality of their products and services [16]. Acquiring knowledge also enables companies to capitalize on their strengths and verify their weaknesses [5]. The knowledge gained should be shared with colleagues, especially those in relevant departments. Learning organizations encourage their employees to actively participate in various organizational matters. Employee participation not only enables management to analyze problems from different perspectives but also helps propose viable solutions. Finally, the knowledge gained and shared must be applied to relevant areas so that process improvements can be made. The essence of knowledge management is the flow of knowledge and the process of creating, sharing, and applying knowledge [20]. Nowadays, knowledge management in an organization is gradually shifting from tools, and contextual dimensions of knowledge, to knowledge embedded in processes and people [21]. On this subject, the literature shall be classified into many models of knowledge management processes built from different sets of elements [22]. Laloux indicates three main knowledge management processes [23]:

- knowledge creation—these are all activities aimed at expanding the knowledge resources in the organization. This process may take place through human resource development or by obtaining information from the target or general environment. Knowledge should only be acquired or captured externally when the organization’s human resource development is not promising. Knowledge is unique only when it is created on its own. Therefore, the best alternative is to internally acquire knowledge by expanding intellectual capital or, if that is impossible, by taking over the entire business with its potential. This allows the company to independently make its own decisions and initiatives to introduce changes;
- knowledge codification—its purpose is to secure, collect, and share knowledge (documents). The process tends to present knowledge in the most accessible manner to all members of the organization. It consists of the appropriate presentation of the knowledge of the organization, making it available to anyone who wants to use it at a given moment and disseminating these resources inside and outside the organization. Consequently, the accumulated knowledge becomes understandable and easy to locate;
- knowledge transfer—includes the transfer and assimilation of knowledge. In the event of clear knowledge, it is communicated by phone or e-mail. There are many methods: audio or video conferencing, groupware, email, internet, and intranet. In the case of tacit/hidden knowledge, which results from experience and skills, there are two dimensions: professional (gestures, movements) and non-integration (thinking, perceiving reality, the vision of the future). The determinant of the effectiveness of
knowledge transfer is the appropriate management of organizational culture, which facilitates individual work and team commitment [24].

Rusly et al. list the creation, storage, sharing, and application of knowledge [25]. Knowledge acquisition refers to the process by which organizations acquire knowledge from internal and external sources [26]. Knowledge creation, on the other hand, refers to an organization’s ability to develop new and useful knowledge about various aspects of organizational activity [27]. Knowledge storage is the process of structuring, organizing, searching, and capturing knowledge that enables organizations to record the knowledge in various forms, such as written documentation and electronic databases [21]. Knowledge sharing is the process by which individuals exchange their implicit and explicit knowledge in order to create new knowledge [28]. The application of knowledge refers to the ability to use relevant knowledge to improve the services offered by an organization [29]. Effective knowledge management allows an organization to become more innovative and effective [30]. For this reason, many organizations treat knowledge management as a strategic resource that enables them to achieve better results than the competition [10].

In the context of sustainable development, knowledge management is primarily responsible for creating and using knowledge resources in a sustainable manner by taking into account social, environmental, and economic aspects [31]. Learning organizations emphasize combining knowledge management strategies with overall organizational strategies so that sustainability can be achieved in all respects [6]. Shahzad et al. found that the absorption capacity of organizational knowledge has a significant impact on their environmental performance [32]. For this reason, knowledge management, with the help of knowledge workers, can strengthen the sustainable development of enterprises. Although many researchers, such as Breznik [33], 2018, Brix [34], and Yusr et al. [30], emphasized the importance of the knowledge management in terms of overall innovation and organizational performance, e-learning is becoming an increasingly effective instrument as a method of improving organizations in the field of knowledge and information. In the opinion of Deschenes and Maltais, it is an educational practice conducive to the learning process that brings the learner closer to knowledge using various technological tools [35]. In the context of this definition, e-learning includes various forms of e-education, namely: academic e-learning, school e-learning, and corporate e-learning. As opposed to school and academic e-learning, corporate e-learning is mainly aimed at practical goals related to increasing the competitiveness of the company, and the method of learning via the internet can be detached from an educational institution and proceed spontaneously, so it could be described as non-institutional self-education. Spontaneous learning, detached from educational institutions, is referred to as learning from others, especially from stakeholders. It primarily entails utilizing their experience, expert skills, and knowledge, as well as benefitting from their knowledge on cooperation in satisfying needs, both similar and complementary [36]. It enables overcoming the barrier of collecting, systematizing, using knowledge, storing all possible data (big data, IT cloud), and creating modern outsourcing of information and knowledge; and it is one of the most effective ways of communicating with clients and educating and inspiring recipients and stakeholders. Digital content and services are becoming increasingly available. For example, it is possible to receive alternative answers to properly prepared questions, for example, on economic indicators or risk assessment. Without proper communication within an organization, various resources are either completely useless or insufficiently used, and the pragmatics of knowledge management and its effectiveness are problematic and debatable. Similarly, without a significant development of relationship capital and cooperation with stakeholders, the idea of knowledge management would be extremely difficult. New technological solutions, which keep appearing, have caused e-learning platforms to begin to fulfill other functions as well—to develop into systems enabling the management of intellectual capital for enterprises and the management of employees’ knowledge.

In the opinion of the authors, the synthesis of the three elements (Figure 1) described above is the basis for the development of modern companies in the chemical sector in Poland.
The aim of the article is to identify ways to implement the concept of sustainable development through knowledge management with the use of an e-learning platform in the relationship ecosystem, using the example of the ‘Grupa Azoty’ Group chemical company. The presented company is a leader in the chemical industry sector in Poland. Currently, products, raw materials, and production processes must take into account the principles of green chemistry and green engineering as part of an extended definition of performance, including aspects of sustainable development. This transformation will require the best traditions of science and innovation combined with new, emerging systems thinking and systems design that start at the molecular level and have a positive impact on a global scale. In the future, two goals should be set: How to maintain and significantly expand efficiency progress, while at the same time reducing or eliminating harmful effects that threaten the sustainability of the well-being of people and the planet? The answer to this question is an important challenge in the field of ‘green chemistry’ and ‘green engineering’.

2. Materials and Methods

The subject matter of the article is an important element in the discussion of e-learning platforms as an instrument not only for ensuring employee development management but also for implementing knowledge management processes in the ‘Grupa Azoty’ Group. The development of the topic required not only an analysis of the literature and statistical data but also direct interviews with the company’s managers and specialists. Additionally, the websites of the ‘Grupa Azoty’ Group were analyzed, as well as the company’s strategy reports for 2013–2020 [37] and 2021–2030 [38]. The subject of the analysis was also the Polish Chamber of Chemical Industry’s 2021 Report ‘The Chemical Industry in Poland-Position, Challenges, Prospects’ [39] and the government’s ‘Industrial Policy of Poland’ report on strategic industries [40]. The latter report contains a SWOT analysis for the chemical industry in Poland. The analysis reflects the strengths and weaknesses of chemical companies, including the ‘Grupa Azoty’ Group, the industry leader. Full access to the company’s research material was limited due to the fact that the ‘Grupa Azoty’ Group was classified as a strategically important company in Poland, which in practice means that access to a lot of data and information is difficult. Based on the available material, the following research questions were formulated: How to develop knowledge for the sustainable development in a strategic chemical company for the Polish economy? How to develop a knowledge management concept using an e-learning platform at the ‘Grupa Azoty’ Group, and what should be the target form of this platform?
3. The Current State and Prospects for the Long-Term Development of Poland’s All Data Presented in the Paper

The report of the Polish Chamber of Chemical Industry entitled ‘The Chemical Industry in Poland—position, challenges, and prospects’ [39] indicates the strategic potential of the chemical industry in the Polish economy. Figures 2–4 show the number of people employed in the chemical industry; the sold production of the chemical industry; and the capital expenditure of the chemical industry in Poland in 2012–2020.

![Graph: Number of employees in the chemical industry in Poland](image1)

**Figure 2.** Number of employees in the chemical industry in Poland. Source: Own study based on the GUS Statistical Bulletin [41–50].

![Graph: Sold production of the chemical industry in Poland](image2)

**Figure 3.** Sold production of the chemical industry in Poland. Source: Own study based on the GUS Statistical Bulletin [41–50].

![Graph: Capital expenditure of the chemical industry in Poland](image3)

**Figure 4.** Capital expenditure of the chemical industry in Poland. Source: Own study based on the GUS Statistical Bulletin [41–50].
In 2021, the Polish chemical industry was officially recognized as one of the core industries for the development of the Polish economy in a document announced by the then Ministry of Development, Labor and Technology in June 2021, titled ‘Industrial Policy of Poland’ [40]. The great strength of this industry and its contribution to the domestic GDP, as well as its participation in the processes of sustainable development through the creation of modern products and ecological solutions, are recognized. The SWOT analysis for the chemical industry presented in Table 1 places it in the group of strategic industries that will determine Poland’s economic growth in the coming decades. Opportunities for this development are seen in the pro-ecological transformation of chemical companies and their digitization.

**Table 1. SWOT analysis for the chemical industry in Poland.**

| Strengths | Weaknesses |
|-----------|------------|
| • Experienced, qualified staff | • Limited education system resulting in reduced interest in chemical technology |
| • High demand for chemicals in inter-industry supply chains and among consumers | • Relatively weak cooperation between R&D and industry |
| • Relatively high investment in modernization of technical infrastructure or innovation of production technology, monitoring, and automation of industrial processes, etc. | • Limited cooperation with technology parks |
| • Geographical location of rivers | • Low competitiveness in non-European markets |
| • High-quality chemical products | • Public perception of the chemical industry as an environmental risk |
| • Rapid industry adaptability to market needs | • High labour costs |

| Opportunities | Threats |
|---------------|---------|
| • Use of advanced ‘environmentally clean’ manufacturing technologies | • Increase in electricity and heat prices |
| • Increase in cooperation between science and industry in the field of innovation | • High prices of EUA (CO\(_2\)) allowances |
| • Increase in the production of highly specialized chemical products | • Increase in raw material prices |
| • Increase in competitiveness of Polish chemical products through the creation of specialization strategies focused on innovative solutions and reduction of production costs | • High costs of implementing innovative solutions |
| • Improving the image of the chemical industry through advertising campaigns, engaging partners in joint pro-development, pro-environmental initiatives | • High transport costs |
| • Increasing the share of chemical recycling in the processing of plastic waste | • Limited access to raw materials |
| • The creation by the state of various forms of incentives, such as relief and financing a certain part of the development activities of enterprises | • Restrictive EU legislation |
| • Improving the quality of education in the field of chemistry at the primary, secondary, and university levels | • Interruption of supply chains due to technical failures, closure of material suppliers, etc. |
| • Increase in automation and digitization in the domestic chemical industry | • Political and economic situation in the EU, in the world: embargoes, blockade of exchange of goods and services, e.g., in the context of a pandemic |
| • New supply chains due to pandemic | • High costs of loans designated for business development |
| • Large domestic market for products | • Poland’s shrinking water resources |

Source: Own study based on [40].
The changes in the chemical industry under the conditions of sustainable development are considered by taking actions based on five key development axes: digitalization, green deal, security, localization, and society of high competencies, which will be coherent with sectoral development directions. In the area of digitalization, the chemical industry faces the challenge of introducing Industry 4.0 technologies (big data, IoT, robotization), which enable the optimal control of processes and eventually their partial or full automation. However, in terms of needs, it is necessary to indicate financial support for the installation of systems for collecting and using data in the production process, substantive support for companies in the area of integral digital transformation, improving employees’ qualifications in the field of Industry 4.0, and increasing cooperation and networking among industry stakeholders. Examples of instruments for the implementation of this axis are The Digital Innovation Hub (DIH) services; reskilling/upskilling; support for industrial enterprises’ long-term digital growth; and the formation of Future Industry Regional Councils, comprised of representatives from business environment institutions, entrepreneurs, scientists, and self-government. As far as the Green Deal is concerned, for the chemical industry, meeting the stringent requirements of the European Green Deal climate targets in a relatively short period of time means a huge impediment to the energy transition and the transition to renewable energy sources. In addition to the necessary investment outlays, the industry—particularly in Poland—must also take into account the drastic increase in energy costs resulting from rising prices of CO$_2$ emission allowances and the conditions of the Polish energy system. Burdening companies with the costs of low-carbon transformation and a closed-loop economy is an acute barrier that is difficult for companies to overcome. Therefore, it is necessary to finance transformation projects; reduce dependence on loans; subsidize pilot projects for CCS/CCU and chemical recycling; develop and establish a certification system for recycled materials; finance R&D work; provide universal access to knowledge in priority areas of the Green Deal (eco-design, environmental assessment of products and organizations, recyclability of packaging); increase the scope of glass recycling; create a system of financial incentives; simplify waste legislation; revise the idea of a deposit system; facilitate the launching of own or dedicated production of energy from RES; use material from used tires for road production; and develop green hydrogen. Necessary instruments for undertaking activities within this axis are support in the implementation of GOZ (Circular Economy) projects; R&D support; green public procurement; support for mechanisms for adjusting prices at the EU borders for imported high-emission products; and Green Innovation Hub services. Security activities include the creation of critical infrastructure used in the production of chemicals, which requires a unitary approach based on appropriate, standardized technical requirements. Critical equipment, like transport equipment, requires high safety standards. For these activities, it is necessary to ensure the cyber security of digital industrial plants. Examples of instruments for ensuring technological security are DIH services. Increasing environmental requirements reduces the competitive position of Polish chemical companies. To improve their competitive position, it is recommended to ensure equal opportunities in competition with foreign companies with weaker environmental regimes and a more effective system of protecting competition in the domestic market in particular. The instruments to help in these activities include the development of mechanisms for adjusting prices at the EU border for imported high-emission products.

The chemical industry is experiencing a shortage of workers with the right skills. In order to prevent this, it is proposed to increase the number of skilled workers, create conditions for the recruitment of immigrants, and increase workers’ knowledge of the law. Instruments to support this include reskilling and upskilling; dual (tertiary) education; demand-driven courses of study; and support for the training policy of consulting companies. The opportunities and challenges facing the industry are related to the implementation of the assumptions arising from the European Green Deal and the ‘Fit for 55’ package announced by the European Commission [51]. This set of legislative initiatives will have a significant impact on the further functioning of the industry. Taking into account
the aspirations of the EU countries to achieve climate neutrality by 2050, the Polish chemical industry, as a responsible and innovative sector, should undertake activities aimed at protecting the natural environment and satisfying consumer needs. Great potential on the road to climate neutrality is seen in hydrogen, called the ‘fuel of the future’. The Polish chemical industry is planning green investments related to, among other things, the production and development of hydrogen technologies. The ‘Grupa Azoty’ Group, one of the leading companies in the industry, has already started work aimed at reducing its carbon footprint by increasing the use of green energy, which includes the development of a hydrogen economy. For this purpose, on 25 February 2022, for the initiative of the Industrial Development Agency, the Lower Silesian Hydrogen Valley was established, which is based on the potential of both industry and science. The ‘Grupa Azoty’ Group’s joint-stock company is one of the members of the association. The company currently produces over 400 thousand tons of hydrogen per year, but from syngas, so it is not ‘green’ hydrogen. In the transition period, the production of ‘green hydrogen’ will not fully meet market demand and will have to be supplemented with hydrogen produced from natural gas. The hydrogen produced by the company meets most of the parameters required by the electromobility sector for use in hydrogen vehicle fuel cells. In the longer term, the ‘Grupa Azoty’ Group plans to build a pilot plant, followed by a full-scale installation to produce hydrogen from renewable energy. This is a key project in the implementation of the EU’s energy policy, consistent with the assumptions of the European Green Deal, which includes targets enabling ecological transformation. The success of the Polish Hydrogen Strategy and the solutions it proposes, including national hydrogen valleys, depends on whether and how quickly a hydrogen ‘industry’ can be created in Poland. This will require friendly legislation, infrastructure, and the co-financing of the first projects, as well as the cooperation of all interested parties, with particular emphasis on industry experts’ organizations. The paradigm of sustainable development promotes the pursuit of harmony based on simultaneous consensus among three components: society, environment, and economy. This assumption is supported by the development and implementation of technologies reducing today’s ecological footprint [52] and the level of emitted pollutants.

The active participation of the chemical industry in Poland in sustainable development processes means the necessity of the continuous implementation of modern technologies and the development of environmentally friendly solutions by chemical companies. Chemical products, as key to the development of new tools, processes, and equipment, and also indispensable to the functioning of a number of other industries, will put the chemical sector in the role of one of the leaders in the process of ecological transformation. Building this position requires reconciling environmental goals with the ongoing activities of the sector. Chemical products, as key to the development of new tools, processes, and equipment, and also as indispensable to the functioning of a number of other industries, will put the chemical sector in the role of one of the leaders in the ecological transformation processes. Building this position is not an easy task, as it requires reconciling environmental goals with the day-to-day functioning of the sector.

The strategic importance of the chemical industry in Poland determines the need for further development using modern knowledge management tools in the context of sustainable development. E-learning is becoming an increasingly effective instrument as a method of improving organizations in the field of knowledge and information. It allows the barrier of collecting, systematizing, using knowledge, storing all possible data (big data, IT cloud) to be overcome and the creation of modern outsourcing of information and knowledge; it is one of the most effective ways of communicating with the client and educating and inspiring the recipients and stakeholders.

4. E-Learning Platform in a Chemical Company-Concept Proposal

The huge amount of data collected and processed hides invaluable knowledge of both the processes occurring within the company and in its environment. This knowledge has an impact on business strategy, which manifests itself in the evaluation of the company’s
position in the market and in the selection and implementation of such concepts of action that ensure its profitable, targeted development. The use of appropriate technology supporting knowledge management will ensure the optimum flow of knowledge streams both horizontally and vertically in the organizational structure, thus facilitating employees’ access to knowledge resources, knowledge sharing within the organization, and knowledge accumulation at decision-making levels at all levels of the organizational structure.

The key problem of contemporary corporations, whose employees have too little time to expand their knowledge, is to organize the process of acquiring, accumulating, and efficiently managing knowledge, using high-quality relationships present in the organizational structure. Knowledge-intensive companies face the difficult challenge of building a structure that maximizes knowledge productivity.

Such an organizational structure should depend on the context of the enterprise and be designed to take into account both the tangible resources of the enterprise and its knowledge resources. It should enable efficient knowledge acquisition and its continuous renewal, as unused knowledge becomes obsolete and loses its value. Therefore, it is necessary to apply such a model of knowledge generation and management and such a method of organizational learning that intellectual capital contributes to increasing the effectiveness of achieving the strategic goals set by the organization. This means that there is neither a universal concept of knowledge management nor a single definition, as it is a complex process based on choosing a type of competitive advantage for an enterprise on the basis of its knowledge resources (people, technologies, data, and information).

Knowledge management is therefore a process, in which, in order to achieve the objectives,

- knowledge resources owned by the enterprise are used;
- external knowledge resources are sought and absorbed;
- everyone involved in the decision-making process is required to share and create knowledge.

Today’s competitive situation forces organizations to actively enter the realms of the e-economy, resulting in an increased value of their intangible assets. Effective knowledge management systems and the consolidation of information flow determines the application of e-learning systems in the functioning of an enterprise. E-learning covers all processes related to teaching and learning in the organizational environment and through modern information technologies, especially the internet. Key features of e-learning are:

- interactivity of the learning process, which, through available technical means, enables the realization of specific relationships;
- e-learning is user-centered;
- e-learning facilitates communication;
- e-learning takes place through a computer network;
- an e-learning platform is used for e-learning (knowledge distribution, communication, and management of the learning process);
- e-learning can take place without time limitations;
- e-learning makes it possible to reduce training costs;
- e-learning makes it possible to adapt the content of training to the individual needs of employees, unrestricted access and free use of teaching materials, and better control of training effectiveness.

E-learning is used primarily to develop the competence of employees through the use of various types of training. On the other hand, e-learning courses provide greater flexibility and adaptability in learning, so that the acquisition of specific knowledge can take place at a time and place individually selected by the employee. Multimedia and interactive educational materials are made available to employees, actively supporting the process of learning. This is especially important for organizations that base their transformation and further development on sustainable development. The training process with the use of an e-learning platform in a company is supposed to be one of the pillars of the knowledge and intellectual capital management system, providing at the same time the possibility...
of building the organization’s capital. The ‘Grupa Azoty’ Group is the largest Polish manufacturer of chemicals and fertilizer products. The group is a leader in the production of mineral fertilizers, polyamides, OXO alcohols, plasticizers, titanium white, and melamine. At the ‘Grupa Azoty’ Group, balanced development and responsible business conduct are strategic. They are supervised by the President of the Management Board and, in individual areas of responsibility, by members of the Management Board. Due to the fact that sustainable development concerns all areas of the ‘Grupa Azoty’ Group operations, employees from various departments and levels are also involved in this process.

The sustainability measures taken by the company are aimed at:

- ensuring high product quality;
- investing in research and searching for innovative technological solutions, extending the product value chain (chemicals and plastics);
- increase environmental and cost efficiency of processes (reduction of emissions, energy, and water consumption);
- ensuring the safety of production, transport, and storage;
- ensuring the safety of employees;
- development of the economical production.

Among the planned activities, supporting sustainable development, and precision agriculture, educating customers, improving customer relations, supporting the socio-economic development of cities and regions located in the locations of plants, sponsorship, community involvement and dialogue with the environment, and developing the intellectual capital of employees are considered strategic.

In the authors’ opinion, e-learning should be given a key role in these strategic activities. It functions at the junction of two areas: training, where key importance is attached to the content and the way it is delivered (including mechanisms involving participants), and technology. The ‘Grupa Azoty’ Group is developing a concept for the construction of an e-learning platform. The first stage is an analysis of the company’s existing organizational structure. The ‘Grupa Azoty’ Group has a traditional organizational structure, which is characterized by three levels of management:

- strategic level—company management, e.g., board directors;
- business-level—domains or business units, e.g., fertilizer production unit, energy business unit;
- functional level—functional units, e.g., human resource management, marketing, finance, research and innovation, investment, logistics, security.

The existing structure implies the need to take into account these three levels of management and the existing technology when building an e-learning platform. The proposed model of the e-learning platform for the ‘Grupa Azoty’ Group is presented in Figure 5.

The presented model consists of five coherent elements: a system of knowledge exchange in the field of sustainable development, a base of development problems, a base of development products, a recruitment system, a system of motivation, and a base of employee experience. This model not only provides a broad understanding of employee development, but it can also be a system for presenting, testing, and reporting knowledge. The recommended e-learning platform will allow for talent management, employee experience management, and communication tools for knowledge sharing. The construction and implementation of an e-learning platform is a change that must be properly communicated and carried out in the organization. This is a process that should be preceded by a detailed strategic analysis in several key areas: the business need arising from the problem, its solution, and analysis of the audience and stakeholders or partners (PESTEL analysis). This analysis also includes the determination of resources (organizational, human, and financial) and the risk that may be faced in the implemented project.
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- **Strategic Level**: Company management, e.g., board directors.
- **Business Level**: Domains or business units, e.g., fertilizer production unit, energy business unit.
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The existing structure implies the need to take into account these three levels of management and the existing technology when building an e-learning platform. The proposed model of the e-learning platform for the Grupa Azoty Group is presented in Figure 5.

**Figure 5.** The concept of an e-learning platform in the chemical company 'Grupa Azoty' Group. Source: own study.

The e-learning platform designed by the Grupa Azoty Group will allow for more effective personal development of employees within the organization and focus on what can be called the employer–employee experience, a new approach to integrated and holistic human resource management. In the opinion of Morgan, it consists of three elements: the culture of the organization; the environment, and technology [53]. The designed e-learning platform should improve task performance and achieve better results, thanks to increasing employees’ competencies. The implementation of a sustainable development strategy requires a radical change in the approach to human resources management. Employee experience and conscious and targeted investment in the process of their personal development will allow them to stabilize employment and reverse negative trends related to staff turnover. The use of e-learning in the organization will allow for the personalization of training as well as the full verification of trainees’ knowledge and progress. E-learning training reports can be used in the internal recruitment process and in planning further employment. Thanks to e-training, employees receive detailed knowledge about the implementation of the current strategy, new products, designed and implemented, innovative solutions and technologies, changes in the legal and social environment, etc. Apart from the typical perception of e-learning as saving time and money on training, it is important to motivate employees to continue learning and improving their competencies. The e-learning platform is equipped with a number of functionalities that allow easy and efficient access to knowledge. Of course, depending on the platform, these functionalities may vary—the most important thing is that they are aligned with the strategy and business model pursued by the organization. Then they enable the organization to:

- give an individual character to the employee learning process;
- focus on the most important competencies—creating procedures of knowledge distribution;
• increase the availability of resources; improve the communication; and motivation processes in the organization.

5. Discussion

The concept of sustainable development takes on particular importance in the era of the knowledge society and economy, since knowledge is the driving force behind the development of individuals and the economy as a whole. In this context, the concept of sustainability in the business environment is often treated as synonymous with behaviors associated with success and innovation, and often of a pro-environmental nature, in relation to various stakeholder groups, in the process of building systemic values. Systemic relationships with all actors of the sustainable value creation environment, built on the basis of knowledge diffusion, foster the implementation of the 3R principle (Reduce, Reuse, Recycle). This philosophy of thinking forms the basis of the new company’s strategy adopted for 2021–2030 [38]. An integral component of this strategy is the ‘Green Azoty Group’ project. The key objectives of this project are:

• raw material diversification in the ‘green direction’;
• acting on the basis of the concept of corporate social responsibility;
• implementation of technical solutions for green alternatives;
• activities aimed at decarbonization and the reduction of environmentally harmful emissions;
• development of R&D in a direction in line with the European Green Deal concept;
• implementation of ‘green hydrogen’ and ‘green ammonia’ projects.

The sector of chemical companies in Poland, as described in the article, has adopted an orientation toward activities harmonizing production with the aim of preserving the integrity of and protecting the ecosystem. Sustainable development and effective competition with other entities in the market depend on the possession of appropriate knowledge resources since they allow monitoring of the processes occurring in the environment of the organization and then identify the appropriate use of market opportunities. E-learning platforms are a tool that enables knowledge management in a company. Even in the basic model of implementation without linking to other HR systems, e-learning platforms can be used to manage the fully online learning process—performing educational functions, as well as functions related to the management of resources and users of the e-learning platform. E-learning platforms can be implemented in an organization in various types of models, which correspond to the adopted and implemented strategy. They facilitate the recognition of the structure and functioning of the organization, provide a platform for communication and cooperation within the company, foster the integration of employees, facilitate sharing and building the knowledge of the organization, and help in the process of adaptation of new employees. The success of the organization depends not only on an effective strategy but also on the IT technology that supports its implementation and adaptation to changes in the environment. E-learning platforms are important elements of organizations’ development processes. Organizations are beginning to feel the problem of information and knowledge dispersion. Hence, information solutions are now a necessity in the process of strategic decision-making in the fields of HR, human capital, and intellectual capital development.

6. Conclusions

Sustainable chemistry is a complex equation that must ensure the longevity of the human, animal, and plant species, taking into account issues related to access to various resources (coal, water, metals), energy access problems, global warming, the exponential growth of the human population, for which chemistry must enable peaceful development, the impact of the value chain on society and the environment, and the erosion of biodiversity, while remaining economically competitive to generate profits and do business. The key factor limiting broadly understood activities in the field of sustainable development is still little knowledge of the basic environmental concepts and processes taking place in the
environment. In this situation, it is necessary to develop a unified methodology for holistic environmental education.

In the authors’ opinion, e-learning platforms are the tool for developing this methodology. This methodology should arise from the way of thinking of Aldo Leopold [54], for whom nature should be treated as a whole, and not selected areas separated from one another. It should be a value in itself with the right to exist independently and to remain in its proper form, regardless of human needs. A person should fully respect this state, and, most importantly, respect nature in itself. It is not possible to rely solely on economic benefits, thus ignoring other elements of the environment that have no utility values and are necessary for the proper functioning of the entire environment.

Sustainable chemistry is a complex equation that must ensure the longevity of the human, animal, and plant species, taking into account issues related to access to various resources (coal, water, metals), energy access problems, global warming, the exponential growth of the human population, for which chemistry must enable peaceful development, the impact of the value chain on society and the environment, and the erosion of biodiversity, while remaining economically competitive to generate profits and do business.

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