



Co-funded by the
Erasmus+ Programme
of the European Union



CSR IN 4.0
CORPORATE SOCIAL RESPONSIBILITY
IN INDUSTRY 4.0

Andrey Zahariev
Angel Angelov
Petko Angelov
Margarita Mihaylova
Maja Ivanovic Djukic
Biljana Djordjevic
Vinko Lepojevic

Victor Meseguer Sánchez
José Luis Durán Sánchez
Adisa Ejubovic
Bogdan Iordache
Camila Molina
Elka Todorova
Slaveyko Slavkov

Corporate Social Responsibility in Industry 4.0

Project number: 2020-1-BG01-KA203-079025

„Adaptation of strategies for corporate social responsibility
to address the implications of the Industry 4.0“

Programme Erasmus+, Cooperation for innovation and the exchange of good
practices, Strategic Partnerships for Higher Education, Development of Innovation



Svishtov
2022

This publication is prepared within the scope of the project “Adaptation of strategies for corporate social responsibility to address the implications of the Industry 4.0” (CSRin4.0) No. 2020-1-BG01-KA203-079025, which has been co-financed by the Erasmus+ Programme of the Education, Audiovisual and Culture Executive Agency (EACEA) of the European Commission.

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

The publication is a collaborative work of the partner organizations to the project. The names of the organizations partnering in the project which contributed to this publication are as follows: D. A. Tsenov Academy of Economics – Bulgaria, National Federation of Employers of Disabled People – Bulgaria, ACEEU GmbH – Germany, Fundacion Universitaria San Antonio – Spain, Univerzitet u Nisu – Serbia.

(CC) This publication is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License.



©Andrey Zahariev, author, Svishtov, 2022
©Angel Angelov, author, Svishtov, 2022
©Petko Angelov, author, Svishtov, 2022
©Margarita Mihaylova, author, Svishtov, 2022
© Maja Ivanovic Djukic, author, Nish, 2022
©Biljana Djordjevic, author, Nish, 2022
©Vinko Lepojevic, author, Nish, 2022
©Victor Meseguer Sánchez, author, Murcia, 2022
©José Luis Durán Sánchez, Murcia, 2022
©Adisa Ejubovic, author, Munster, 2022
©Bogdan Iordache, author, Munster, 2022
©Camila Molina, author, Munster, 2022
©Elka Todorova, author, Sofia, 2022
©Slaveyko Slavkov, author, Sofia, 2022
©Center of Distance Learning at D. A. Tsenov Academy of Economics, 2022
©Tsenov Academic Publishing House, 2022

ISBN 978-954-23-2299-3

**Andrey Zahariev
Angel Angelov
Petko Angelov
Margarita Mihaylova
Maja Ivanovic Djukic
Biljana Djordjevic
Vinko Lepojevic
Victor Meseguer Sánchez
José Luis Durán Sánchez
Adisa Ejubovic
Bogdan Iordache
Camila Molina
Elka Todorova
Slaveyko Slavkov**

Corporate Social Responsibility in Industry 4.0

**Project number: 2020-1-BG01-KA203-079025
„Adaptation of strategies for corporate social responsibility
to address the implications of the Industry 4.0“**

**Tsenov Academic Publishing House
Svishtov, 2022**

This edition is intended for full-time, part-time and distance learning students in the courses offered by the D. A. Tsenov Academy of Economics qualification and master's degree programs. It is an integrated part of the educational process and should be used simultaneously with the Internet-based distance learning system of the D. A. Tsenov Academy of Economics.

All rights reserved. No part of this book may be reproduced, stored in a retrieval system, or transmitted by any means, including photocopying, without the written permission of the publisher. This publication is not intended for sale, and any sale or resale is considered by the publisher as copyright infringement. The participation of the authors and partner institutions in the writing of the textbook is indicated in the introduction and the main body of the textbook.

Corporate Social Responsibility in Industry 4.0 Textbook, first edition

Prof. Andrey Zahariev, PhD – author
Assoc. Prof. Angel Angelov, PhD – author
Head Assist. Prof. Petko Angelov, PhD – author
Sen. Lecturer Margarita Mihaylova, PhD – author
Prof. Maja Ivanovic-Djukic, PhD – author
Assoc. Prof. Vinko Lepojevic, PhD – author
Prof. Biljana Djordjevic, PhD – author
Prof. Victor Meseguer Sánchez, PhD – author
Assoc. Prof. José Luis Durán Sánchez, PhD – author
Adisa Ejubovic – author
Bogdan Iordache – author
Camila Molina – author
Elka Todorova – author
Slaveyko Slavkov – author
Prof. Stoyan Prodanov, PhD – reviewer
Assoc. Prof. Anelia Radulova, PhD – reviewer
Sen. Lecturer Margarita Mihaylova, PhD – proofreader

The textbook is part of the output from project number 2020-1-BG01-KA203-079025, “Adaptation of strategies for corporate social responsibility to address the implications of the Industry 4.0”, Programme Erasmus+, Cooperation for innovation and the exchange of good practices, Strategic Partnerships for Higher Education, Development of Innovation (The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein).

Content

Introduction	10
Part I. Theoretical developments of CSR in Industry 4.0.....	16
<i>Chapter 1. Evolution of corporate social responsibility (CSR).....</i>	<i>17</i>
<i>Introduction to the chapter</i>	<i>17</i>
<i>In this chapter you will acquire knowledge and skills how to.....</i>	<i>17</i>
<i>The chapter includes following sub-chapters</i>	<i>17</i>
1.1. <i>The nature of corporate social responsibility (CSR).....</i>	<i>18</i>
1.2. <i>Determining the elements of corporate social responsibility.....</i>	<i>18</i>
1.3. <i>The concept of corporate social responsibility adopted by the European Union.....</i>	<i>20</i>
<u>1.3.1. <i>Internal dimension of corporate social responsibility</i></u>	<u><i>21</i></u>
<u>1.3.2. <i>External dimension of corporate social responsibility.....</i></u>	<u><i>21</i></u>
1.4. <i>Ethics and socially responsible behaviour of the company towards stakeholders.....</i>	<i>22</i>
<u>1.4.1. <i>Ethical and responsible behaviour of the company towards employees.....</i></u>	<u><i>23</i></u>
<u>1.4.2. <i>Ethical and responsible behaviour of companies towards consumers</i></u>	<u><i>24</i></u>
<u>1.4.3. <i>Ethical and socially responsible behaviour of companies towards suppliers.....</i></u>	<u><i>27</i></u>
<u>1.4.4. <i>Socially responsible behaviour of the company towards the social community</i></u>	<u><i>27</i></u>
Chapter 2. Financial and managerial dimensions of CSR	30
<i>Introduction to the chapter</i>	<i>30</i>
<i>In this chapter you will acquire knowledge and skills how to.....</i>	<i>30</i>
<i>The chapter includes the following sub-chapters</i>	<i>30</i>
2.1. <i>The CSR model for human capital investments</i>	<i>31</i>
<u>2.1.1. <i>The optimality in human capital formation.....</i></u>	<u><i>31</i></u>



2.1.2. <i>Bipartite model for optimal distribution of the costs of human capital formation.....</i>	32
2.2. <i>The accounting issue for funding CSR initiatives.....</i>	34
2.2.1. <i>Methodological framework for CSR accounting.....</i>	34
2.2.2. <i>Opportunities for applying the principles of the concept of actual costs</i>	35
2.2.3. <i>Modification of the balance sheet to include CSR investments</i>	36
2.2.4. <i>CSR Pricing</i>	37
2.2.5. <i>CSR reporting analytical model</i>	38
2.3. <i>Budgeting framework for CSR implementation cost</i>	39
2.4. <i>Marketing approach for involvement of corporate financing and social initiatives support.....</i>	41
2.4.1. <i>Management framework for promoting corporate causes.....</i>	42
2.4.2. <i>CSR and cause-related marketing</i>	46
2.4.3. <i>Dimensions of socially responsible measures of the company - volunteering for the community, philanthropy, accepting social goals</i>	46
2.4.4. <i>Corporate social marketing – brand, trade name and label..</i>	49
2.5. <i>Standards for CSR.....</i>	50
2.5.1. <i>Measurement and proofing of CSR</i>	50
2.5.2. <i>International standards for CSR.....</i>	51
2.5.3. <i>CSR standards in HR management</i>	54
2.5.4. <i>Quality standards for CSR.....</i>	55
2.5.5. <i>Ecological standards for CSR</i>	58
2.5.6. <i>CSR standards for safety and health workplace conditions...</i>	60
Chapter 3. <i>Emerging social challenges with Industry 4.0</i>	62
<i>Introduction to the chapter</i>	62
<i>In this chapter you will acquire knowledge and skills how to.....</i>	62
<i>The chapter includes following sub-chapters</i>	62
3.1 <i>Vulnerability of systems</i>	63



3.1.1. <i>Providing employment for people with disabilities</i>	63
3.1.2. <i>Professional rehabilitation</i>	65
3.2. <i>European fiscal harmonization and taxation treatment of CSR initiatives</i>	65
3.2.1. <i>The VAT regulation of food donation</i>	65
3.2.2. <i>Operating model of the Bulgarian food bank</i>	66
3.3. <i>Profound changes in education and generation Z challenges</i>	69
3.3.1. <i>Key Features of Generation Z</i>	69
3.3.2. <i>Major Generation Z challenges for educational institutions</i>	70
3.4. <i>CSR in Industry 4.0 management: step-by-step approach</i>	71
3.5. <i>CSR and Covid-19 pandemic</i>	76
Chapter 4. Strategic approach to corporate social responsibility	84
<i>Introduction to the chapter</i>	84
<i>In this chapter you will acquire knowledge and skills how to</i>	84
<i>The chapter includes following sub-chapters</i>	84
4.1. <i>Advantages of strategic approach to corporate social responsibility</i>	85
4.2. <i>Formulation of corporate social responsibility strategy</i>	85
3.2.1. <i>Environmental analysis</i>	85
3.2.2. <i>Choice of area of company engagement in society</i>	86
3.2.3. <i>Formulation of vision, social goals and strategic guidelines</i>	87
4.3. <i>Implementation of corporate social responsibility strategy</i>	88
3.3.1. <i>Translating the CSR strategy into concrete activities and their execution</i>	88
3.3.2. <i>Communication of socially responsible initiatives</i>	89
3.3.2. <i>Monitoring and control of the execution of activities and collection of feedback</i>	90
Part II. Case studies of CSR in Industry 4.0	92
Chapter 5. National evidences for implementation of the concept of CSR	93
5.1. <i>Development of corporate social responsibility in Bulgaria</i>	93
3.1.1. <i>Institutional environment</i>	93



5.1.2. <i>Level of population awareness or importance of corporate social responsibility</i>	96
5.2. <i>Development of corporate social responsibility in Germany</i>	99
5.2.1 <i>Institutional Environment</i>	100
5.2.2. <i>Level of population awareness or importance of corporate social responsibility</i>	102
5.3. <i>Development of corporate social responsibility in Spain</i>	103
5.3.1. <i>Institutional environment</i>	104
5.3.2. <i>Level of population awareness or importance of Corporate Social Responsibility</i>	107
5.4. <i>Development of corporate social responsibility in Serbia</i>	110
5.4.1. <i>Institutional environment</i>	110
5.4.2. <i>Level of population awareness or importance of corporate social responsibility</i>	114
Chapter 6. <i>CSR and Industry 4.0 – evidence from Spain</i>	129
6.1. <i>Unemployment caused by the new technologies – case study from Spain</i>	129
6.2. <i>Social and legal aspects of CSR (outsourcing, corruption, human rights, patents) - case study from Spain</i>	131
Chapter 7. <i>CSR and Industry 4.0 – evidence from Germany</i>	138
7.1 <i>Emerging Information technologies coming with the Industry 4.0 (case study from Germany)</i>	138
7.1.1. <i>CSR and Internet of Things</i>	140
7.1.3. <i>CSR and Cloud Computing</i>	141
7.1.4. <i>CSR and Big data</i>	142
7.1.5. <i>CSR and 3D printing / Additive Manufacturing</i>	144
7.1.6. <i>CSR and Blockchain</i>	145
7.1.7. <i>CSR and Robotics</i>	147
7.1.8. <i>CSR and Virtual reality and Augmented reality</i>	148
7.2. <i>Emerging manufacturing technologies coming with the industry 4.0 (case study from Germany)</i>	149



<i>7.2.1. CSR and Robotics, unmanned systems, autonomous vehicles</i>	<i>150</i>
<i>.....</i>	<i>.....</i>
Chapter 8. CSR and Industry 4.0 – evidence from Bulgaria.....	153
8.1. CSR and social legitimacy (case study from Bulgaria).....	153
8.2. CSR and employment of people of disabilities (case study from Bulgaria).....	155
8.2.1. Labor market and CSR	155
8.2.2. Competitiveness and development of specialized enterprises	159
8.2.3. Public support for specialized enterprises and the employment of people with disabilities	160
8.4.4. Organization of public investment support for specialized enterprises.....	161
List of project team scientific publication on CSR in Industry 4.0.....	164



Introduction

The new realities of the Fourth Industrial Revolution have been unfolding much more rapidly and exponentially compared to the changes in the previous industrial revolutions. This sets new social expectations for socially responsible behaviour of business entities. The implications of Industry 4.0, such as changing the employment profile, replacing the workforce with robots, the emergence of new jobs and new skills demanded by the labour market, remote work and reduction in working hours, will impact significantly corporate social responsibility in terms of generating social results and improving productivity. In view of the above, the project focuses on the training of future managers and economists to acquire knowledge and skills important for maintaining the social goals of business in a new environment and new challenges. The new technologies, which are at the heart of the Fourth Industrial Revolution, bring unseen challenges to society, business and people's daily lives. These challenges require different approaches to address them, which have not been known and implemented so far.

The viable solutions cannot be found solely through government mechanisms for managing, stimulating and developing the economy: business must also be actively involved in change management. Therefore, the Industry 4.0 is in the mainstream of the scientific discussion as a new environment of doing business based on the responsibilities to the society welfare. Even more, the idea of the "Green Pact" and the plans of reduction of global warming must be accepted as a form of planetary social responsibility. That is why at the beginning of the third decade of the 21st century we are talking about a direct link between the concept of corporate social responsibility and the technological environment and driving forces of Industry 4.0. This is set as a problem area for research in this report. It pursues the main justification and the first phases of the practical implementation of the project "Adaptation of strategies for corporate social responsibility to address the implications of Industry 4.0" with reference number: 2020-1-BG01-KA203-079025, which involves four European countries and five partner institutions.

The history of the project is based on partners' meetings and agreements as follows:

- The main goal of the project is to develop a training course for higher education students in economics on the consequences of Industry 4.0 and the emerging challenges in the overall performance of enterprises and the social impact of business activities.
- The study material is focused on applying interdisciplinary links, further developing the understanding of the constituent elements of Industry 4.0 and filling existing gaps in preparing students for the main areas of benefits from Industry 4.0.

The project consortium includes "D. A. Tsenov" Academy of Economics (Svishtov, Bulgaria) as a project coordinator in partnership with the National Federation of Employers of Disabled People (Sofia, Bulgaria), the Accreditation Council for Entrepreneurial and Engaged Universities (Münster, Germany), the Catholic University of Murcia (Murcia, Spain) and the University of Nis (Nis, Serbia).



P1 TAE

D. A. Tsenov Academy of Economics (TAE) is a leading economics and business higher education institution in Bulgaria of over 80 years of history, 145 000 alumni and a well-established reputation in education, science and project management. It comprises 4 faculties, 19 departments, a Scientific Research Institute, 17 academic centres and auxiliary units. Three of the centres are focused on providing cultural, integration and socialisation services to foreign students – the Centre for International Affairs, the Euro-Arab Centre and the Euro-Asian Centre. Two of the centres are focused on providing educational services to local and foreign students and citizens – the Centre for distance learning and the Centre for Vocational Training.

TAE employs more than 190 professors, associate professors, assistant professors and lecturers, annually teaching more than 6,000 Bulgarian and foreign students in all three study cycles of higher education (bachelor's, master's and doctoral degrees). It offers full-time, part-time and distance-learning training in 17

bachelor's degree, 46 master's degree, and 16 doctoral degree programmes in Economics, Business and Administration, 21 of which are delivered in foreign language.

The areas of specific expertise of TAE are finance, accounting, audit, risk management, quality management and assurance, marketing, social care, insurance, tourism, commerce, social media, business informatics, entrepreneurship, international business, regional planning, public and business administration, business intelligence, e-learning, business analysis and forecasting. TAE actively participates as a partner of other European universities in various programmes of the EU, in projects of international research funds and inter-university educational networks and multinational higher education projects. TAE has been approved by the Lloyd's Register of Quality Assurance in accordance with the ISO standards for quality management.

TAE has a full Erasmus+ Charter, and it is entitled to use the statute of an 'Erasmus University'. In November 2017 TAE was awarded a quality mark for successful implementation of two of its Erasmus+ projects. International cooperation of TAE is undertaken using bilateral framework contracts and via inter-institutional agreements under Erasmus+ programme. D.A. Tsenov Academy of Economics has established 97 bilateral framework contracts and 129 inter-institutional agreements under Erasmus+ programme with HEIs from the Programme and Partner countries. TAE is a member of the European Universities Association (EUA), the Association of Economic Universities in South and Eastern Europe (ASECU), Black Sea and East Mediterranean Academic Network (BSEMAN), and the Confederation of Employers and Industrialists in Bulgaria (KRIB).

P2 NFEDP

The main purpose of the Federation is to help, encourage and coordinate the efforts of its members – 76 specialized enterprises for persons with disabilities, for improvement of the conditions and expansion of the supported employment for persons with disabilities and their inclusion in the society. The organisation aims to create possibilities for the persons with disabilities who are able to work, to use their qualities and abilities in the social and economic life.

The specialized enterprises contribute for the prevention of the long-term and permanent exclusion of the persons with disabilities, by focusing on the abilities of the persons and their social and labour responsibilities. They assist the process of social inclusion, solidarity and respect the qualities and abilities of the persons with disabilities. The efforts of the NFEPD are aiming towards: integration and social inclusion, cooperation and betterment of the conditions of work of the persons with disabilities; organisation of trainings and career development; raising awareness in

the community of the possibilities of the persons with disabilities and change of the attitudes.

P3 ACEEU

An affiliate of ENQA and a full-fledged member of INQAAHE, ACEEU is an international quality assurance body dedicated to advancing higher education by supporting universities in their transformation process towards becoming more entrepreneurial and engaged. With the ultimate goal of fostering the creation of greater social, economic and cultural impacts by universities, ACEEU accredits universities around the world in its two main accreditation programmes: Entrepreneurial University Accreditation and Engaged University Accreditation.

Having successfully accredited institutions in Europe, Latin America, Asia and Australia, with 20+ more institutions in the process, the Council is currently designing a departmental level accreditation, as well as a program level accreditation on 21st Century Skills.

Aiming to create a pathway towards recognised excellence in entrepreneurship and engagement for universities, ACEEU's activities are clustered around three main steps: (1) promoting, (2) evaluating, and (3) celebrating excellence.

- Promoting excellence (e.g. workshops and webinars; ACEEU Toolbox development with 100+ tools and Good Practice database with 300+ cases; studies to generate data serving for university development),
- Evaluating excellence (our accreditation programmes)
- Celebrating excellence (e.g. hosting the ACEEU's Triple E Awards on Entrepreneurship and Engagement Excellence in Higher Education; operating The Global League of Entrepreneurial Universities platform showcasing leading universities; disseminating information on entrepreneurial and engagement development in higher education).

Founded in 2016 as part of the University Industry Innovation Network (UIIN) in Amsterdam, the Netherlands, ACEEU spun out of UIIN in 2019 to form an independent organisation, and moved its headquarters to Muenster in Germany. ACEEU has 4 staff members and is backed by a 35+ person strong Council comprised of international experts.

P4 UCAM

UCAM is a private university with 20 years of history and more than 19.000 students that offers prominent European official graduations, Master programs, PhD programs and other prestigious titles. Its teaching method is based on a personalized attention with reduced students per classes and a personal tutor for each student. UCAM also offers a modern system of distance teaching.

UCAM is strongly linked with the work world through study plans adapted to market exigencies, obligatory internships in institutions and enterprises in every program and research programs in collaboration with big regional, national and multinational companies.

UCAM is an institution in dialogue with the modern world for the purposes of the improvement of human society as a whole. This spirit is made visible in personalized lectures with a reduced number of students and personal tutors for each student. UCAM shares its values through academic subjects, volunteering projects, meetings, congress and seminars.

P5 UNis

The higher education process started in Niš 45 years ago with three faculties: the Faculty of Engineering comprising four departments (Architecture, Civil Engineering, Electronic Engineering and Mechanical Engineering), the Faculty of Law and Economics, with two departments (Law and Economics) and the Faculty of Medicine with two departments (Medicine and Stomatology).

Today, the University of Niš has thirteen faculties: the Faculty of Civil Engineering and Architecture, the Faculty of Electronic Engineering, the Faculty of Mechanical Engineering, the Faculty of Medicine, the Faculty of Law, the Faculty of Economics, the Faculty of Science and Mathematics, the Faculty of Technology in Leskovac, the Teacher-Training Faculty in Vranje, the Faculty of Occupational Safety, the Faculty of Arts, the Faculty of Physical Culture, and the Faculty of Philosophy with 1450 teaching and 600 administrative and technical staff. Presently, at the University of Niš, 26500 students are attending undergraduate study programs, 700 students are enrolled in master's studies, while more than 70 candidates applied for the admission to the PhD degree.

The mission of the University of Niš is integration into the European higher education area in accordance with the highest quality standards of education, research and professional work. Its vision is to be a modern and recognizable Serbian and European university that is comparable to foreign higher education institutions of the highest rank in terms of quality of study programs, teaching activities, research and professional work.

By its elite role, which has by the nature of the academic structure already been assigned to it, the University of Niš represents the most precious connection with the world – with the global science, unique educational space of Europe or the global art trends and developments. The University represents a connection with young generations, academics around the world, who are the future and the new energy of every society. Students guided by youthful ambitions, visions and ideals



and professors who possess significant knowledge, experience and who work patiently, give the University a strong driving force and creative power.

The Faculty of Economics in Niš is an institution of higher education within the University of Niš which by performing its activities combines educational, scientific and research work as a part of a unique process of higher education. The Faculty was founded by the Alteration and Supplement Act of the University Law. The founder of the Faculty of Economics in Niš is the Republic of Serbia.

The work plan of the project is based on proper distribution of tasks between partners to achieve synergy and effective results.

Phase	Activities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
		X	XI	XII	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	I	II	III	IV	V	VI	VII	VIII	IX	
IO 1	O1/A1 Desk review of available methodology																									
	O1/A2 Creation of question sets																									
	O1/A3 Interviews with lecturers																									
	O1/A4 Interviews with students																									
	O1/A5 Interviews with business experts																									
	O1/A6 Summarizing the data																									
	O1/A7 Development of competence framework																									
	O1/A8 Development of the curriculum																									
	O1/A9 Adaptation of national versions																									
	O1/A10 Consultation and feedback from the NAB members																									
IO 2	O2/A1 Desk review of available materials																									
	O2/A2 Creation of course structure																									
	O2/A3 Selection of training sections																									
	O2/A4 Finalizing of the course structure																									
	O2/A5 Development of the course content in EN																									
	O2/A6 Adaptation of national versions																									
	O2/A7 Consultation and gathering of feedback from the NAB members																									
	O2/A8 Translation of the training units																									
	O2/A9 Pilot implementation with trainers and trainees																									
	O2/A10 Gathering feedback and optimization																									
IO 3	O3/A1 Review and selection of support materials																									
	O3/A2 Development of the lesson sections																									
	O3/A3 Compilation of lesson frames																									
	O3/A4 Selection of appropriate case examples																									
	O3/A5 Creation of subject related models on CSR																									
	O3/A6 Creation of the manual																									
	O3/A7 Gathering feedback																									
	O3/A8 Testing, adaptation and finalisation																									
	O3/A9 Production of scenario set for the interactive elements																									
	O3/A10 Creation of support interactive elements																									
	O3/A11 Launching of Beta version of the platform																									
	O3/A12 Testing of functionality and launching of Alpha version																									
TPMs	Kick-off meeting																									
	Second TPM																									
	Third TPM																									
	Fourth TPM																									
PMI	A1. Appointment of national project leaders																									
	A2. Preparation of national contracts, completion of project work request																									
	A3. Development of project corporate identity																									
	A4. Launching of the website of the project																									
	A5. Establishing of National Advisory Groups (3 people per country)																									
	A6. Launching of an internal platform where the partners will communicate																									
	A7. Sharing of information for resources of dissemination and evaluation activities																									
	A8. Organization of regular accounting services																									
	A9. Organization of payment schedules and execution of bank transfers to project partners																									
	A10. Review of the distribution of funds, starting of the internal communication project (CAWI) sheet																									
	A11. Choice of intermediate and other project meetings and strategy meeting convene																									
	A12. Holding of consultations on the financial implementation (on 3-monthly basis)																									
	A13. Organization of meetings (one 2 per year) with all associate partners and NAB members																									
	A14. Production of electronic bulletins																									
	A15. Production of media releases on 3 months basis																									
	A16. Contacts with stakeholders and realization of project presentation (every 2 months)																									
	A17. Quality assurance activities and post-meeting bilateral evaluation																									
	A18. Gathering feedback from external experts																									
A19. Organization of dissemination and evaluation face-to-face events																										
A20. Preparation of reports to the NAB																										



Part I. Theoretical developments of CSR in Industry 4.0

Chapter 1. Evolution of corporate social responsibility (CSR)

*University of Nish, Nish, Republic of Serbia
Economic Faculty*

Chapter 2. Financial and managerial dimensions of CSR

*D. A. Tsenov Academy of Economics, Svishtov, Bulgaria
Faculty of Finance*

Chapter 3. Emerging social challenges with Industry 4.0

*D. A. Tsenov Academy of Economics, Svishtov, Bulgaria
Faculty of Finance*

National Federation of Employers of Disabled People, Sofia, Bulgaria

Chapter 4. Strategic approach to corporate social responsibility

*University of Nish, Nish, Republic of Serbia
Economic Faculty*

Chapter 1. Evolution of corporate social responsibility (CSR)

Introduction to the chapter

The chapter “Evolution of corporate social responsibility (CSR)” presents the theoretical foundation of the concept of CSR. This chapter also deals with the nature of CSR, its elements and dimensions adopted by the European Union. Special attention is placed on the ethics and socially responsible behaviour of the company towards stakeholders. Firstly, the nature of CSR is defined. In that regard it is said that CSR means that companies on a voluntary basis integrate social and environmental principles into their business and behave ethically towards all stakeholders. When it is about the elements of this concept, few approaches are presented. One of them is the approach developed by Archie Carroll. According to this author, there are four different groups of obligations of the companies (economical, legitimate, moral and philanthropic) which are explained. Another, highly accepted approach, which is discussed in the chapter, is known as the “triple bottom line”. According to this concept, company's obligations are threefold: "profit", “people” and “planet”. The chapter, further, deals with the concept of CSR adopted by the European Union. According to the EU Commission CSR has internal and external dimensions, which are described in the chapter. The focus, however, is placed on the ethics and socially responsible behaviour of the company towards its stakeholders. In that regard, some of the most common unethical activities of companies towards its stakeholders are analysed, as well as possible measures to encourage socially responsible behaviour towards stakeholders are proposed.

In this chapter you will acquire knowledge and skills how to

- identify the key elements of CSR;
- demonstrate the socially responsible behaviour towards employees;
- apply the concept of social responsibly marketing in the behaviour towards consumers;
- identify the most common forms of unethical behaviour of companies towards suppliers;
- recognize the common unethical practices of companies towards the social community.

The chapter includes following sub-chapters

1. The nature of corporate social responsibility (CSR)
2. Determining the elements of corporate social responsibility
3. The concept of corporate social responsibility adopted by the European Union
4. Ethics and socially responsible behaviour of the company towards stakeholders

1.1. The nature of corporate social responsibility (CSR)

CSR is a managerial approach which implies that the company is managed in a way that, except of achieving primary economic goals (making a profit, earning money), will cause a positive impact of the company on work, social and natural environment (Ivanović-Đukić, 2011). This means that companies on a voluntary basis integrate social and environmental principles into their business and behave ethically towards all stakeholders (Maqbool, Zameer, 2018).

1.2. Determining the elements of corporate social responsibility

Since this is a relatively new concept, the elements are not precisely determined, i.e., the obligations that the company needs to fulfil in order to be considered responsible towards the society (Ivanović-Djukić, Simić, 2014). Archie Carroll developed one of very frequently cited approaches. He lists four different groups of obligations, which he presents as a pyramid, therefore a **pyramid of social responsibility** is created (Carroll, Shabana, 2010) (See Figure 1.1).

Figure 1.1: Pyramid of corporate social responsibility



Source: Carroll A. (1991) The Pyramid of Corporate Social Responsibility: Toward the Moral Management of Organisational Stakeholders. *Business Horizons*, 4 (3):73-85.

The economic responsibilities of the company are to produce products and services sold at fair prices, to pay state taxes, give salaries to employees, dividends to shareholders and similar. The legal responsibilities of the company mean respect of the laws and legal regulations. The ethical responsibilities of the company are to behave ethically towards all interest groups with which it interacts. The company's philanthropic responsibilities are to voluntarily help vulnerable social groups and get involved in solving social and environmental problems of the social community (Carroll A.,1991).

Another, highly accepted approach to defining social responsibility, known as the “**triple bottom line**”, belongs to John Elkington (Figure 1.2).

Figure 1.2: “Triple bottom line” concept of corporate social responsibility



Source: Elkington J. (1998) *Cannibals with forks*. Gabriola Island, Canada: New Society Publishers, p. 16.

According to this concept, the company's obligations are threefold:

- "profit" - the obligation of the company is to achieve economic goals and generate profit as the ultimate economic goal,
- "people" - the obligation of the company is to conduct fair and useful business practices towards "people" (employees and the community in which it operates),

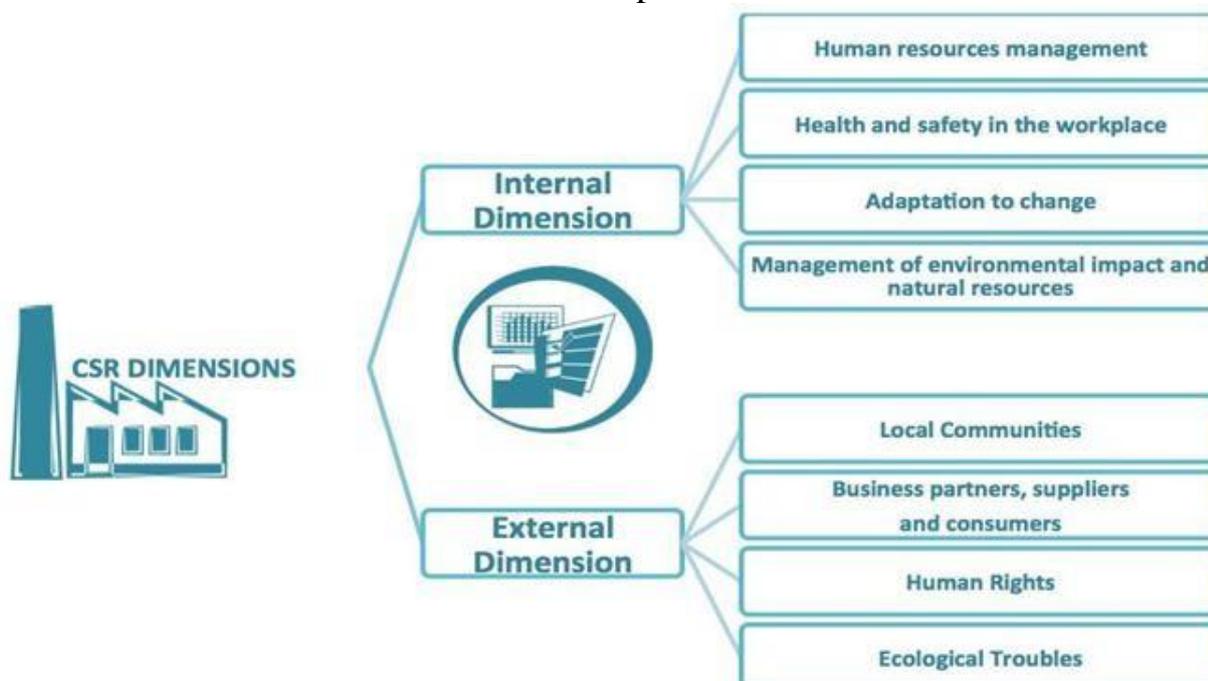
- “planet” - the obligation of the company is to implement sustainable environmental practices, so as to strive to contribute to nature conservation as much as possible or to minimize the negative impact on the environment.

In addition to these, there are a large number of very different approaches to corporate social responsibility. The concept developed and adopted by the European Union will be accepted here.

1.3. The concept of corporate social responsibility adopted by the European Union

The EU Commission defines CSR as a set of company activities aimed to fulfil legal obligations defined by law and contracts, but also activities by which the company fulfils obligations that do not arise from the formal legal framework, such as investing in human capital development, environmental protection and improving relations with all stakeholders. According to this concept, corporate social responsibility has an internal and external dimension (Commission of the EU, 2001, p.6).

Figure 1.3: Elements and dimensions of social responsibility according to the EU concept



Source: Commission of the European Communities (2001) Green Paper, Promoting a European framework for Corporate Social Responsibility, p. 6.

1.3.1. Internal dimension of corporate social responsibility

It refers to the voluntary introduction of measures the implementation of which will lead to: a higher ethics degree of the company's behaviour towards employees and more rational use of resources. It includes the following activities (Commission of the EU, 2001, p. 6):

Investments in human resources include: attracting and retaining talented workers (establishing programs for professional development and lifelong learning of employees), non-discrimination, implementing policies that should ensure a balance between business and private life of employees, application of a code of ethics, respect for diversity, health care and safety for workers in workplace (number of working hours and allowed overtime work proposition, provision of normal working conditions, provision of protective uniforms and equipment in places where necessary, etc.), giving employees the right to join various associations, protection of human rights of employees when performing work in the company, etc.

Adapting to change means that in a dynamic environment, which implies constant changes in the company, employees and other stakeholders have their rights. This means when restructuring a company, interests of all groups affected by the process should be taken into account, especially interests of workers, because restructuring is mainly accompanied by layoffs. Restructuring companies should help develop entrepreneurship and self-employment of laid-off workers.

Rational use of resources and energy implies the implementation of measures that will enable the company to perform its business activities to ensure the preservation of non-renewable natural resources for future generations and protect the natural environment. Some of the measures recommended by the EU are: use of healthier technologies in business, reduction of harmful substances, waste recycling, increase of energy efficiency of companies, use of renewable energy sources, reduction of waste, its collection and recycling, reduction of water consumption and other non-renewable resources.

1.3.2. External dimension of corporate social responsibility

It refers to measures the application of which should increase the ethics of the company's behaviour towards external stakeholders (customers, suppliers, competition, the state, strategic partners) and contribute to the development of the local community. Some of the key segments of the external dimension of corporate social responsibility are (European Commission, 2011):

Local community development means the introduction of measures in the company that will lead to problem reduction or prevention present in the local community, and voluntary investment of the company resources to increase the usefulness of the community. Some of the measures proposed by the EU are: increasing fiscal discipline and paying taxes, fighting corruption, fighting against the use of child labour, honesty in trade and marketing, support in solving social and ethical problems in society, investing in education and scholarships for young people, product adaptation and services for people with disabilities, participation in campaigns for public wealth, health, sports, development of local infrastructure, volunteering for the community, development among sectoral partnerships in order to improve local development, etc. (Brammer, Jackson, Matten, 2012).

Improving relationships with business partners means respecting contractual obligations and ethical behaviour towards all external stakeholders. Some of the possible measures are: offering only safe and harmless products, adequate product description, ethical pricing, ethical and responsible advertising and marketing strategies, consumer protection, ban on child employment, support for supply chain development, socially responsible investment, avoiding conflicts of interest, corruption and unethical business practices, etc. (O’Riordan, Fairbrass, 2014).

Respect for human rights implies the implementation of measures that should ensure normal behaviour of all social groups with which the company interacts. These are primarily measures related to respect for the rights of employees, such as: respect for human dignity, the right to live, the right to personal integrity, the prohibition of torture and inhuman punishment, freedom of gathering and association, etc.

Environmental protection at global level implies the active participation of companies in environmental protection initiatives implemented by local authorities, non-governmental organisations and associations.

1.4. Ethics and socially responsible behaviour of the company towards stakeholders

The stakeholders of a company are individuals or groups that are interested in its business and can have a certain influence on it: owners, employees, consumers, suppliers, competition, banks, media, associations, community, state, etc. (Freeman, et al. 2010). These can be individuals, organisations and institutions.

Figure 1.4: Stakeholder groups of enterprises



Source: Freeman E., Wicks A. & Parmar B. (2004) Stakeholder Theory and The Corporate Objective Revisited. *Journal of Behavioural Economics*, 15 (3): 364-369.

1.4.1. Ethical and responsible behaviour of the company towards employees

Employees are persons of socially recognized physical, psychosocial, professional-educational and social characteristics, assigned to managerial or executive positions, capable to work on tasks and to achieve goals, which entitles them to certain compensation and various privileges (Simić, Ivanovic-Đukić, 2013). The company's relations with employees are regulated by a large number of laws. However, there are relations that are not regulated by legal regulations and leave the possibility of showing unethical behaviour of companies towards employees and create a large number of problems (Crane, Matten, 2019). Some of the most

common unethical activities of companies towards employees are shown. They are: discrimination, favourism, harassment, sexual harassment and mobbing.

Discrimination implies unequal treatment, exclusion, restriction, abuse or negative discrimination of certain employees (based on: gender, age, race / ethnic / nationality, sexual orientation, etc.) (Official Journal C306, 2017). **Favourism** is an unethical practice of more favourable treatment to individuals or groups in employment, reward or promotion, based on their attitudes, political affiliation, origin or some other subjective reasons, without taking into account their qualities such as knowledge, skills and experience (Ivanović-Djukić, et al 2107). It is most often manifested as **nepotism** (gives privileged treatment to family members or relatives) or **chronyism** (favouring friends, political like-minded people, etc.) (Büte, 2011). Harassment causes fear or a hostile, degrading or offensive environment. **Sexual harassment** at work exists when an employee, female or male, experiences repeated, unwanted sexual attention or when working conditions are hostile or sexually threatening. **Mobbing** implies any psychological or verbal abuse in the workplace, with the intention of devaluing the work of an individual or a group (Ivanović-Djukić, Simić, 2014).

Possible measures to encourage socially responsible behaviour towards employees are: shaping a stimulating system of compensation, encouraging diversity, improving working conditions, professional development and staff development (Crane, Matten, 2019).

By designing a stimulating system, compensation means combining salaries and rewards to motivate employees and permanently bond with the company (Đorđević, Ivanović-Đukić, 2010). **Respect for diversity** means providing opportunities for all groups of employees to meet their specific needs and eliminate any form of discrimination based on gender, race, ethnicity, or any other that is not grounded on the achieved results (Post, Lawrence, Weber, 2002). **Improving of work conditions** implies constant aspiration toward health improvement and employees' safety, as well work conditions upgrading. To be prepared for expected changes, it is necessary to work on their **education and development of new skills** adapted to Industry 4.0.

1.4.2. Ethical and responsible behaviour of companies towards consumers

Consumers are all individuals and organisations that are offered products and services of the company and on which its survival and success directly depend. In order to make their product superior to the competition, companies very often use various unethical practices related to: production policy, communication with consumers, pricing, payment, etc.

In production, there is a problem related to the use of unacceptable ingredients and technology, malversation in product packaging and labelling. Businesses may implicitly apply unethical practices that reduce product quality and safety. For example, they can use ingredients that are harmful for the consumer health, such as the use of genetically modified foods in the food industry, the use of substances that are harmful to health in the production of dishes, the use of hormones for rapid growth of animals. puberty in children, etc. In the pharmaceutical industry, a very common unethical practice is to test new products on animals or even humans, which can be fatal. For more complex technical products, unethical practice may be the installation of lower quality parts that lead to defects immediately after the expiration of the warranty period (Held, Germelmann, 2014). When packing it is typically to reduce the product weight which stays in the same package size, with the same visual identity but hardly visible changed weights. Also, there is the same product in larger packaging, which creates the impression that the content of the product is higher (Underwood, Klein, 2002). When labelling a product, one often encounters a declaration written in extremely small letters that the average consumer is unable to read. A similar situation with small print can occur in some contracts, usually when stating unfavourable clauses for the customer of these services (Darke, Ashworth, Ritchie, 2008).

Communication with consumers is an area where a huge number of unethical practices occur. Subject to key criticisms related to unethical propaganda are (Darke, Ashworth, Main, 2010):

- deception, when erroneous and false information about the characteristics of the product is presented (e.g., in case of weight loss products, baldness treatment products, etc.),
- fraud, when unproven information about the properties of a product is presented, based on tests that no one but the company can verify (e.g. in case of public announcement of a drug that promises a fast recovery from a disease, without the possibility of proving this fact or situations when side effects of the drug are not mentioned, it is recommended to consult a doctor or pharmacist),
- deception by using false claims or half-truths about competing products,
- manipulation of children, bad influence on their behaviour, because children are very susceptible to advertising messages (e.g. interesting packaging for a low quality product), falsely emphasizing of a product offered to people who take care of a healthy lifestyle, without mentioning of ingredients that are essential for a healthy diet (without sugar, fat, etc.), falsely stating unrealistically low prices (sales) for a product when it is not for sale or only

one or a small number of items are offered, in order to attract consumers to enter the sales facility.

When **forming prices**, it is a very common practice to charge extremely high margins on the cost price, with result of the selling price which is unrealistically high for low quality products. A similar thing happens when unrealistic price increases in emergency situations, when the demand for a product is extremely high. False price reductions are also a common form of unethical behaviour, with aim to increase product purchases. Some of the examples are an increase in the price of the product and then a decrease with the new price, whereby seemingly reduced price is equal to the regular one. Manipulations can also be present in forming the prices of specific packages, such as special packaging intended for children or the price of large packages. These and other unethical practices in price formation create an unrealistic idea of the relationship between price and quality among consumers and influence the decision to buy (Reich, Reich, 2006).

Payment, especially electronically, allows companies to collect and use a huge amount of personal data about their consumers. The companies then sell this information to marketing agencies, which create advertising campaigns and violate consumer privacy by sending a huge number of promotional materials. An even more serious problem of e-business is the possibility of misuse of important consumer information, such as credit card codes or driver's license data.

These described unethical practices have influence on negative consumer attitudes, while the creation of positive attitudes can be influenced by socially responsible marketing, which includes a number of measures such as: introduction of quality standards in production and packaging, introduction of consumer sector, honest and fair behaviour in pricing and communication with consumers, protection of consumer privacy in the virtual space (Crane, Matten, 2019).

As a proof of high quality and compliance with international or national **standards**, companies receive quality certificates in accordance with labels entered on products, which give consumers a guarantee that the product meets certain requirements. Some of the most common labels are: ISO 9001, ISO 14001, OHSAS 18001 (Occupational Health and Safety Assessment Series), ISO 22000, IFS, CE (European Conformity) HACCP. Many large corporations form a **consumer sector** whose task is to solve problems of dissatisfied consumers or to decide to withdraw the product from sale. **Fair communication** with consumers implies legal forms of communication with accurate and honest messages that give consumers real information about the characteristics of products / services. **Protecting consumer privacy** means: respecting privacy laws, providing warnings to consumers to protect themselves, developing mechanisms that allow consumers to control

information about themselves, providing opportunities to use privacy software.

1.4.3. Ethical and socially responsible behaviour of companies towards suppliers

Suppliers are individuals and organisations that provide companies with resources, equipment, energy and other elements necessary for the internal processes in the organisation. The most common forms of unethical behaviour of companies towards suppliers are: bribes and corruption in supply, unequal treatment and discrimination of suppliers, the use of ambiguous tactics in negotiations, etc. (Crane, Matten, 2019).

The presence of corruption among customers can create a serious problem for suppliers. Getting unallowed gifts from employees in purchasing services, can position a buyer into unfair competition because the selection of recipients is not made on the basis of realistic competitive criteria, but on the basis of the value of gifts or the realization of workers personal interests (Crane, Matten, 2019).

The use of **ambiguous negotiation tactics** (use of false statements, failure to present important facts, etc.) can lead to signing of contracts that are unfavourable to suppliers (Athinks, 2006).

To meet the requirements of suppliers and attract those who provide a competitive advantage, customer companies implement various socially responsible programs and measures on achieving compliance with contractual obligations and ethical behaviour that can be regulated by developing and implementing a code of ethics and special code of conduct in procurement, which give instructions to employees in the procurement services on how to behave in negotiations, when receiving gifts, etc. (Stefanović, Ivanović-Đukić, 2012).

Companies with a large number of suppliers in the country and abroad try to have a positive impact on the business of suppliers, subcontractors and other members of the supply chain by providing the necessary information to suppliers, educating suppliers about development of management systems, rewarding the best suppliers in the supply chain, etc.

1.4.4. Socially responsible behaviour of the company towards the social community

The social community represents a broad group of people and groups in a particular geographical area who share a common tradition, values, institutions, collective activities, and interests (Post, Lawrence, Weber 2002).

There are numerous segments in which unethical behaviour of companies can lead to deepening and spreading of problems in society. The most common unethical practices of companies towards the social community are: lobbying, political donations of corporations, encouraging corruption (Crane, Matten, 2019).

Lobbying involves communication of corporations with government officials or trying to persuade them to support the interests of organisations in creating certain laws, policies or regulations (Post, Lawrence, Weber, 2002). In that case, regulations are being created to protect the interests of individual corporations that provide financial support to politicians, to the detriment of the community. Corporations can make certain donations to **finance the campaigns of political candidates**, with multiple conflicts of interest. Politicians fight for the interests of corporations that have given them donations instead of fighting for the interests of the community (Jones, 2002).

In extreme cases, bribery of civil servants by company representatives can occur, which encourages the spread of corruption and the creation of numerous social problems in the community. **Corruption** is the abuse of a position, power or procedure for the purpose of pursuing certain personal or group interests. It can take the form of bribes and similar, simpler modalities of corrupt rent-seeking, through political financing arrangements, staff recruitment or loyal partners to provide institutional and political support, with shadow economy, tax evasion, money laundering and even international crime. and terrorism (Ivanović-Đukić et al. 2019).

To build a good reputation in society a company must avoid unethical practices and implement CSR measures, such as: volunteering for the social community, corporate philanthropy, social marketing (Crane, Matten, 2019).

Volunteering for the community means that companies invest the time, skills and experience of their employees in solving specific problems in their local communities. In other words, employees are involved in volunteer activities that they can perform after or during working hours.

Corporate philanthropy means direct, non-refundable giving of money, products / services and dedication of the time of the company's employees in support of a humanitarian action or in order to achieve a certain social goal. It is mainly realized through: a) one-time monetary donations to help a vulnerable social group, b) grants to support a certain event that contributes to improving the quality of life of the community, c) giving products to vulnerable social groups or institutions organised by these groups for help d) providing free company services to social groups to prevent the occurrence of a social or health problem in the community,



e) providing expertise, f) enabling the use of company space / distribution channels, providing equipment for use.

Social marketing involves the use of commercial marketing techniques for the analysis, planning and implementation of programs intended to influence the change of behaviour of a problematic social group (drug addicts, smokers, burglars, etc.) (Kotler, Lee, 2007).

Chapter 2. Financial and managerial dimensions of CSR

Introduction to the chapter

The chapter "Financial and managerial dimensions of CSR" is focused on five main problem areas. The first problem is clarifying the relationship of CSR with human capital theory. The basic understanding is to identify CSR as a private good with externalities. This private good is created through training and regulations that have a beneficial effect on all economic agents – households, firms and government. The accounting approach (the second problem) for clarifying the principles for accounting treatment of CSR initiatives inevitably affects the problem of the fiscal treatment of costs for CSR company projects. The principle of actual costs is the guide for methodical solution of the problem. The third analytical problem in this chapter is the budget framework for the implementation of CSR projects. Two important stages of the budget process are justified - the planning stage and the control stage. The marketing approach of incorporating corporate funding to support social initiatives forms the market perspective on the problem. The issues of promoting corporate causes, cause-related marketing, volunteering for the community, philanthropy, accepting social goals, brand, trade name and label are consistently considered. The final fifth issue for clarification in this chapter is CSR standards. Their evolution and diversity only confirm the thesis about the value of the concept of CSR in an environment of technological problems that have reached their level of Industry 4.0.

In this chapter you will acquire knowledge and skills how to

- identify the key financial aspects of CSR;
- demonstrate the CSR as a private good with externalities distributed mainly to the society;
- apply the concept of actual costs as a basis of CSR accounting;
- recognize the main aspects of corporate social marketing;
- clarify the standards of CSR from its international origin and functional application.

The chapter includes the following sub-chapters

1. The CSR model for human capital investments
2. The accounting issue for funding CSR initiatives
3. Budgeting framework for CSR implementation cost
4. Marketing approach for involvement of corporate financing and social initiatives support
5. Standards for CSR

2.1. The CSR model for human capital investments

Human capital theory is an area of knowledge, characterised by standing relevance and permanent scientific interest. Despite the extensive efforts of researchers focused on financial and physical capital, the role of man as an entrepreneur, investor, employer and / or employee is always present in the background. Direct result of investment processes in the economy is not only the creation of the national product, but first and foremost the formation of a set of factors for production; the combination of which generates a cost-effective manufacturing process. Recent studies include not only the classic ones: capital, labour and land but also others, one of the most decisive of which is human capital. Therefore, the primary objective of the processes of formation of human capital nationwide is to achieve an improvement in the quality of the total population, which improvement, in monetary terms, shall lead to increased production capacity of society and of the economy as a whole.

When we study the processes of formation of human capital, however, we note that the related research associates it with five main groups of activities:

- health-care and health services;
- "on-the-job" training;
- formal schooling;
- initial training and further training, outside the company ("off-the-job" training);
- the migration of individuals and their families in search of improved work alternatives.

In examining the nature and specifics of the process of human capital formation it becomes clear that there are a range of benefits (cash and non-cash) that form the return on investment in human capital formation through education. On the other hand, to generate these benefits we need to make expenditure. In addition, it should be born in mind that any analysis of return on investment in human capital formation takes into account the national specifics of distribution between individuals and society of not only flows of cash benefits but also of flows of cash costs. The CSR approach needs organising the process based on the principle of fair distribution of costs and benefits.

2.1.1. The optimality in human capital formation

On this basis we can conclude that, in terms of human capital, a key problem to be considered is the question of finding the optimality in financing investments in

human capital formation. Optimality itself can be analysed not only in quantity but in quality:

- In the first direction as a starting point of analysis there is the study of the characteristics of education as a specific type of good. On this basis, we can later develop and apply a theoretical model for an optimal distribution of the costs necessary to generate the basic "product" of human capital investment through education – the human capital. In addition, the state, the trends and the prospects within a national education system may be subjected to quantitative analysis. This is a study of indicators measuring: the number of students trained for the period, the distribution of students by profiles and others.
- The second direction (qualitative) includes two additional types of issues:
 - ⇒ The first is related to the quality and effectiveness of the education system itself and the related institutions. An issue noteworthy for study here is the provision of students with teachers (total number, by profiles and academic titles);
 - ⇒ The second issue is directly related to the number of risks of investments in human capital formation. The point here is to what extent the education system focuses on developing such knowledge and skills that are really demanded and required by employers. Thus, if there is a gap between actual needs and available product, employers will be forced to expend additional resources for training of newly recruited workforce.

In the first direction, examining the characteristics of human capital investment through education as a specific type of good, it is necessary to consider that: First, according to classical works in the mainstream economics and public finance (see, e.g.: Brown and Jackson (1992)), human capital investment through education is defined as *a mixed good of uncompetitive nature* that may not be used by some members of the society. This is because, regardless of who finances the investment in human capital formation, there is a possibility for the benefits of these investments to be cashed by persons other than the very source of investment. On the other hand, as the main carrier and the owner of this 'good' is the individual, then education, in a more precise plan, must be perceived as *a private good, generating external effects*.

Second, the definition of human capital investment through education as a private good, generating external effects, is a starting point to building *a model for optimal distribution of the costs of investment in human capital formation* through the fair distribution amongst all parties that collect benefits.

2.1.2. Bipartite model for optimal distribution of the costs of human capital formation

2.2. The accounting issue for funding CSR initiatives

2.2.1. Methodological framework for CSR accounting

The importance of CSR principle as a factor in the success of the company has become the focus of modern theories of corporate governance and development. Moreover, too often the company's ability to generate profit is a function not only of the volume of investment, but also of the abilities, the competence and motivated efforts of human resources and its public acceptance as an entity with certain publicly responsible behaviour. On the other hand, conventional accounting does not provide ways of reporting the individual as a factor in the company's success although the usefulness of this factor in some cases not only equals, but surpasses that of financial capital. In other words, there is a situation in which, on the one side, investments in people generate returns comparable to, or exceeding that of investments in real or financial assets, while, on the other hand, traditional accounting methods do not allow the reporting of an individual as a resource generating a significant contribution to shareholder wealth. This *necessitates the development and implementation of a national methodology to include these resources in the company balance sheet* in accordance with the understanding that it reflects the current status of all company assets and liabilities. As it has already been noted, the perception of expenses for attraction, recruitment, selection, staffing, adaptation, socialization, training and qualifications as the cost of human resources of an investment nature. plays an important role in the financial reporting of human resources in the company. Their comparison, and especially their special-purpose designation, determine the necessity of their grouping, differentiation and treatment namely as investment costs, individual items of budgeting and respectively of reporting in the company. Besides investment costs, other groups of expenses associated with CSR are also differentiated in the company.

A specific of these expenses is that, since their size and the time they are incurred are associated with the current period, they are reported in the profit and loss statement of the company. On the other hand, the investment expenses for the company suggest the time horizon of an investment exceeding the traditional one-year reporting period. In other words, since we expect investments to generate benefits (expressed as a private good with externalities), the collection of which covers a period of, for example, 3-5 years, then, in that case, the period of fiscal depreciation of our investments will be commensurate.

From the methods presented for the inclusion of the CSR investments in the company balance sheet and in view of their advantages and drawbacks, described in the classical works on corporate accounting, as a basic concept for the development of a methodology for the inclusion of such a good in the balance of

the company, we can recommend the *concept of actual costs of CSR*.

2.2.2. Opportunities for applying the principles of the concept of actual costs

The main advantage of the concept of actual costs is its objectivity, since it facilitates comparison and comparability between levels of investment in human capital, based on a methodology consistent with the treatment of the other assets in the company via accounting. On the other hand, according to the principle of documentary justification of economic transactions, each financial transaction is based on a document. Because part of the investment in CSR and human capital (e.g., the socialization process) can hardly be reported using traditional valuation methods, we will leave these types of costs outside the focus of this study. In other words, regarding the features of the methodology of actual costs, it is necessary to take into consideration that it is impossible to account for part of the investment costs for CSR and human capital investments using the traditional methods of reporting, because the units that the regulatory accounting system uses (material, labour and value) in this case are inapplicable.

But there is another group of costs which allow the application of the principles of the concept of actual costs. Here we include:

- the costs of CSR programs;
- training costs (the fee for the respective training course) and similar.

Because these investment costs are recorded when they are incurred, but their benefit is collected at a subsequent stage, it would be suitable to be grouped in a separate account. For this purpose, some opportunities are offered via the account "Prepaid expenses". An analytical sub-account of this account can be created: "CSR expenses applicable to future periods." This account can be defined as active, analytical and specifying. Increases arise from the amount of investment in human resources during the reporting period. Decreases arise from the amount of annual depreciation of the investment.¹ The final balance of the account shows the amount of investment in human resources. It is reflected in the asset side of the balance sheet. A net increase is formed when the amount of affected investment costs exceeds the amount of investment depreciation on this item and vice versa. Net increases in the account affect the financial result of the company through the profit and loss statement. The increase is reflected in the statement in its income section as an increase in prepaid expenses.

¹The annual depreciation rate can be, for example, 20%.

2.2.3. Modification of the balance sheet to include CSR investments

A method of including investment costs in CSR in the company balance sheet based on the balance sheet and profit and loss statement may be presented to illustrate the idea in practice. In conformity with the methodology for reporting the investment costs in CSR and human capital formation in the company balance sheet it is required that:

First, the increase in the amount of taxes due under the Corporate Tax Act is to be remitted in favour of the company by creating a special item on the liability side of the balance sheet labelled "Remitted corporate tax on CSR."

Second, the increase in net income after taxes to be reflected as a separate item on the liability side of the balance sheet, "Retained earnings for human resources" which, together with the item "Remitted corporate tax on human resources", are sources for budgeting programmes for investment in human resources in the company.

The main advantage of the way of reporting the CSR investment in the company balance sheet presented, is that it resolves dispute between the financial management of the company, shareholders and government regarding the need to finance investment programmes in CSR initiatives. As a consequence:

- financial management benefits from budgeting expenses of an investment purpose, the effect of which results in an increase in the marginal product of the company;
- accounting benefits from grouping this specific type of expenses, because it then manages to present a true picture of the full range of available production factors in the company through the annual financial statements;
- shareholders benefit not only from the increase in balance sheet entries in capital accounts, but also from the expected future increases in production results and positive public reputation of the company;
- the state benefits from encouraging investment in CSR including human capital formation at a company level, which generally leads to increased capital formation in the national economy.

On the other hand, it may be noted that, according to the concept of actual costs, there is a security and certainty of return on this kind of investment. In terms of investment analysis, however, such an assumption is defined as illogical, although there are methods through which the company can be protected from losses in the

event that the individual invested in decides to leave.² It is also possible that an employee, despite the investments made, fails to generate an increase in the marginal individual product that will actually guarantee the payback of the investment. The responsibility for the occurrence of such a risk has to be taken by the Management function although the negative effect will eventually find expression in the form of lost profits, unproduced output, or an anticipated increase in sales that is not achieved – all things that affect the financial performance of the company.

Unfortunately, legislation not always permits the application of the methodology for balance sheet reporting of investment costs for human resources. In fact, any implementation of theoretical models and patterns in reality often faces serious opposition from practice itself. Overall, this may be due either to the general macroeconomic environment or traditional conservatism in respect to new and rational ideas. To overcome such a problem with the methodology of balance sheet reporting of investment costs for human resources it is necessary to precisely take into account the interests of the main economic agents. In this respect, it is reasonable at the level of national financial and economic policy to introduce a change in the fiscal and accounting treatment of human resources.

It is necessary to allow fiscal recognition of corporate investment costs for human resources (at a reasonable amount to 10% of the annual budget "Wages"), which costs should subsequently be included in the company balance sheet following the *methodology of actual costs*. In this situation, society will benefit on the one hand, from a more productive workforce having a continually updatable level of knowledge and skills, and on the other, from the increase in the volume of income tax, since the increase in "human capital" wealth will lead to an increase in income generated by its accumulation in companies. In general, it can be said that, given the obvious benefits of developing and implementing such an approach, it is necessary to take more decisive steps in the direction outlined, both by the companies themselves and by legislature.

2.2.4. CSR Pricing

The basis for applying the concept of CSR Pricing is the understanding of the life cycle of goods: products and services. The stages of the life cycle of goods are six: Extract > Process > Manufacture > Sell > Consume > Dispose. At each stage, costs for transportation, storage, processing material and energy are usually included.

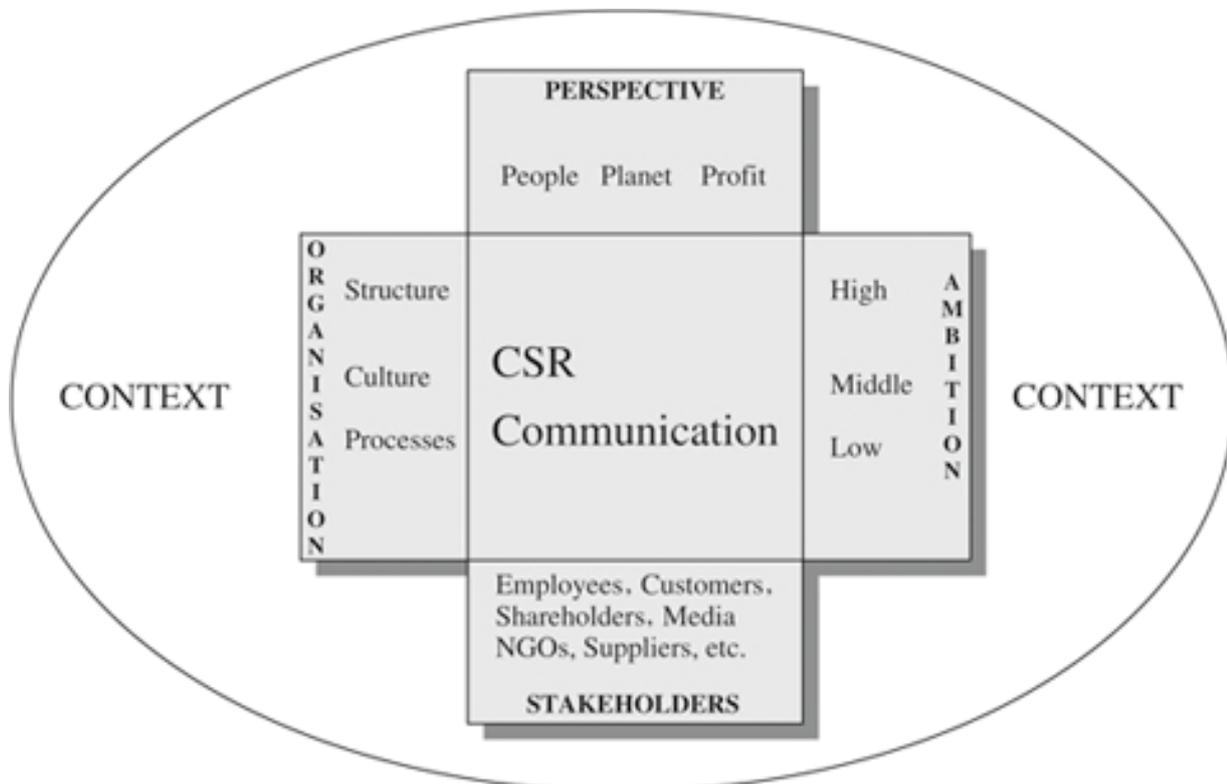
²It's about the opportunity through a contract between an employer and an employee to ensure the keeping of the latter in the company for a period commensurate with the period of the amortization of the investment.

Additionally, on each stage waste material and pollution are regular output. Therefore, the main idea of CSR pricing is to optimize the ratio between goods lifecycle inputs to outputs. Such a system introduces the core principle of *circular economy* where as many materials are recycled and upcycled.

2.2.5. CSR reporting analytical model

CSR reporting framework needs its theoretical bases related to the reasonability to organise it from the stakeholder's point of view. For the company CSR reporting creates several valuable benefits. CSR reporting increases the public acceptance of the business as transparent, trustful and legitimate.

Figure 2.2: CSR reporting analysis model



Source: Anne Ellerup Nielsen and Christa Thomsen (2009). Investigating CSR communication in SMEs: a case study among Danish middle managers. *Business ethics, the Environment & Responsibility*. Vol. 18, Issue 1, pp. 83-93, doi: <https://doi.org/10.1111/j.1467-8608.2009.01550.x>

CSR reporting can promote large area of activities related to:

- Promoting companies' brand and reputation;
- Assist developing companies' strategy;
- Achieve market recognition and public identity;

-
- Improve financial performance and market capitalization.

The bases of CSR reporting analytical model is always the triple bottom line – people, planet and profits (see Figure 2.2). The output of the CSR reporting process is usually combination of internal detailed report and external synthesized report. The internal report is available to all companies' staff and s in-depth CSR information focus on *Ex post*, *In medias* and *Ex ante* CSR evaluations, recommendations, processes, conclusions and findings. The external CSR report is a public document. The external CSR results is part of the public image strategy of the company and therefore all good practices and proofs of CSR activities are the basic content of this report.

2.3. Budgeting framework for CSR implementation cost

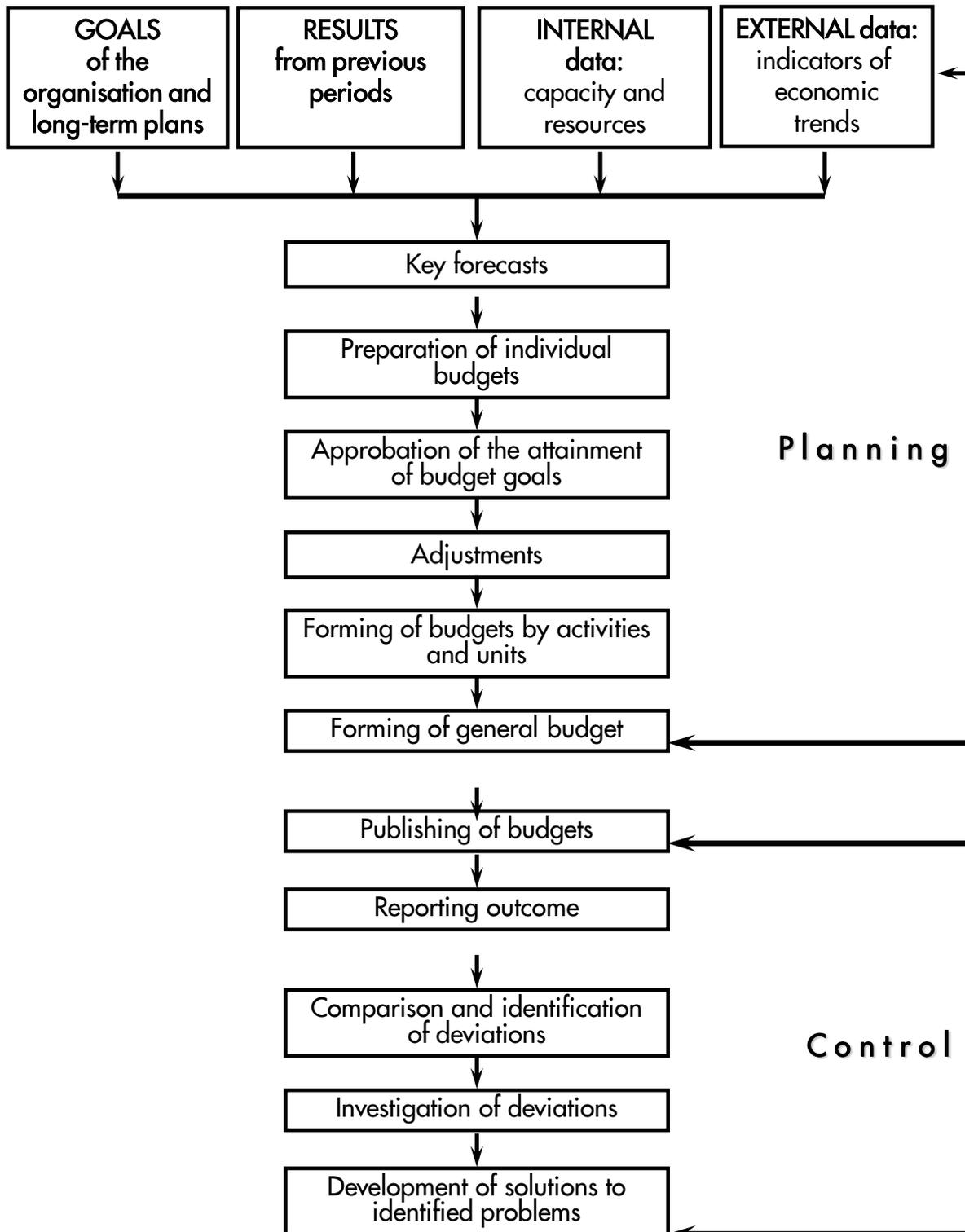
The budgeting of human resource costs in organisations is not an end in itself, nor a detached process, but a part of the process of strategic planning, not only for human resources, but also for the overall functioning of the company. Therefore, when we talk about human resource cost budgeting in the company, we mean the processes of compiling specific budgets to finance these costs as part of the process of the budgetary management of the company. A wide range of research on the concept of budgetary management can be found in scientific literature (See A. Hopwood (1974); P. Sneyd (1994) and others). Despite their differences, the common theme in these studies is a combination of planning and control (See Figure 2.3):

First, the process of compiling the budget of a company is based on:

- forecasting and planning the basic needs for raw materials, personnel, capital and services;
- the coordination of interdependent activities, the delegation of management and the allocation of powers and responsibilities;
- the motivation of managers on the one hand, and employees on the other, to achieve major business goals.

Second, compliance with all technical procedures when compiling a business budget does not guarantee its successful implementation. The reasons for this lie in the large number of variables and risk factors involved which are difficult to predict. Moreover, perhaps the most important aspect of the feasibility of a company's budget remains the motivation of its human resources. It is this factor, however, that too often goes unnoticed by financial managers.

Figure 2.3: Methodology of the budgeting process in the company



Third, because the basic goals for the development of the company for a given budgetary period are set out in the budget, it may be assumed that the priorities of these goals are also priorities for resource allocation by individual structural units

and management functions. Several studies suggest that making profit is, and remains, the number one budget target.

Fourth, in terms of methods of implementation as basic elements of the budgetary procedure we may consider the activities related to:

- the choice of goals;
- planning;
- control.

Fifth, the determination of the budgetary framework and company objectives are based on an accurate survey of the position of the organisation, markets and competitors for a past period. At the same time an important aspect of the budgetary procedure is the prediction of future performance and development.

Sixth, when preparing the budgets of a company we can use these alternative approaches:

- functional approach - in which individual organisational and structural units form separate budgets to finance the full range of costs required by their activities (in this case we have to discuss a budget for human resource management in the company, which has to include as separate items: administrative and management costs, operating expenses and costs of an investment nature);
- cost-benefit approach - in which budgets are formed according to the different types of costs (for raw materials, for wages, for investments) and the different types of income (revenue from sales of goods and services);

Seventh, the two approaches are not at odds – on the contrary, they are complementary. What is specific to them both is that they have the character of an analytical budget for a separate, specific activity or unit. For its part, the budget of cash flows is of a synthetic budgetary nature, which includes entries of end period balances for each of the analytical budgets.

In terms of time, budgets most often encompass a period of one year. However, they may be developed on a weekly, monthly or multi-annual basis.

2.4. Marketing approach for involvement of corporate financing and social initiatives support

Solving the problems related to the marketing approach for involvement of corporate financing and social initiatives support requires presentation of the

methodological foundations for the implementation of causes in the corporate environment, in which both company and public interests are affected. In this part of the textbook, the logical attention is focused on the different aspects of CSR according to its subjects, objects, management practices and types of social initiatives; questions about the evolution of corporate philanthropy and cause marketing as an example of good management practices are touched upon, as well as the importance of brand and trade name for identification in the corporate environment and among consumers with a view to the success of the initiatives undertaken.

2.4.1. Management framework for promoting corporate causes

The beginning of the 21st century started with the focus of science on socially significant responsibilities, as a separate component of business. Carrying out a successful business in combination with the application of social responsibility is increasingly having an impact on society. The combination of social activities, environmental characteristics and the implementation of business strategies by organisations is becoming an increasingly valuable element in the new era. This is also the meaning of the integration of CSR into the business environment, "as a concept where companies integrate social and environmental issues into their business operations and their interaction with stakeholders on a voluntary basis", which is also the official concept structured in the Green Paper of European Commission: Promoting a European framework for corporate social responsibility since 2001.

In recent years, CSR has established a new approach to doing business that combines success and value creation with a proactive attitude. Practices are divided into six types of social initiatives:

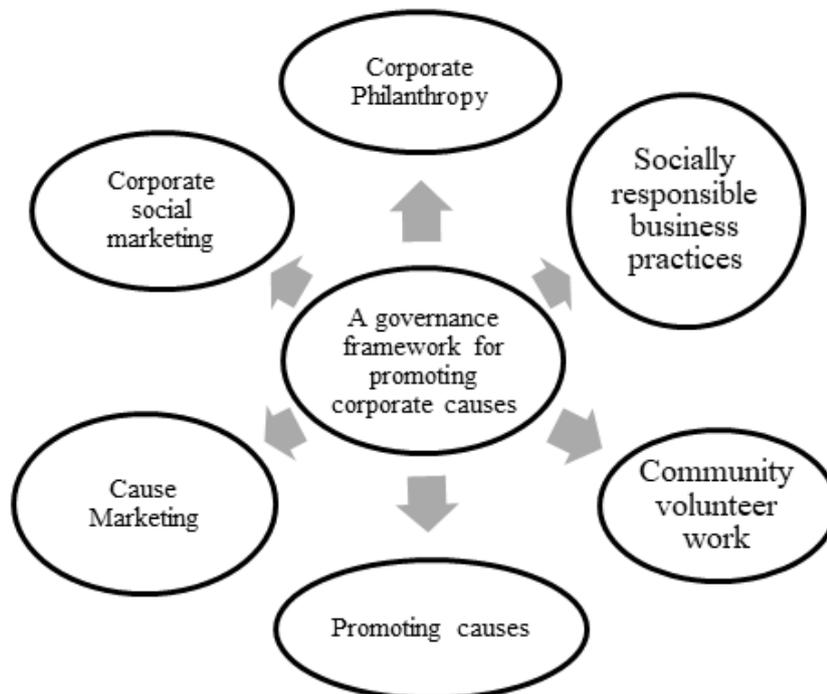
- promoting a cause (raising awareness and concern for social causes);
- cause-related marketing;
- corporate social marketing (behaviour change initiatives);
- corporate philanthropy (contribution directly to causes);
- volunteering in the community (employees donating time and talents to the community);
- socially responsible business practices (discretionary practices and investments in support of causes).

The main advantage of this division lies in the fact that it takes into account both corporate and public interests from the point of view of corporate governance.

This puts corporate social responsibility at the fore in the structure of initiatives to improve the well-being of the community in the integration of good business practices. This process itself forms its management framework for initiating corporate causes and their successful implementation.

Good practices for doing business that combine success and value creation are divided into six main social initiatives (See Figure 2.4)

Figure 2.4: A governance framework for promoting corporate causes



Source: Author's adaptation, based on (Vevere, V., Svirna, A.)

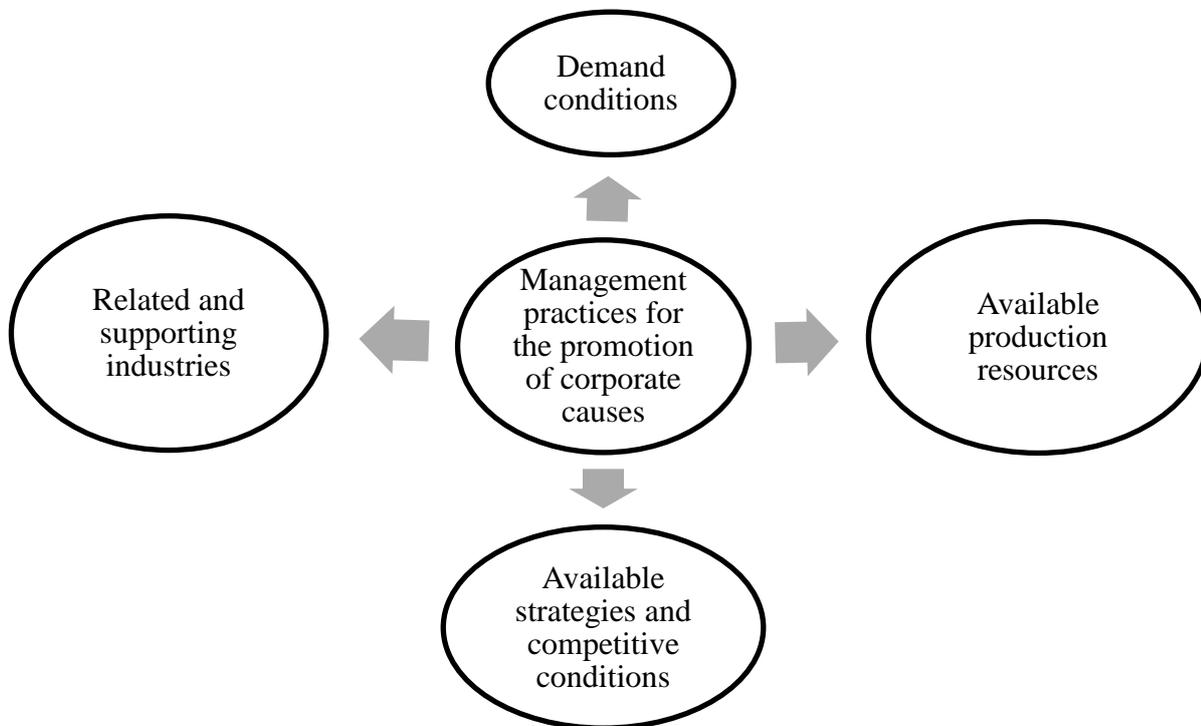
A major contribution to the division thus presented is that both corporate and public interests are taken into account.

Given the above-mentioned characteristics, the following key characteristics fall under the management framework for the purposes of promoting and realizing corporate causes:

- Availability of a specific business organisation/s with its own financial resources;
- Broad consumer orientation, without expectations of financial benefit;
- Voluntary commitment.

According to M. Porter and M. Kramer³, management practices for promoting corporate causes can be divided into four groups:

Figure 2.5: Management practices for the promotion of corporate causes



The implementation of different types of social causes and initiatives could be achieved through the application of different types of tangible and intangible approaches, such as: monetary contribution, grant aid, paid advertising, promotional sponsorships, technical assistance, donations of products, materials and services, voluntary actions etc. and various programs that involve long-term commitments and building strategic partnerships with private, public, non-profit organisations, in which common causes are shared and common communication channels are used, support for the chosen cause is integrated, and common marketing strategies are developed.

As a result of the correct integration of strategic management and the application of material and non-material approaches, in accordance with corporate values, a number of benefits can be achieved through strategies, such as: increasing the company's reputation, attracting trained and qualified personnel, new product solutions and increasing company profits.

³ Vevere, V., Svirna, A., Business ethics and corporate social responsibility, Publisher: Ekonomikas un kulturas augstskola, e-ISBN 978-9984-24-232-3, https://www.augstskola.lv/upload/CSR%20book_FINAL_01.2020.pdf

The support of the listed social initiatives can be realized through various forms. A key point is crossing the border "from obligation to strategy". In a seminal article in the Harvard Business Review as early as 1994, Craig Smith defined the "new corporate philanthropy" as a shift to making long-term commitments to specific social issues and initiatives by providing more than monetary contributions raised through business funds units, philanthropic organisations, etc.; forming strategic alliances, but in a way that contributes to the achievement of business goals.

The traditional approach boils down to fulfilling obligations. At the end of the last century, decisions about the choice of support for specific social issues were usually made on the basis of topics of great concern to society, the main idea being: "do good to look good". In the US, where most examples are from, corporations typically establish, follow and report a pre-fixed annual distribution budget, often tied to corporate revenue or pre-tax profits. Funds are distributed to as many organisations as possible, reflecting the understanding that this will satisfy the most constituencies and create the greatest visibility for philanthropic efforts, resp. public recognition. A characteristic of commitments is that they are short-term, which allows the organisation to evenly distribute wealth over different organisations and issues over the years. When developing and implementing specific initiatives, the guiding rule is to do good in the easiest possible way, which often boils down to transferring money to an organisation, and it is its responsibility to spend it appropriately.

The understanding of a new approach is associated with supporting corporate goals, but with a certain focus over time. The choice crystallized in the outgrown desire for charity with a positive effect for both the recipient and the donor. The practice is saturated with more and more examples of companies choosing several strategic focus areas that correspond to their understanding of corporate values: choosing initiatives that support business goals related to their core products and markets that provide opportunities to achieve marketing objectives, such as increased market share, market penetration, or building a desired brand identity. This requires a thorough assessment of issues based on their potential for positive support in times of corporate crisis or national politics. Developing and implementing programs in this new model more often requires managers to make long-term commitments and offer in-kind contributions such as corporate expertise, technological support, access to services, or material donations. More and more efforts are directed towards sharing distribution channels with partners for common causes; to devoting part of the working hours for work outside official commitments; integrating issues in marketing, corporate communications, human resource management and community relations and forming strategic alliances with one or more external partners (private, public, non-profit). Currently, similar examples can be found in the Bulgarian practice.

2.4.2. CSR and cause-related marketing

The term "cause-related marketing" was first used by American Express in 1983. It was associated with a description of their fundraising campaign to restore the Statue of Liberty. This leads to a two-sided effect - the number of the company's customers and the use of the cards increases. According to Elitsa Barakov: "Marketing related to a cause is guaranteed success, as it satisfies the natural need of consumers to do something good by buying a product. It also meets public expectations for companies to do not just business, but also to be socially responsible." (Kotler & Lee, 2007) found the essential differences of cause-related marketing in several aspects: contact with customers, coordination with a charitable organisation, and the need for promotion through paid advertising. A corporate social initiative is the only one among others in which "the company's level of empathy depends on some customer action".

In theory and practice, there are three definitions of cause-related marketing:

- according to the American definition: a process of association of an organisation (firm) with another type of non-profit organisation, which aims to promote a product or service, while at the same time raising funds for the non-profit organisation;
- according to the European definition: the process of using money, techniques and strategies from marketing to support charitable causes, while at the same time doing business development.
- according to the definition of the British organisation Business in the Community: a commercial activity through which the business and the charitable organisation/cause partner in the promotion of a product or service, with the aim of increasing the image for public benefit.

Given the above, the concept of corporate social responsibility implies the moral responsibility to provide meaningful, transparent and effective support jointly between companies and their customers. Accordingly, businesses should work for the benefit of society and focus on positive aspects and socio-economic importance for society. It is also evident from the above quoted definitions that "cause-related marketing" is a process of bringing together companies to use money, techniques and marketing strategies to raise public image, promote products and services and support between companies, with the aim of socio-economic benefits for society.

2.4.3. Dimensions of socially responsible measures of the company - volunteering for the community, philanthropy, accepting social goals

Corporate philanthropy is one of the four elements forming the pyramid structure of social responsibility proposed by Carroll in 1991. Subsequently, Carroll, Swartz

& Carroll proposed a new model of CSR in which the philanthropic element is included with the ethical and/or economic element, depending on the motives behind it.

Corporate philanthropy means "direct contribution of the company to charity or to a specific cause in the form of free provision of money, donations or services" (Zahariev, 2014). Over the years, corporate philanthropy has developed in the direction of strategic selection of areas and topics that are tied to the business goals and tasks of the business organisation and creation of long-lasting relationships with non-profit entities. The scope is also expanded – not only through monetary donations, but also through the provision of other corporate resources such as surplus products, use of distribution facilities and channels, provision of expert technical assistance, etc.

The possible benefits of corporate philanthropy are directly related to the image of the company, increasing its productivity, increasing markets and a secure workforce (Kotler, 2011, p. 187). Possible problems and challenges for philanthropy are expressed in its relatively lower visibility compared to other corporate social initiatives and difficulties in tracking activities and measuring results.

Some models and definitions also include employee voluntary actions as part of corporate philanthropy. Others, e.g. (Kotler, 2011, pp. 155-158) distinguish it as a separate initiative that carries its own specific characteristics in terms of corporate benefits, possible problems and ways of implementation. Community volunteering is "an initiative in which the corporation supports and encourages its employees and/or partners to voluntarily dedicate their time to local public organisations and causes - with their knowledge, skills or physical labour" (Zahariev, 2014).

A distinguishing feature of employee volunteer work in relation to other social initiatives is that it alone implies a personal and voluntary contribution to local organisations and causes. Modern corporations support and encourage these forms of activity of their employees, aiming to direct and encourage them to engage in initiatives related to their core business values and company goals. This support can be expressed in a wide range of forms: increasing the awareness of employees regarding existing opportunities to contribute to the activities of local organisations or to the achievement of specific causes, providing the opportunity for volunteering to be carried out within working hours, providing necessary resources for carrying out the volunteer activity, encouraging active volunteers through material and non-material incentives, etc.

Volunteering creates a sense of empathy for the needs of the rest of society and the satisfaction of being able to actually contribute to their satisfaction with a personal

contribution. This characteristic of it greatly contributes to increasing the satisfaction and motivation of employees and their sense of belonging to the company and its business values and goals. This type of initiatives can also be one of the best opportunities to build a reputation as a socially responsible organisation, increase commitment to other current investments in social initiatives, as well as purely practical benefits such as opportunities to associate the company's products with social care and providing information about its product range.

Community volunteering is undoubtedly one of the most sincere and satisfying forms of community engagement, which we associate with significant potential for corporate benefits. When using it, we must still keep in mind the potential problems, which basically come down to the loss of a resource for the company: reduced productivity due to allocating part of the employees' working time to these initiatives, scattering efforts between multiple initiatives without achieving a real social influencing or creating an association with the name of the company and its products, the need to find the right balance and forms for communicating this type of activity, etc.

Socially responsible business practices are “business practices in which a corporation adapts and demonstrates a way of working and investing that supports causes in the name of public welfare and environmental protection” (Kotler, 2011, p. 223). A distinctive feature of this type of social initiatives is that the activities that fall within their scope are not required imperatively - neither by legislation, nor by moral or ethical standards, but rather are the result of a proactive search for corporate solutions to social problems.

Most initiatives related to socially responsible business practices relate to changing internal procedures and policies, providing information to customers and investors, protecting personal information about customers, making decisions related to the product range, location of production, selection of suppliers, raw materials and materials, creating programs to support the well-being of employees, providing greater access to human resources, etc.

Possible benefits for companies that adopt socially responsible practices are associated with positive financial results such as reduction of operating costs, increased motivation, loyalty and productivity of employees, monetary incentives from regulatory authorities, etc., as well as a number of marketing benefits: opportunities for good positioning of the brand and creating preferences for it, improving the quality of products, building relationships with external partners, etc.

The potential problems stem primarily from the fact that the introduction of new and more responsible business practices is usually associated with change, which

inevitably raises doubts and criticism from stakeholders. In order to overcome these problems, it is necessary to pay special attention to the selection of an appropriate social theme that meets the corporate and societal needs, the development of a strategic plan for the introduction of the practice, the definition of goals and plans for tracking and measuring the results and ensuring open and direct communication (Kotler, 2011, p. 251).

2.4.4. Corporate social marketing – brand, trade name and label

Business-oriented CSR has been firmly establishing its presence among the economic organisations in Bulgaria. This is confirmed by the growing number of initiatives that are directly aimed at CSR. The many CSR-oriented guidelines follow specific commitments to the development of the social, economic and environmental conditions. The specific features of the company and its strategic management impose as a significant factor for the identification of its brand. Associating a brand with the right social cause is an important part of its development. Socially responsible business provides a favourable direction for positioning the brand, the essence of which is to highlight the advantage of the brand in the consumer's mind. (Kotler, Armstrong, 2001) describe brand position as "a complex of perceptions, impressions and feelings that a consumer has about a product in comparison to competing products". According to (Hannaysha, Jalal, 2020) important elements in the achievement of marketing goals is the preparation of a marketing plan, including the positioning of the company, the price, the methods of promotion, the target group, the factors for building the brand image, etc.

Brand positioning and commitment to CSR stand out in today's digital world. They are particularly important through social networks that provide for opportunities to shape and maintain public opinion using corporate social initiatives. Building a reputable brand is a strategic goal for achieving marketing goals as it brings sustainable advantages in the market and higher added value to customers.

The various approaches give various views on customer satisfaction. As it can be seen in Figure 2.6, a possible classification comprises brand characteristics, assessment, cognitive and emotional response outcomes, point of sale, experience before purchase and consumption experience.



Figure 2.6: Characteristics of customer satisfaction approaches

2.5. Standards for CSR

2.5.1. Measurement and proofing of CSR

Finding the right framework for measuring an organisation's CSR is a challenge for companies due to its multi-functionality. Among the metrics that are important to track the process are company sustainability, corporate philanthropy, company culture, diversity, return on investment, reputation, and more. Some of them are difficult to quantify, which is very often a barrier to assessing the added value of CSR. Measuring and evaluating the impact of CSR is extremely important, as it allows: to present the importance of actions, to improve future decision-making, to reduce staff turnover. Among the ways to measure the effect of CSR are:

- comparing the business and its results with similar companies;
- use of performance indicators;
- revenue measurement;
- reputation - through the perception of users;
- staff turnover;
- relations with business partners.

2.5.2. International standards for CSR

The concept of social responsibility, as internationally recognized, is used worldwide based on the application of international standards. Through them, both uniform application of CSR in an international aspect and its improvement are achieved.

Various CSR reporting frameworks exist. Among the more important standards and normative documents that form the concept are:

- GRI (Global Reporting Initiative);
- CDP (Carbon Disclosure Project);
- CDSB (Climate Disclosure Standards Board);
- DJSI (Dow Jones Sustainability Index);
- ISO 2600 (International Standard – Guidance on Social Responsibility);
- Series AA 1000 (Accountability);
- SA 8000;
- OECD Guidelines for Multinational Enterprises;
- EMS (ISO 14000, EMAS).

GRI (Global Reporting Initiative) is a non-profit organization that promotes economic, environmental and social sustainability. It was established in 1997 in partnership with the United Nations Environment Program. The organization develops sustainability reporting guidelines that seek to increase transparency and accountability of economic, environmental and social performance and provide all companies and organizations with a comprehensive sustainability reporting framework that is widely used worldwide. Universal standards strengthen the very foundations of all reporting through the GRI, providing the highest level of transparency for organizational impacts on the economy, environment and people. Initiated by the Global Sustainability Standards Board (GSSB) in 2019, the project aims to revise the GRI Universal Standards, which consist of:

- GRI 101: Foundation 2016;
- GRI 102: General Disclosures 2016;
- GRI 103: Management Approach 2016

The Global Sustainability Standards Board aims to improve the quality and consistency of sustainability reporting by addressing how organizations use standards to reveal their impact on the economy, the environment and people.

CDP (Carbon Disclosure Project) is a non-profit charity that manages the global disclosure system for investors, companies, cities, states and regions to manage their environmental impact. The global economy views CDP as the gold standard for environmental reporting, with the richest and most comprehensive data set on corporate and city actions. In Europe, CDP Worldwide (Europe) gGmbH is a

charitable limited liability company based in Berlin, Germany, registered in the EU Transparency Register since 2012. It is a wholly owned subsidiary of CDP Europe AISBL, a charitable organization based in Brussels, Belgium (together: "CDP Europe"). CDP Europe has an operating subsidiary, CDP Europe – Services GmbH, which manages service-based activities in support of the charity's activities. Staff are based in Brussels and Stockholm. Their work covers 26 EU member states, in addition to the EFTA countries Norway, Switzerland, Iceland and Liechtenstein. CDP Worldwide's head office in London manages CDP's operations in the UK and Ireland.

CDSB (Climate Disclosure Standards Board) is an international consortium of business and environmental NGOs. They are committed to developing and aligning the global mainstream model of corporate reporting to equate natural capital with financial capital. They offer companies a framework for reporting environmental information with the same rigor as financial information. This in turn helps to provide investors with useful environmental information through the main corporate report, improving efficient capital allocation. Regulators also benefit from compliance-ready materials. Companies, regulators, stock exchanges and accounting firms can benefit from this consortium in a number of ways, including:

- companies can use the CDSB framework to incorporate climate change, environmental and natural capital information into core financial statements, helping companies achieve a holistic view of how climate change and natural capital may affect their performance and the necessary actions they could take to address the risks and opportunities.
- regulators can benefit from a standards-ready material and framework that can be immediately adopted or referenced as a method of compliance in regulations/guidelines, business decisions related to the use of natural resources, land and sustainable behaviour.
- stock exchanges may consider new voluntary and mandatory "listing" requirements related to significant climate change, environmental and natural capital risks and opportunities.
- accounting firms can provide more comprehensive assurance to companies that report climate change, environmental and natural capital outcomes.

DJSI (Dow Jones Sustainability Index), tracks the performance of companies that lead corporate sustainability in their respective sectors or in the geographical areas in which they operate. The purpose of the Dow Jones Sustainability Indices (DJSI) is to track the performance of leading companies in the field of corporate sustainability. The Dow Jones IndexSM (DJSI World) and relevant subgroups evaluate the top 10% of the largest 2,500 companies in the Dow Jones Global Stock Market Index (DJGTSM) based on long-term economic, environmental and social criteria. The Dow Jones Sustainability World 80 IndexSM (DJSI World 80) tracks

the performance of the largest company global news that is included in the Dow Jones Global Sustainability Index. The 80 companies are weighted by their sustainability score. The Dow JonesSM World Extended Sustainability Index (DJSI World Enlarged) represents the top 20% of the largest 2,500 companies in the DJGTSM. The DJSI methodology facilitates customized sustainability indices, such as indices covering different regions, different sectors, different currencies and other exclusion criteria.

ISO 26000 (International Standard - Guidance on Social Responsibility) - helps clarify what social responsibility is, i.e., helps businesses and organisations turn principles into effective action and shares social responsibility best practices worldwide. It is aimed at all types of organisations, regardless of their activity, size or location. The standard was launched in 2010 after five years of negotiations between many different stakeholders around the world. Therefore, this International Standard has been developed using a multi-stakeholder approach involving experts from more than 90 countries and 40 international or broad-based regional organisations engaged in various aspects of social responsibility. These experts consist of six different stakeholder groups: users; government; industry; labour; non-governmental organisations (NGOs); and service, support, research, academic and other. In addition, special provision has been made to achieve balance between developing and developed countries, as well as gender balance in editorial teams.

AA 1000 Series (AP) - an internationally accepted framework based on principles aimed at the organisation, identification, prioritization of sustainability, management and effectiveness. Its work is based on the principles of:

- inclusion – people should have a say in decisions that affect them;
- materiality – decision-makers must identify and be aware of the sustainability issues that matter;
- responsiveness – organisations must act transparently on the topics of material sustainability and related impacts;
- impact – organisations must monitor, measure and be accountable for how their actions affect their wider ecosystems.

EMS (ISO 14000, EMAS) - ISO 14000 is a series of international environmental management standards created in 1996. They define the requirements for creating an environmental policy that determines the impact on the environment. A primary objective of ISO 14000 is to promote effective environmental management systems in organisations through the use of best practices for organising and applying information related to the management of the analysed environment. The standards are applicable in all countries and refer to the following principles: applicability, promotion, economy, flexibility, scientific validity, practicality, utility and usability.

2.5.3. CSR standards in HR management

SA 8000 (Social Accountability 8000) is the most widely used standard for social responsibility, developed in New York by the American non-governmental organisation Social Accountability International, an international standard for social responsibility. It examines issues related to the social policy of companies, setting policy and procedure requirements regarding: respect for human rights, in particular the rights of the child and women, fair remuneration of employees, respect for all other rights guaranteed by UN charters and International Labour Organisation conventions.

The first version of this standard entered into force in 1997. The Council on Economic Priorities Accreditation Agency (CEPAA) had a leading role in the development of the standard: a consortium of organisations including: trade unions, human rights organisations, non-governmental organisations working to protect rights of children, representatives of academic circles, traders, investors, consulting, accounting firms and certification organisations. SA8000 aims to offer a certification standard to those firms and corporations motivated to ensure compliance with the basic rights of workers. The standard is based on 12 conventions of the International Labour Organisation (ILO), the UN Universal Declaration of Human Rights and the UN Convention on the Rights of the Child.

The standard examines 9 main areas of human resource management. Certified organisations must demonstrate that their activities are in full compliance with national legislation and SA8000 requirements in the following aspects:

- lack of child labour;
- absence of forced labour;
- presence of healthy working conditions;
- freedom of association of workers;
- lack of discrimination;
- appropriate disciplinary practices;
- suitable working hours;
- adequate pay for work - minimum wage and adequate pay according to work and qualification;
- management practices - the conclusion of collective labour agreements and training opportunities.

This standard helps representatives of the business sector to design, implement and develop policies aimed at the proper management of human resources. Thus, they demonstrate to third parties their implacability towards employers whose profit and presence in the market is achieved through forced labour in conditions that violate

basic human rights. Certification according to SA8000 is an expensive process and many business representatives recognize the standard as "suitable for third world countries".

This concept is fundamentally incorrect, because many of the leading corporations in the world are certified according to this standard, using it as a means of gaining a good public image. These same corporations set their own social requirements for their suppliers based on the SA8000 standard. Control of social requirements is carried out by the corporations themselves, which send their own auditors or hire auditors from accredited professional certification organisations. An eventual SA8000 certification by an SAI-accredited independent certification body in most cases eliminates multiple second-party inspections.

In addition, representatives of international humanitarian organisations such as OXFAM are involved in auditing companies in the garment and fashion industry in the third world that do not use child labour and forced overtime measures. During an audit, workers are an active party. Their participation takes the form of giving interviews to the auditor or facilitating workplace inspections. The auditor gathers more information about the organisation's operations from shift schedules, payrolls, annual leave requests, on-the-job training plans, additional overtime agreements and overtime compensation.

One of the features of the SA 8000 standard is that it requires companies certified to this standard to impose its main elements on their suppliers as well. International companies require their suppliers and partners to comply with their corporate social responsibility policies and codes of conduct. In this way, the imposition of ethical standards for business behaviour under the pressure of the world's leading companies is stimulated.

2.5.4. Quality standards for CSR

CSR is a successful business strategy for sustainable development, which helps companies not only to increase their influence on the market, but also to build a positive public image. People today are tolerant of enterprises that participate in charitable initiatives and support financial, cultural and public events. Their efforts to protect the environment by recycling unnecessary consumables (toners, paper, glass, plastic packaging, etc.), introducing measures for energy efficiency and for the purification or destruction of hazardous production waste are also respected. On the other hand, employees are looking for employers who offer them not just good remuneration, but also a suitable social package with care for themselves and their family members. Helping the community through your actions can be

extremely satisfying. The greatest inspiration for employees is to work side by side in a mission of kindness. As a result, a sense of togetherness and teamwork is created that stays in the employee's mind long after they have returned to their workplace. Team building programs with corporate social responsibility (CSR) enable companies to help meet a range of human needs that excite their employees. By participating in fun, dynamic and innovative team building programs, teams impact the lives of people in need in a positive and meaningful way. Along with having fun while working together in CSR team building programs, employees will feel a sense of responsibility and purposefulness in the implementation of the important cause. Thus, with slow steps and regardless of its different forms and manifestations, corporate social responsibility is gradually taking over companies around the world.

One of the most important elements of the welfare state in the 21st century is corporate social responsibility (CSR), which is increasingly being talked about in the European Union. In Bulgaria, one of the main problems is the lack of awareness on the matter, since for us the concept is completely new and is still being developed, as a concept and an idea in our socio-economic environment. Corporate social responsibility is a sustainable social commitment of the state with a growing role and importance in terms of increasing the responsibility of companies and enterprises to employees and their families and their impact on society. In other words, companies should work voluntarily to achieve social and environmental goals within their business activities. In order to comply with their corporate social responsibility, businesses should have a mechanism for integrating social and environmental, ethical, human rights and consumer issues into their business operations. Corporate social responsibility is the voluntary commitment of the business to make its contribution to social, economic and sustainable development - a contribution that goes beyond the legally defined requirements regarding social and labour legislation - working conditions, labour relations, environmental protection.

The basic study of the understanding and practices of corporate social responsibility in Bulgaria was conceived in the first half of 2006 within the framework of the Bulgarian network of the "Global Compact" in Bulgaria. It aims to establish the understanding and attitudes towards corporate social responsibility among large and medium-sized companies, as well as among member companies of the "Global Compact" in Bulgaria. Analyses of the main patterns and practices, the factors that deter and promote corporate responsibility are important for the good planning of future projects of the Global Compact Network in Bulgaria, encouraging more companies to adopt such business behaviour.

The general framework of corporate social responsibility is guided by internationally recognized principles and guidelines, including: the Concept of

Corporate Social Responsibility, the OECD Guidelines for Multinational Enterprises, the Ten Principles of the United Nations Global Compact, the ISO 26000 Standard with Guidelines on Social Responsibility, the Tripartite Declaration of the ILO Principles on Multinational Enterprises and Social Policy, the UN Guiding Principles on Business and Human Rights. The main emphasis of corporate social responsibility is: accountability, transparency, publicity and responsible behaviour.

The Ministry of Labour and Social Policy lays down and plays an important role in promoting socially responsible practices in society by promoting, encouraging and supporting the introduction of corporate social responsibility, creating conditions for effective partnerships between all interested parties. Regarding this model in Bulgaria, some good examples and practices can already be pointed out. One of them is the annual competitions for achievements in the field of CSR, which are organised - the goal is to stimulate and recognize them. In order to promote the implementation in Bulgaria of the principles of good corporate governance in 2007, the National Code of Corporate Governance was adopted. This gives reason to define the Code as a step forward towards enforcing the principles of CSR, insofar as it places a more distinct emphasis on relations with interested parties. In 2014, there were 53 public companies in Bulgaria that signed the Code and complied with its requirements.

During its meeting on August 28, 2019, the Bulgarian government adopted a Corporate Social Responsibility Strategy for the period 2019-2023. The development of the CSR Strategy 2019-2023 is in response to the government's political commitment to improving the quality of life of population through transparent, socially responsible business practices and in implementation of the government's Management Program.

Members of the Advisory Council on CSR, which includes representatives of social partners, the scientific community, the non-governmental sector and the state administration, provided active support in the development of the Strategy.

Among the goals of the document are: promoting sustainable implementation of transparent, socially responsible management and business practices, as well as stimulating the development of a policy of socially responsible management of enterprises with state and municipal participation and in public administration structures.

The strategy is based on the voluntary nature of CSR, understood as a commitment by the management of companies, public structures and civil organisations that in their management decisions and daily actions they take into account the specific interests of customers, suppliers, users, employees and the public, including h. in the field of the environment and of all other entities to which their activity is related.

Company management, management units of public institutions, employees and employees have been identified as the main stakeholders. In a wider circle - consumers, corporate clients and subcontractors along the chain with their ecosystem, social partners, civil and academic structures, the environment.

The implementation of the Strategy will be coordinated with measures from other strategic documents in the field of human resources development, employment, demographic policy, environmental protection, education, etc. The strategy is structured in separate thematic parts. The current situation in the field, the main concepts of CSR in a national and European context, the challenges and barriers to the manifestations of socially responsible behaviour are presented. The vision, principles and objectives of the Strategy are presented.

Four strategic goals, relevant activities and measures for their implementation are set. The implementation of the Strategy will take place in three stages: 2019, 2020 - 2021, 2022 - 2023. Action Plans /2019 and 2020-2021/ have been developed to implement the Strategy, and the planned activities are in compliance with the objectives of the Strategy and represent coordinated joint actions of the interested parties. If there is a proven need, especially as a consequence of technological development, leading to qualitatively new labour relations and impact on the environment and society, an update of the Strategy is possible (Portal for public consultations - Council of Ministers, [https://www.mlsp.government .bg/](https://www.mlsp.government.bg/)).

In general, corporate social responsibility in all definitions is accepted as a form of corporate strategic management that sets management standards at a higher level than legal coercion, and presents CSR as a system for managing the relationship between the company and its environment (stakeholders - a person or group that has interests in decision-making or in the actions of a given organisation).

2.5.5. Ecological standards for CSR

ISO 14001 is the international standard for environmental management systems (EMSs) and is the most widely used EMS standard in the world, with more than 14,000 certified organisations in the UK and over 250,000 certificates issued worldwide. ISO 14001 is a basic standard for management systems with regulated specific requirements for the formulation and maintenance of an Environmental Management System (EMS). This helps to control all aspects of the environment, reduce their impact and ensure compliance with regulatory requirements.

ISO 14001 is accompanied by ISO 14004 Environmental management systems - a general guide to the principles, systems and methods of implementation. The

standard covers issues such as the establishment, implementation, maintenance and continuous improvement of the EMS.

All countries belonging to the EU must set high standards regarding the effect of business activities on nature and consider environmental protection and the reduction of the rate of climate change as part of their corporate social responsibility policy.

According to this policy, every company must strive to permanently reduce its negative impact on the environment, as well as that of its customers, and to increase the awareness of employees, customers and society about environmental issues by applying consistent and sustainable measures. To this end, an effective policy must be implemented.

Creation of an internal environmental impact management system

Every company affects the environment mainly through the consumption of energy and water resources, the use of paper and other materials, the condition of the branch network and the efficiency of the equipment and means of transport used. In order to limit the ecological footprint, companies must create an ecological database for tracking and analysing the resources used, based on which measures are taken to reduce their quantity. Part of these steps are expressed in the use of energy-efficient machines and equipment, use of only certified paper, limited use of plastic to a minimum. When choosing the contractors, it works with, every company must set and pay attention to certain environmental criteria. For example, they should encourage their customers to use online and automated services.

At the same time, companies should strive to promote active lifestyles and a responsible attitude towards nature among their employees, through the organisation and support of a number of initiatives aimed both at their employees, customers and suppliers, and at the general public. Topics related to ecology and environmental protection must be an essential part of the training of employees and workers of every company.

Environmental risk management in the operation of the company

Part of the environmental protection system is the environmental risk management related to the company's activities. According to a set of criteria for the effect on the environment, the employer carries out a detailed analysis and constant monitoring of all economic activities that pose a potential risk to nature. The environmental risk of each funding request is assessed and those that pose an environmental risk or are related to activities on the company's exclusion list are rejected. By introducing environmental issues into the process of realizing finished products or services, companies manage to raise the overall level of awareness of their customers.

One of the indirect but very significant ways in which the company affects the environment is through the effect of the projects it finances. Every company must support this economic development, which is consistent with the principles of sustainability and the efficient use of natural resources.

Already in 2006, the first program of its kind in Bulgaria to improve energy efficiency was launched - initially for private individuals, and later for businesses. Over time, some companies have become leading institutions financing only projects to improve energy efficiency and protect the environment.

Each company must develop its own methodology for the analysis, evaluation and priority financing of "green projects", united under the name "Green investment". This category includes projects to improve energy efficiency, the production of energy from renewable sources and various measures with a favourable impact on the environment.

2.5.6. CSR standards for safety and health workplace conditions

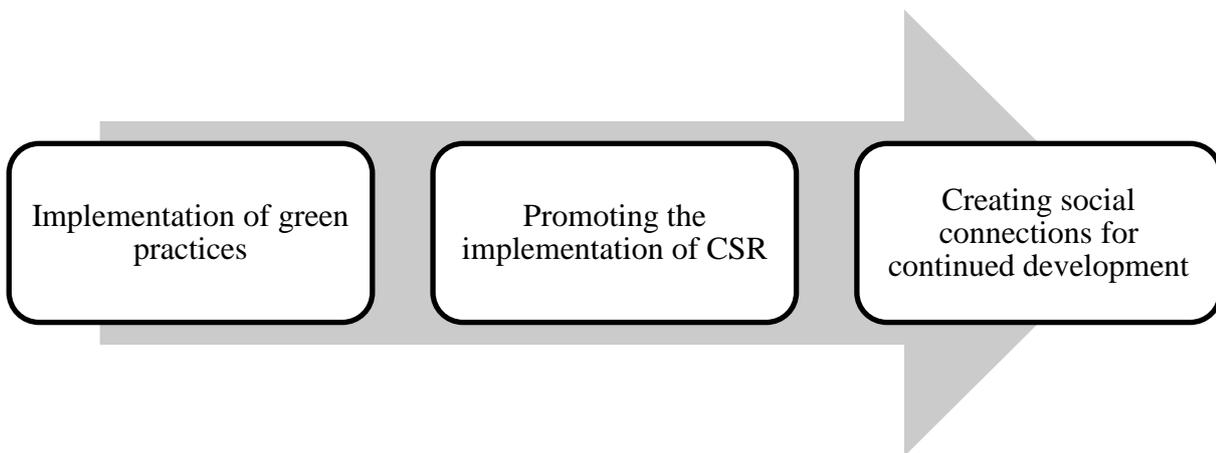
The modern dynamics of the business environment cause the imposition of new organisational forms and relations outside the organisation. Emerging partnerships, outsourcing, franchising, alliances, trade unions, agencies, associations, and government agencies pay significant attention to employee attitudes and human resource management. The application of the many new approaches in the management of human resources is important for the inclusion of the organisation to the social and environmental responsibilities of the new era. Human resources management includes the organisation of interpersonal relations with employees inside and outside the organisation, the implementation of correct communication in the discussion of ethical and social issues related to the possibilities of discrimination, the social assistance system, injustice, working conditions, etc.

The people/departments responsible for the management needs of the team in an organisation from the employer to the achievement of the result among the society are fundamental to the implementation of CSR in any organisation. They can be systematized as it is presented of figure 2.7.

The implementation and promotion of green practices includes helping to reduce environmental waste (closed-loop production, industrial recycling, single-use packaging, etc.) as well as promoting green marketing strategies. It is important that employees and the public are informed about the company's values and environmentally friendly activities. At the individual level, green practices can mean telecommuting from home, carpooling, turning off electrical appliances after

hours, encouraging brown bags in the office to help employees cut fat and calories to live healthier lives, and also reduce packaging waste. Fostering a culture of corporate social responsibility means fostering an attitude of responsibility and a sense of ownership and participation in CSR programs.

Figure 2.7: CSR management and implementation process



Dedicated employees would allow for friendly competition and recognition programs. Social and public relations - company relations with local communities through the following activities:

- Company charity programs are tailored to the interests of employees;
- Voluntary activities;
- Corporate sponsorship of public events;
- Encouraging employees to participate in walkathons, food banks, etc.

The HR department is in most cases responsible for employee motivation, celebrating success, praising individual and group initiatives (including social). Of course, all of these programs require serious management involvement; the particular role of the HR department is to be a vehicle for change and a channel for feedback.

Chapter 3. Emerging social challenges with Industry 4.0

Introduction to the chapter

The chapter "Emerging social challenges to Industry 4.0" aims to focus attention on the vulnerability of the social system from ch. of the possibilities of Industry 4.0 in support of the hard work commitment of people with disabilities and national policies for their Professional rehabilitation. Attention has been paid to the European fiscal harmonization and tax treatment of CSR initiatives with a focus on the regulation of VAT when donating food, and a working model of the functioning of the Bulgarian food bank has been presented. Special attention is paid to the necessary deep changes in education and the challenges of Generation Z. The main characteristics of Generation Z are explored and challenges for educational institutions in training Generation Z are presented. From the position of project management, a step-by-step approach to managing projects in the field of CSR in Industry 4.0. Empirical research has been used to monitor the attitude of business towards the principles of the CRC and the motivation to donate in the conditions of Covid-19.

In this chapter you will acquire knowledge and skills how to

- understand the importance of the public care and public policy to the people in need with special attention to the people with disabilities and their professional rehabilitation;
- understand the importance of VAT regulation of food donation based on the national model of food bank;
- describe and discuss the efficiency of the working model of the national food bank and its intermediary role;
- analyze in depth the specific expectations of Generation Z to the educational system and to society;
- recommend major changes to the educational system with regard to responding to the attitude and expectations of Generation Z;
- monitor the step-by-step approach of developing educational materials and research in the field of CSR in Industry 4.0;
- discuss a survey of business attitude to CSR under the Covid-19 framework.

The chapter includes following sub-chapters

1. Vulnerability of system
2. European fiscal harmonization and taxation treatment of CSR initiatives
3. Profound changes in education and generation Z challenges
4. CSR in Industry 4.0 management: step-by-step approach
5. CSR and Covid-19 pandemic

3.1 Vulnerability of systems

The result of the greater interdependencies and hidden vulnerabilities that businesses face today is an increased number of uncertainties in corporate decision-making. Current network operating models highlight the growing importance of the extended enterprise by establishing greater connectivity between stakeholders around the world. This connectivity has also created entirely new stakeholders and requires innovative forms of risk management.

From a company's perspective, social risk, like any other risk, arises when one's own behaviour or the actions of others in its operating environment create vulnerabilities. In the case of social risk, stakeholders can identify these vulnerabilities and apply pressure on the corporation for behavioural changes. As the ability to listen to corporate stakeholders' perspectives on social issues becomes a competitive necessity, social risk management will need to become more fully embedded in corporate strategy.

Risk occurs when a vulnerability exists in an organisation's operating system in the absence of effective controls and countermeasures (i.e., lack of risk management). To reduce risk, companies develop risk management systems. Risk management systems primarily aim to deal with market uncertainty. Their primary objective is to create controls and countermeasures that minimize or eliminate disruption, loss or damage to business operations and shorten the recovery time from an adverse event and thus reduce its impact on the business.

The vulnerability of the systems manifests itself with particular acuteness in terms of providing employment for people with disabilities.

3.1.1. Providing employment for people with disabilities

The employment of people with disabilities in Bulgaria is a national priority that requires constant political and public attention, as well as the maximum degree of coordination of policies related to it. A priority for Bulgaria is the recovery of employment after the Covid-19 pandemic and increasing the quality of the workforce by providing more training opportunities using digital technologies and the development of new flexible forms of work and remote work. The employment of people with disabilities is mainly regulated in the Employment Promotion Act (EPA) and the Act on the Integration of Persons with Disabilities.

According to NOI and NSI, there are about 200,000 people with disabilities who are at working age, about 10% of which employed in various spheres of public life. According to data from the Employment Agency (EA), in 2021, 14,225 persons

with permanent disabilities were actively seeking employment, which represents 4% of the total number of registered unemployed persons.

With the highest share in the professional structure of the unemployed with permanent disabilities are the persons without qualification and specialty - 42.9%, and with the highest share in their educational structure are the persons with secondary special and professional education - 41.7%. The growth of unemployment, structural changes in the economy, etc. increased the problems of disabled people and in many cases reduced the possibilities of their relatives to provide adequate care for them. As it can be seen from the above, a very small percentage of people with permanent disabilities have found and have a chance to find their fulfilment in the labour market.

The reasons for this are numerous and of a different nature. Some of the more important ones are:

- social isolation and lack of motivation
- inadequate attitude of employers towards the target group
- unsecured access to the workplace
- lack of a suitable working environment tailored to the specific needs of people with disabilities
- weak public awareness
- weak professional qualification

Access to the labour market largely depends on qualifications obtained through vocational training. It can only start after the acquisition of an educational minimum. This means that in order for people with disabilities to participate more actively in the labour market, it is necessary, first of all, to provide them with greater access to the education system.

In Bulgaria, the vocational training of students with disabilities is carried out in the system of existing special schools or in several specialized centres for training people with visual or hearing disabilities. It is known that training in special schools offers a very limited choice of professions, the training is at a low level and does not correspond to the requirements of the labour market.

An important element in the lives of people with disabilities is their awareness and ability to communicate depending on their disability. Information must be provided in an accessible form based of the technological achievements of Industry 4.0 - visual representation of text, text dubbing, subtitles, braille, sign language and sign dubbing, voice dubbing, tactile communication, enlarged fonts, accessible multimedia, as well as any written, audio, in simplified language, voice-over, complementary and alternative methods, means and formats for accessible information.

3.1.2. Professional rehabilitation

Creating and maintaining workplaces for people with disabilities, adapting workplaces and equipment according to the psychophysiological and anthropometric characteristics of persons with disabilities, ensuring healthy and safe working conditions, on the one hand and on the other - improving professional skills and increasing the qualification of people with disabilities, incl. with mental disabilities, with a view to guaranteeing the quality of the manufactured products, successful participation in the market and expanding the employment opportunities for persons with disabilities.

Ensuring employment through the work of people with disabilities is a complex task, the resolution of which is difficult to implement, but it finds the best form of realization through the specialized enterprises and cooperatives of people with disabilities. The active social policy in them, the integrated approach are only part of the arguments of the good practices of the Bulgarian enterprises and cooperatives for people with disabilities.

3.2. European fiscal harmonization and taxation treatment of CSR initiatives

Food and grocery donations are part of the CSR concept. In view of the donor's fiscal status as a VAT-registered person, the act of donation itself may be treated by the tax authorities as a taxable transaction.

3.2.1. The VAT regulation of food donation

In the conditions of the Covid-19 pandemic, such initiatives were widely advocated and popular, which also found legislative support. With changes to the Law on Value Added Tax, the National Assembly of the Republic of Bulgaria from 01.07.2022 introduces a regime of VAT-exempt food donations, as long as their value does not exceed 1 percent of the total value of the taxable supplies made by the person of groceries in the calendar year before the current one. The applicable texts are as follows:

The Value Added Tax Act

Article 6, paragraph (4), item 4. (new - SG No. 88 of 2016, in force from 01.01.2017) the free provision of foodstuffs to a food bank operator, when at the time of provision the following conditions are simultaneously fulfilled:

- a) the unit quantity of a food product is of insignificant value;
- b) (amended – State Gazette No. 52 of 2020) the operator of a food bank is entered in a register under Art. 103 of the Food Act;
- c) (amended - SG No. 52 of 2020) the food product is included in the list under Art. 96, para. 2 of the Food Act;
- d) (amended - SG No. 52 of 2020) the term under Art. 96, para. 3 of the Food Law, to which the food product can be delivered;
- e) (amended - SG No. 52 of 2022) the operator of a food bank, before making the donation, has provided electronically to the National Revenue Agency the required information, the content and file format of which is determined by order of the executive director of the agency;
- f) (amended - SG No. 52 of 2022) the total value of food products provided free of charge to food bank operators for the current calendar year does not exceed 1 percent of the total value of taxable supplies made by the person foodstuffs in the calendar year before the current one, and for each provision a document was drawn up with the specified type, quantity, unit and total value of the foodstuffs, certifying their handover to the relevant food bank operator;
- g) (amended - SG No. 52 of 2022) the person who provided the foodstuffs free of charge has no enforceable public obligations at the end of the month in which the goods were provided, and the obligations are not reflected in the tax and insurance his account or are not reflected as submitted for enforcement in the National Revenue Agency.

3.2.2. Operating model of the Bulgarian food bank

Bulgarian food bank (BFB) is a member of the Global FoodBanking Network (GFN) and the European Federation of Food Banks (FEBA). The operating model of the BFB as national operator of food donation initiatives is based on a 3-parties model and a 6-steps approach (see Figure 3.1 and Figure 3.2). The Bulgarian Food Bank was established in 2012 by 9 organisations and companies: The Association of Meat Processors in Bulgaria; Bella Bulgaria AD; Bio Bulgaria (Harmonica); Kraft Foods (Mondelez); Neterra; Piccadilly (Delhaize group); Road Runner (BG

MENU); Tandem – B; FORA (Foundation for Community Development). The leading institution of the model is the Bulgarian Food Bank which main task is to transform the food excess into a resource for different food support programs.

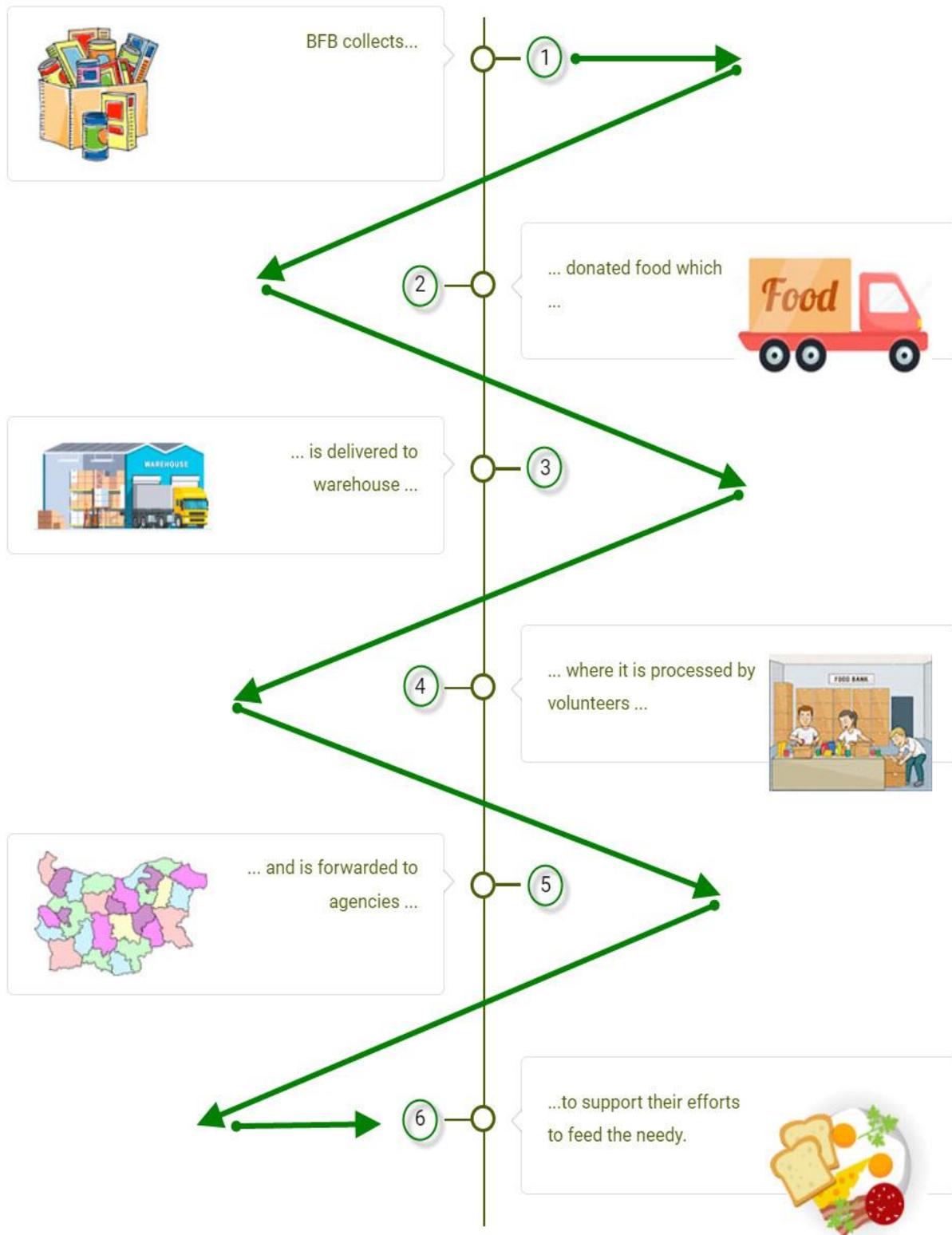
Figure 3.1: Donation food national network – Bulgarian model



As an efficient intermediary the BFB has become a reliable partner to food industry companies and associations in their effort to reduce food waste. As a result the BFB model reaches 8 000 people in need weekly. On annual base 20 000 people are served through different food programs supported by the BFB (prox. equal to 0.3% of the Bulgarian population for 2021).

The implementation of the communication link between the donors in the network of the Bulgarian Food Bank and those in need is based on an information network with a technological level corresponding to Industry 4.0.

Figure 3.2: Bulgarian Food Bank operation model



Source: Author's adaptation, based on <https://www.bgfoodbank.org/en/>

3.3. Profound changes in education and generation Z challenges

In its broadest sense, the term "generation" can be used to refer to a group of people born around the same time who share distinctive social or historical life events during critical periods of development (Twenge, et al ., 2010). The topic of the existence of common characteristics in people, which can, on the basis of the above definition, be assigned to a given generational cohort, has entered the academic discourse widely in the last few decades, with the main emphasis being placed on the question of the significance of differences between individual generations and finding ways to overcome them in a socio-economic plan. In the context of the sphere considered here - the educational one, this topic is even more significant, since the ignorance and disregard of the generational specificity of the learners reduces the effectiveness of the used and applied models and practically condemns the entire educational process to failure. This brings to the fore the need for in-depth knowledge of the specific characteristics of the representatives of a given generation and, respectively, the opportunities to identify the main challenges related to their education.

3.3.1. Key Features of Generation Z

The term "Generation Z" refers to anyone born between 1993 and 2001 (Bulgarian Center for Nonprofit Law, 2020). Today, the oldest members of this age group are in their late twenties, making them the cohort of the generation currently progressing through the higher education system.

Members of Generation Z share several specific traits in common. First, they practically do not know life without digital technologies. This forms in them a different worldview, values and culture compared to previous generations. According to some studies, even the structure of the brain is different for them, which makes visual forms of learning more effective. (Rothman, 2016). Because they tend to perceive visual information much more than verbal information, they have qualitatively different abilities for abstract and associative thinking and a different volume of vocabulary compared to previous generations. They are able to concentrate quickly, but also quickly lose interest, they perceive mistakes as feedback rather than failure (Pancheva, 2021).

A second distinguishing characteristic of the representatives of generation Z is the high degree of self-doubt and striving for professional and social security. Safety and the desire to avoid the risk of injury (physical or mental) are of utmost importance to them. For this reason, they often prefer to express themselves in a virtual environment and defend the privacy of their personal space. This brings tolerance to the fore as a desirable quality and norm for this generation.

The lack of propensity to take risks also characterizes them as not particularly active in terms of starting their own business and striving for professional realization in large companies. Regardless of this specific characteristic, representatives of Generation Z accept work as an important and significant part of their lives and attach more importance to its quality performance than representatives of previous generations. They have a high intelligence, are able to quickly perceive and process a large amount of new information and are extremely curious and inquisitive. At the same time, they are much more pragmatic than the representatives of previous generations, they are critical and want to see the meaning and benefit of their actions.

A third important characteristic that should be considered when analysing the challenges related to the education of representatives of Generation Z is their attitude to education. Unlike previous generations, they do not equate learning with formal education, but rather with the process of processing a large amount of information received through various channels. In this context, for them the channel is more important than the content, and the main criterion for perceiving the received information as "interesting" and respectively valuable, is whether it is provided in a "pleasant" way (Bulgarian Center for Non-Profit Law, 2020).

Regardless of this attitude towards formal education, however, Gen Z sees life-long learning as a matter of course. Although they are pragmatic and have a realistic view of their future, their curiosity and inquisitiveness makes them constantly learn and develop. For this reason, they tend to engage in online learning in a way that none of the previous generations were, and often in parallel with their major attend various distance courses, seminars and practical workshops.

3.3.2. Major Generation Z challenges for educational institutions

On the basis of the core characteristics thus outlined, we can derive a number of challenges related to the process of training the representatives of generation Z.

The first main challenge is the choice of an appropriate approach to the education of the representatives of generation Z. In this choice, it should be taken into account that access to information at any time also forms a different attitude towards authorities in them compared to previous generations - they are much more inclined to question others' competence on the basis of their own search on the global web. At the same time, they expect from their teachers a high degree of tolerance, benevolence and understanding, as well as timely provision of feedback. They see in them not so much lecturers as "friends" who are able to advise and support them on the way to achieving their goals.

The second main challenge is related to the appropriate communication of educational goals and the motivation of learners to achieve them. Since the representatives of generation Z are more pragmatic and need to know what they are doing and why they are doing it, in order to ensure their activity in the learning process, it is necessary to clearly argue the connection between what is asked of them and the achievement of certain effect. To maintain their motivation, it is also essential to take into account their high need for recognition and support, the lack of which can be a strong demotivating factor.

The third main challenge concerns the teaching content. In this regard, it should be borne in mind that, regardless of their high degree of awareness, to successfully perform a given task, representatives of generation Z need a greater amount of knowledge and experience, compared to representatives of the previous generation. This means, respectively, that the educational content must be comprehensive and include a large volume of non-auditory information, while at the same time being sufficiently rich in the practical part. Since the cognitive abilities of Generation Z representatives are visual-kinetic oriented, their attention is unstable and they quickly lose interest, learning content should be presented through colourful and interesting forms, where emphasis is placed on memorization through hearing, movement and visual, instead of by reading.

The last challenge we focus on here concerns the assessment of Generation Z learners. Because they associate learning not so much with the acquisition of knowledge as with the acquisition of competencies that will help them achieve their personal goals, they expect the assessment system of their achievements to be flexible and allow them to express themselves and their creativity and individuality. Their expectations are also related to the provision of timely feedback, as well as a tolerant attitude and careful presentation of negative information.

3.4. CSR in Industry 4.0 management: step-by-step approach

The project purpose is to achieve the following results: outlining areas of complementarity with the topic of corporate social responsibility in the context of Industry 4.0 in specific subjects taught according to existing curricula; providing for country-specific information on the extent, level of coverage and implementation of the EU approach to corporate social responsibility on the changing economic environment due to Industry 4.0 in the field of student knowledge development; identifying shortfalls in current business and management programmes at universities regarding the challenges to corporate social responsibility; expanding the base for understanding and coping with the reality of the trends in internationalization, globalization and digitalization in the national and world economy; stimulating the entry of the academic staff and

students into contacts with various business entities; providing for support by specialists in corporate social responsibility to strengthen the prospects for setting social goals for businesses and transfer these ideas to graduates; increasing the attractiveness of dealing with the social economy and social entrepreneurship in parallel to achieving the main business goals; providing for a practical support tool for university professors working on corporate economics to improve their understanding of the need to introduce emerging aspects of corporate social responsibility and further develop students' knowledge in order to prepare them for the complexity of the globalizing economy; encouraging the exchange of views on obstacles to the further integration of the topic of corporate social responsibility in the context of Industry 4.0 and on the improvement of training programs; developing a multilingual online platform for the exchange of knowledge, advice and feedback; expanding learners' understanding and skills in areas such as digitalisation, successful employment, active citizenship, social inclusion, equal opportunities and personal change management.

The overall implementation of the project is designed in the following three main phases (See Figure 3.3.):

- Phase 1. Competence framework and curriculum (IO1);
- Phase 2. Training course on the impact of Industry 4.0 on CSR (IO2);
- Phase 3. Lecturer's manual with support set (IO3).

Figure 3.3: Phases of the project management



**Competence framework for
CSR in Industry 4.0**

Output 1 will develop existing views and enhance the generic CSR competence framework describing responsible business behaviour and encompassing, knowledge, skill, and attitude.



**Training course on the im-
plications of Industry 4.0 on
CSR**

Output 2 will create a training course on the implications of Industry 4.0 and nearing challenges to the overall performance of enterprises as well as on the social impact of business activities.



**Lecturer's Manual with sup-
port set**

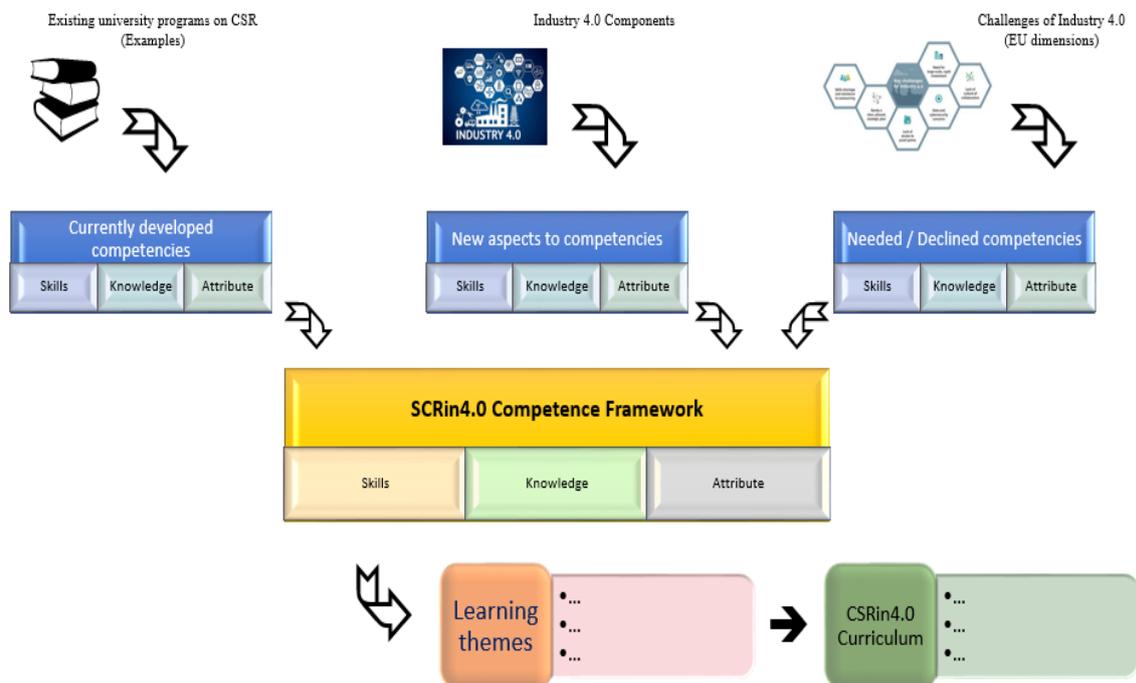
Output 3 will create a "Lecturer's Manual" in all languages of the partners involved. This output will provide lecturers with the material needed in order to ensure the didactical and methodological base required to deliver the course and to facilitate the structuring of the lessons.

Each of these phases comprises a package of activities for the development of methodological material or training content related to its name. The

implementation of the first phase of the competence framework ended with the execution of the following activities: - Review of the available methodology; - Question sets creation (3 packages); - Survey among lecturers; - Survey among students; - Survey among business experts; - Data analysis; - Development of the competences framework; - Development of the curriculum; - Adaptation of the national versions of the partner organisations; - Consultation and collecting feedback.

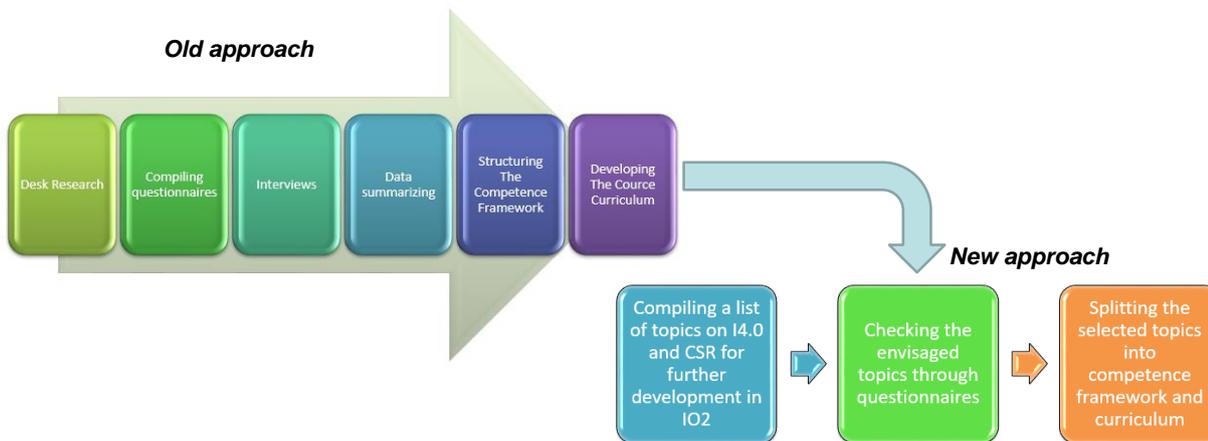
During the implementation of the actual activities for the preparation of educational content, the project team also performed such activities for management and for ensuring awareness and publicity of the results and the funding received from the EC. The project has its own website (<https://csr-project.eu>) and a Facebook page (<https://www.facebook.com/CSRin4.0>). The CSR in Industry 4.0 curricula is divided in two major parts: theoretical and case-study orientated. The step-by-step approach for the stage follows the activities: - Designing the sections of the course; - Analysis of educational needs; - Selection of materials for introductory training; - Development of detailed structure of the topics and lessons; - Adaptation of learning excerpts; - Development of educational content on relevant topics; - Adaptation and final edit work.

Figure 3.4: Involving Industry 4.0 challenges into the CSR framework



The content and responsible partners of the curricula as IO1 output and the textbook as IO2 output are as follows (See Figure 3.5).

Figure 3.5. Old versus new approach for academic CSR teaching under the technological challenges of Industry 4.0



On its completion the project has achieved the following results:

- Identification of the shortfalls in current business and management programmes in universities regarding the challenges to CSR.
- Creation of a solid base for understanding and coping with the reality of internationalization, globalization and digitalization trends in national and world economy.
- Stimulation of entering the academic staff and students into contacts with business entities.
- Provision of support by CSR specialists towards strengthening the perspectives of setting social aims to the enterprises and transferring these ideas to the graduates.
- Enhancement of the attractiveness of dealing with social economy and social entrepreneurship in parallel to achievements of mainstream business goals.
- Offered a practical supporting tool for university professors working on economy of corporations in order to ameliorate their understanding of the needs for embedding newly appearing traits of the CSR and further development of students` knowledge in order to prepare them for the complexity of the globalizing economy.
- Supported exchange of views on obstacles towards smooth integration of the topic on CSR in Industry 4.0 and suggestions regarding enhancement of the training programmes.

The project active dissemination activities include:

- Identification of direct end users, beneficiaries, and stakeholders (as stated above starting from the pre-proposal stage). Each partner will

compile a portfolio of national key actors and stakeholders, who would be interested to obtain the information about the project and the final project results. Those key actors will be informed by regular mails and releases as they can be invited to various face-to-face events. Each partner will develop a dissemination actor set consisting of representatives from the above-mentioned groups.

- Cooperation with the above-mentioned target groups, beneficiaries, and stakeholders on a daily base and at exclusive events
- Presentation and provision of products for potential users and stakeholders. Most of the partners are part of wide national networks supporting efficient dissemination and implementation of results and products.
- Introduction of the outputs in the dialogue in the wider education sector and with associations for business development via presentations of results on symposiums, topic-related working groups, community work etc.
- Presenting the final outcomes at a multiplier event and seeking for exploitation and mainstreaming of all intellectual outputs of the project.
- Dissemination conferences involving representatives of relevant stakeholders in each partner country.
- Strategic dissemination of all outputs at pre-selected conferences and symposiums (incl. those organised by EU institutions) and operationally within educational institutions.
- Preparation of project leaflets and roll up banners in all partner languages to be distributed together with the Power-Point project presentations among the target groups and stakeholders.
- Development of the project interactive website as a technical dissemination instrument (both transnationally and nationally). Linked with variety of partner organisations, it will ensure a broad basis for dissemination and will enable accessibility and usage of results (as e-resources under IO1-3) by the target group. It will provide lasting opportunity for professional dialogue and share of information.
- Maintaining the project platform till at least 2026.
- Seeking collaboration with European umbrella educational organisations and relevant networks.
- Issuing of dedicated releases regularly to mass media (newspapers and websites, magazines, radio /TV stations), mainly in connection with the TPMs, multiplier event and piloting phase.

The passive dissemination activities are planned for realisation through attendance and dissemination of the project outputs on appropriate related meetings,

educational fairs and conferences of other institutions where leaflets and banner will be exhibited.

Dissemination activities beyond the project lifetime - The project website and the networking platform (part of the IO3) are a public information source which will offer project results and outcomes for free of charge use and for further developments after the project end. The website will be linked to partner's organisational websites while the exchange and networking platform will be available on open science base.

3.5. CSR and Covid-19 pandemic

Corporate social responsibility is a topic of many research papers in which a consensus has been reached in terms of priorities for development of companies, society and households. In situation of the Covid-19 pandemic the CSR policies applied by the companies acquire a new content. Volunteering, helping victims of the disease, providing scarce medical supplies are just some of examples of initiatives for which there is evidence from all around the world. Nevertheless, CSR has its own clear philosophy and politically accepted understanding. In different countries, national strategies with well-defined goals and priorities for corporate social responsibility have been adopted. On 25th of November, 2009 the Council of Ministers of Republic of Bulgaria adopted the first 5-year national strategy for CSR (www.csr.bg). A few months before China reported the first Covid-19 cases, the Bulgarian government adopted a third 5-year CSR strategy. During the pandemic, despite of the otherwise well-formulated eight key areas for implementation of the strategy, many good practices of corporate action in the context of CSR have been identified.

Corporate social responsibility has imposed a new model of corporate culture and corporate goal setting for three decades. In this model profits (manager's goal) and wealth (shareholder's goal) are integrated into a common strategy for public balance and assessment of the impact of the company's business on the environment, public relations and sustainable development. Thus, the classical understanding of the turnover of cash flows in the economy related to the creation of GDP and the role of government, companies and households acquires new medium- and long-term dimensions (Terziev, Zahariev, Pavlov, Petkov, & Kostov, 2021b). Businesses begin to adapt to the new environmental requirements for a low-carbon economy. The standardization of company processes according to ISO already includes many new requirements and integration of environmentally friendly resources in the production processes. Biodegradable materials are replacing traditional products in the packaging industry and disposable items. With the change in culture and technology of production a new environment is being

created in relation to human resources that accepts investments in human capital as a continuous process (long-life learning), which is a responsibility of the individuals, the companies and the society (Zahariev, 2012).

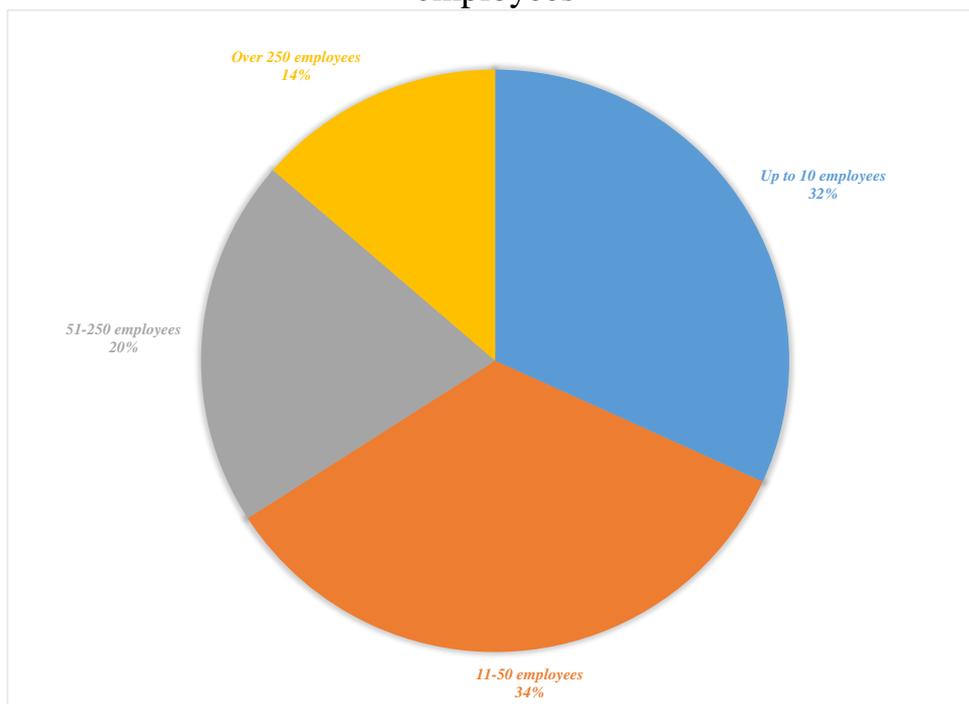
The crisis with Covid-19 turned the attention of government and business management back to the workforce (Zahariev & Zaharieva, 2003), its health, safe working conditions and flexible working hours (Terziev & Ivanov, 2020). After many measures in various businesses the traditional workplace has become digital, remote and functioning in a changing and epidemic environment. The education system itself switched to a distance learning mode (Zahariev, Ivanova, Angelov, & Zaharieva, 2021c). The application of lockdown in the HoReCa sector (Flew & Kirkwood, 2020) caused many problems with the labour market and employment. Governments have implemented various measures to support business and preserve jobs (Bogdanova, 2019) and the restoration of supply chains (Laktionova, Dobrovolskyi, Karpova, & Zahariev, 2019). Traditional industrial sectors such as energy and mining have also been put under pressure (Deneva & Grasic, 2020). European Commission logically derogated from public debt and deficit limits in spring 2020 (Zahariev, Radulova, Aleksandrova, & Petrova, 2021a) in favour of resource-providing policies to address the negative effects of Covid-19. The European Central Bank (Zahariev, et al., 2020c) allowed the central banks of the Eurozone and EU member countries to implement mechanisms for deferring the maturity of loans, which naturally led to liquid business support, but also reduced the profits of commercial banks. The insurance sector (Zahariev, et al., 2020d) also suffered some damage that changed traditional actuarial models and life insurance plans. Nevertheless, the biggest pressure from the pandemic was on the health system and the related social consequences and behaviour of companies in the context of the CSR philosophy (Antwi, Zhou, Xu, & Mustafa, 2021).

The Covid-19 pandemic has also been taken on a purely national dimension. The individual countries differ in the capacity to treat patients and human resources such as doctors and nurses (Adamov, Kolev, Vrachovski, Zahariev, & Marcheva, 2010), incl. in the system of ICU departments in the hospitals. The possibilities for testing, the reliability of the tests themselves (PCR and antigenic), the waves with separate variants of the virus made the epidemic the number one topic in public life. Following the scientific discoveries in the field of Covid-19 vaccines in the European Union, a centralized approach was adopted to supply vaccines in sufficient quantities to all citizens of the community. Bulgaria also received the necessary quantities of vaccines but for political and social reasons and a strong anti-vaccination movement ranks last in the EU in terms of number of vaccinated people (in % of the adult population) and first in mortality (per 1 million inhabitants) from the Delta variant of the virus (as of 01.09.2021). At the same time, the companies found themselves with various opportunities to support social causes in the conditions of Covid-19.

The present study has a national focus and aims to present the position of selected Bulgarian companies regarding Covid-19 and the role of business in integrating the philosophy of CSR into the global battle to overcome the pandemic.

For the purposes of this research are selected 44 Bulgarian benchmark companies, divided into 4 categories (See Figure 3.6). The first category includes micro enterprises with up to 10 employees, which are mainly from the HoReCa sector.

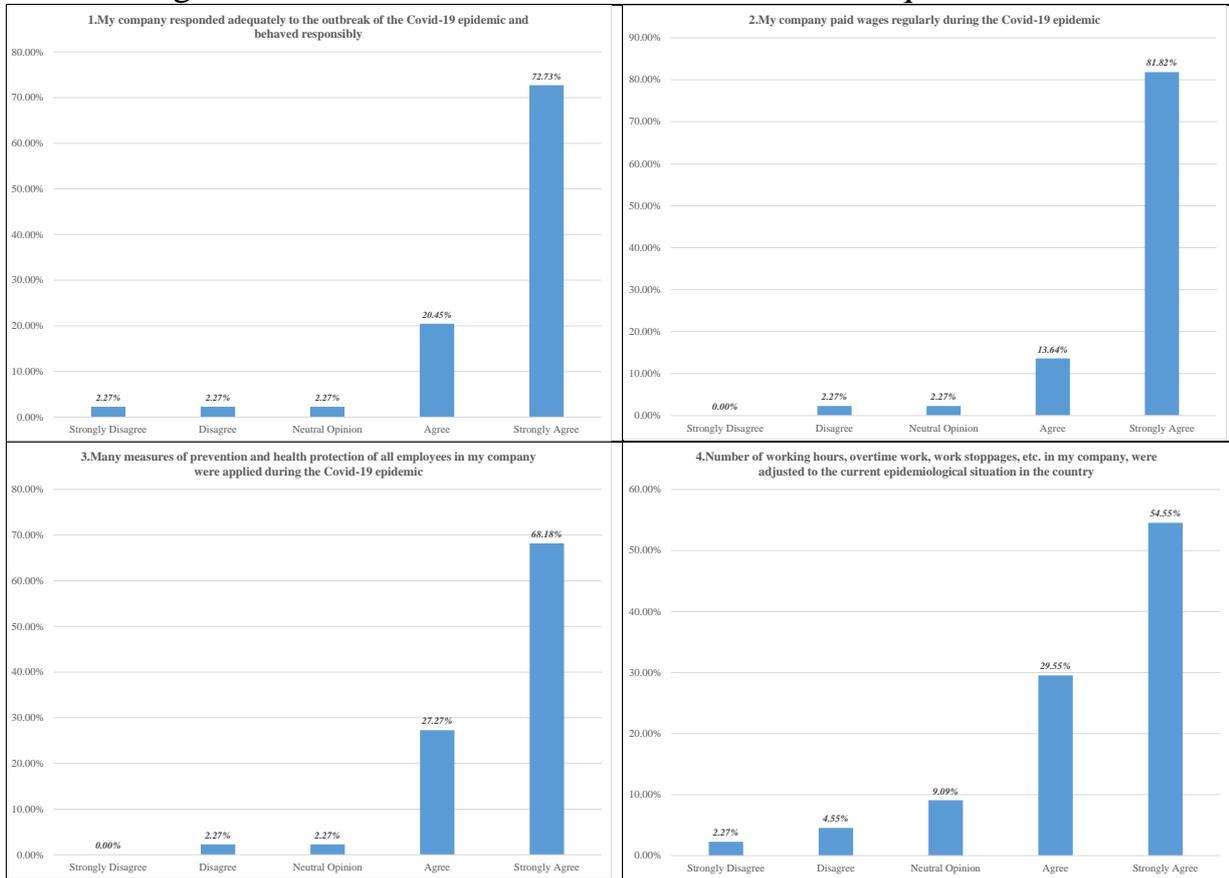
Figure 3.6: Distribution of companies in the sample based on the number of employees



The second category includes small enterprises with 11-50 employees (hotels and small production plants). The third category comprises enterprises with 51-250 employees, belonging to the insurance, manufacturing and pharmaceutical sectors. The last category includes large industrial enterprises, leading banks, insurers, and the Kozloduy Nuclear power plant (NPP). The surveyed companies in the fourth category manage assets worth over 10% of Bulgaria's GDP for the year 2021. The answers to the questions are grouped and are presented in three figures (Figure 3.7, Figure 3.8 and Figure 3.9). Each of them gives a distribution of the answers to 4 consecutive questions / statements directly related to CSR / Covid-19. In above-mentioned figures and Table 3.1 the individual answers are visualized and graded on a scale with five meanings, reflecting neutrality, moderate agreement / disagreement and strong agreement / disagreement with the formulated statement. The answers to the statements Q2 (My company paid wages regularly during the Covid-19 epidemic.) and Q7 (All employees are equal (no discrimination) in my company always (neither during nor outside the epidemic.) are of the highest

positive value from the array of questions with a mean of 4.75, followed by answer Q12, where the average is 4.70.

Figure 3.7. Likert scale distribution of answers of questions 1-4.

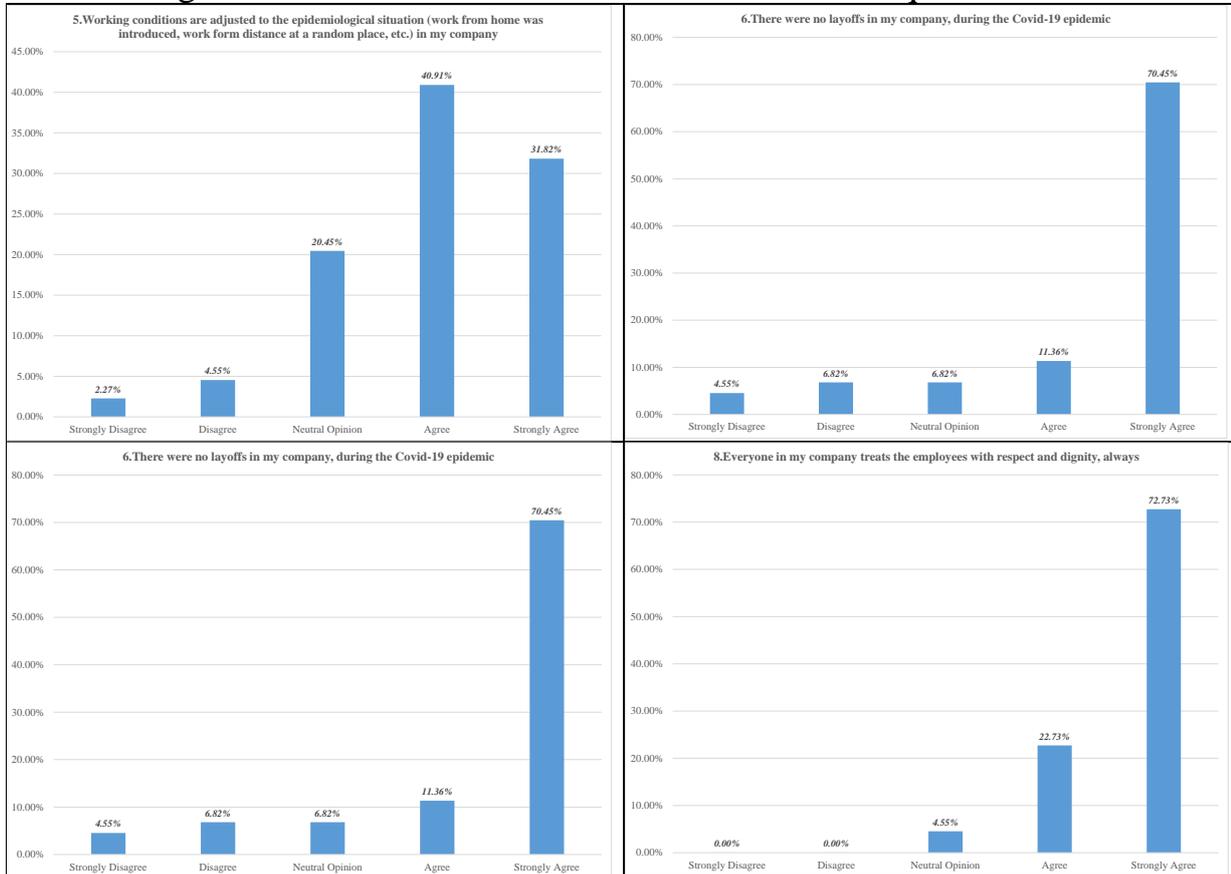


At the other end of the distribution of responses (where firms disagree or are neutral) are Q9 (My company has donated huge funds to procure various medical devices to help various institutions fight the virus.) with an average metric of responses of 2.64, followed by Q5 (Working conditions are adjusted to the epidemiological situation (work from home was introduced, work form distance at a random place, etc.) in my company.) at an average value of the answers of 3.95. Third ranks Q4 = 4.30 (Number of working hours, overtime work, work stoppages, etc. in my company, were adjusted to the current epidemiological situation in the country.).

The analysis of the deviations from the average in the sample using the indicators SD and CV shows that the lowest deviation from the average show questions Q7 (SD = 0.53; CV = 11.24%), followed by Q12 (SD = 0.55; CV = 11.76%) and Q8 (SD = 0.56; CV = 11.99%). These questions / statements practically confirm that the surveyed companies applied a policy towards their employees that is fully in line with the CSR statements and that despite the difficulties of the Covid-19

pandemic, they fulfilled a significant part of the commitments to commercial counterparties.

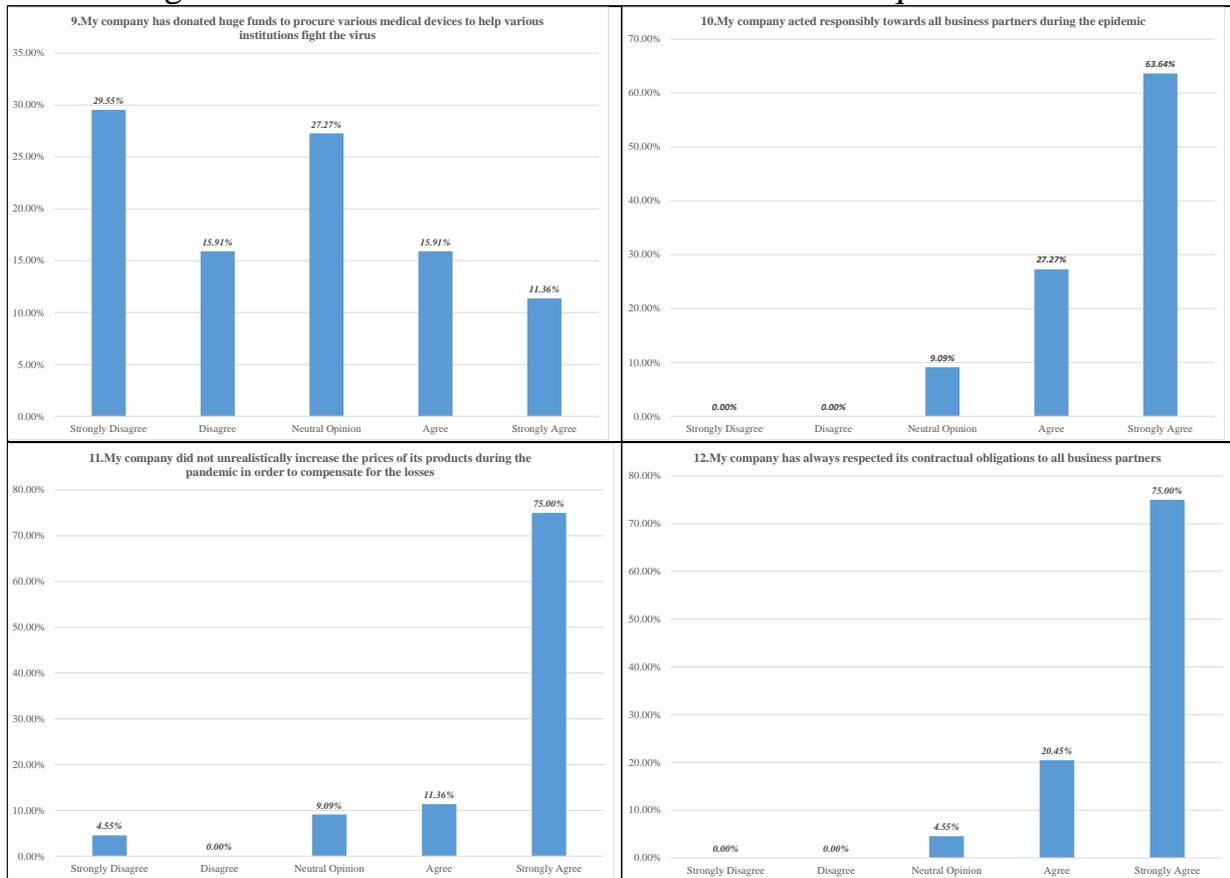
Figure 3.8. Likert scale distribution of answers of questions 5-8



From the point of view of the more critical / neutral response leading to the standard deviation indicator is Q9 (SD = 1.37), followed by Q6 (SD = 1.16) and Q11 (SD = 1.00). These responses confirm that in some cases companies have been in a position to refuse to support public causes related to donations during the pandemic (Q9), to lay off employees causing unemployment, and to adjust prices for goods and services to compensate shrinking market sales.

According to the indicator coefficient of variation (CV), the order of the most critical values of answers is Q9 (CV = 51.80%), followed by Q6 (CV = 26.66%) and Q5 (24.36%). The last question logically falls into this category in view of the impossibility in certain industries to apply work from home, work form distance at a random place, etc.

Figure 3.9. Likert scale distribution of answers of questions 9-12.



The current empirical study was conducted at the beginning of the fourth wave of Covid-19 in Bulgaria, caused by the so-called Delta variant. As of the beginning of September 2021 (see coronavirus.bg) the country reported total 462710 infected with the virus from March 2020 till now (67190 people per 1 million population), 19149 dead (2781 people per 1 million inhabitants), 4.345 million tests (631 thousand per 1 million population) and only 2.356 million vaccines were given to 1.200 million people with a completed vaccination cycle (17.44% of the population). At the same time, companies are strongly opposed to any measures to close businesses, especially in the HoReCa sector.

There is still a lack of clear and definite messages from the executive political authorities in view of the permanent pre-election process (The parliamentary elections on 04.04.2021 were followed by a second election on 11.07.2021, in both cases a government was not nominated and supported by at least 50%+1 of the members of parliament, third election in November 2021 and fourth election in October 2022).

Table 3.1: Statistical distribution of answers of Covid-19 survey among Bulgarian companies (August 2021)

N^o	Question / Statement	Ave	SD	CV
Q1	My company responded adequately to the outbreak of the Covid-19 epidemic and behaved responsibly.	4.59	0.84	18.39%
Q2	My company paid wages regularly during the Covid-19 epidemic.	4.75	0.61	12.94%
Q3	Many measures of prevention and health protection of all employees in my company were applied during the Covid-19 epidemic.	4.61	0.65	14.19%
Q4	Number of working hours, overtime work, work stoppages, etc. in my company, were adjusted to the current epidemiological situation in the country.	4.30	0.98	22.78%
Q5	Working conditions are adjusted to the epidemiological situation (work from home was introduced, work form distance at a random place, etc.) in my company.	3.95	0.96	24.36%
Q6	There were no layoffs in my company, during the Covid-19 epidemic.	4.36	1.16	26.66%
Q7	All employees are equal (no discrimination) in my company always (neither during nor outside the epidemic).	4.75	0.53	11.24%
Q8	Everyone in my company treats the employees with respect and dignity, always.	4.68	0.56	11.99%
Q9	My company has donated huge funds to procure various medical devices to help various institutions fight the virus.	2.64	1.37	51.80%
Q10	My company acted responsibly towards all business partners during the epidemic.	4.55	0.66	14.59%
Q11	My company did not unrealistically increase the prices of its products during the pandemic in order to compensate for the losses.	4.52	1.00	22.10%
Q12	My company has always respected its contractual obligations to all business partners.	4.70	0.55	11.76%
<i>Legend:</i> <i>1=Strongly Disagree; 2=Disagree; 3=Neutral Position; 4=Agree; 5=Strongly Agree</i>				



All this makes the country a unique social phenomenon for the EU, where political instability, high mortality Covid-19 rate and low vaccination rate correspond to the new culture and goals successfully implemented in companies, in the context of CSR!

Chapter 4. Strategic approach to corporate social responsibility

Introduction to the chapter

The chapter “Strategic approach to corporate social responsibility” presents the advantages of the strategic approach to corporate social responsibility and explains the process of corporate social responsibility strategy formulation. Firstly, the benefits of implementation of socially responsible activities in areas related to the activities of the company are discussed. In that line it is stressed that those activities attract the attention of potential consumers of the company and through greater demand for products and services improve the business of the company. The chapter also deals with the phases of the process of corporate social responsibility strategy formulation. In that line, phases such as: analysis of the environment, selection of the area of social engagement, determination of the vision and goals and anticipation of key activities and budget are analysed. This chapter also deals with the implementation of corporate social responsibility strategy. The implementation of the strategy implies moving the plans into activities and their execution in order to achieve the previously defined goals. In the attempt to explain the process of corporate social responsibility strategy implementation, the chapter deals with the process which comprises the following phases: translating the CSR strategy into concrete socially responsible activities, communicating CSR initiatives, decision-making and motivating employees, monitoring and controlling the execution of activities and collecting feedback.

In this chapter you will acquire knowledge and skills how to

- understand the benefits of linking socially responsible initiatives with the business strategy of the company;
- formulate a CSR strategy;
- conduct the environmental analysis as a phase of CSR strategy formulating;
- make a choice of area of company engagement in society;
- identify the groups of measures that should be the part of the company social responsibility portfolio;
- identify the activities that should be taken in order to implement the corporate social responsibility strategy;
- implement the corporate social responsibility strategy.

The chapter includes following sub-chapters

1. Advantages of the strategic approach to corporate social responsibility
2. Formulation of a corporate social responsibility strategy
3. Implementation of a corporate social responsibility strategy

4.1. Advantages of strategic approach to corporate social responsibility

The strategic approach of CSR implies that companies link their CSR programs with business strategy. The advantage of the strategic approach of CSR is that, in case of linking socially responsible initiatives with the business strategy of the company, managers usually choose the areas of engagement in social and environmental spheres closest to its activities. Thanks to that, huge benefits can be provided for the social community, because the company, in addition to material resources, gives the social community a huge intangible capital in the form of knowledge and experience of its employees, its social capital, brands and the like (Predić, Stefanović & Ivanović-Đukić, 2013).

At the same time, the implementation of socially responsible activities in areas related to the activities of the company, attracts the attention of potential consumers of the company and through greater demand for products and services improves the business of the company (Baron, 2001).

The strategic approach of CSR can be realized by introducing socially responsible activities into the business strategy of the company, so that innovations in the field of social responsibility become a way to differentiate the company from the competition and make a competitive advantage (Gooble, 2011). Another way is to formulate and implement a CSR strategy, which, in addition to innovative activities in the field of social responsibility, also includes anticipating a large number of different measures to improve value chain activities and a number of philanthropic activities (Boesso, Kumar, Michelon, 2013).

4.2. Formulation of corporate social responsibility strategy

Formulating a CSR strategy is a process of determining the goals to be achieved, defining key activities to be implemented in the future and making decisions about the allocation of resources needed to implement these activities. It includes the following phases: analysis of the environment, selection of the area of social engagement, determination of the vision and goals, anticipation of key activities and budget.

4.2.1. Environmental analysis

It involves an analysis of the external environment and the situation in the company itself (Muralidharan, 2004). The analysis begins with the situation on the procurement market (labour supply, characteristics of physical infrastructure, characteristics of administrative infrastructure, characteristics of information infrastructure, state of natural resources), because each of these elements has a reciprocal effect on the competitiveness of the company. Other segments that need

to be analysed are demand factors, such as: the size of the local market, the specificity and sophistication of the requirements of local consumers, the level of their awareness of the importance of social responsibility, etc. The third segment needed to be analysed is the presence of regulations, policies and regulations that encourage fair competition in the market. In an open competitive market, the presence of principles and norms that encourage free, fair competition, have a great impact on the relationship of competitive forces in the market and the productivity of resource used at the level of one region. Finally, it is necessary to analyse whether there are branches of support in the region (suppliers who offer quality resources, companies to which some jobs, clusters, etc. can be outsourced). The presence of branches of support can contribute in increasing the competitiveness of the company and the efficiency of its business.

The analysis of the external environment provides important information on in which spheres of society the most problems arise, what legal regulations are present in certain areas of potential company engagement, what is the reaction of stakeholders to socially responsible activities and the like. Also, an analysis of the external environment is needed to show what other companies, operating in the same local community, do in the field of CSR (Predić, Stefanović,, Ivanović-Đukić, 2013).

Then the existing CSR practice of the company should be analysed. This includes a detailed insight into all values, norms, documents, processes and activities of the company that are in any way related to its CSR, as well as their assessment (including mission statement, code of ethics, standards governing CSR practices, business processes and key activities) (Ganescu, 2012). The analysis of the internal environment includes the analysis of the value chain, resources and competencies of the company.

The analysis of the environment provides the necessary information base for the right decisions related to the choice of areas of social engagement of companies and predicting CSR measures in them (Wang, 2015).

4.2.2. Choice of area of company engagement in society

No company can solve all its problems or bear the costs of solving them. Therefore, it is desirable to choose only some problems that it can and wants to solve, and determine the social areas in which it will be engaged. When choosing the areas of social engagement, it is very important they are related to the company's activities (because the company has the necessary tangible and intangible resources which can be engaged in solving a specific social problem), that the community pays great attention to them, the company attracts public attention and gains trust in society)

and that the company can be engaged in solving its own problems for a longer period of time (Kotler, Lee, 2007).

Different techniques can be used to select areas of business engagement. One of the techniques involves analysing media coverage and expert statements. Based on this, various social needs that have not yet been met can be identified. The second method of the scenario is that the company predicts the effects that will occur if some activities are undertaken. Scenarios are developed based on the assumption of a change in a certain variable that is related to social needs.

Once the category and importance of each selected area of social engagement is determined - a CSR strategy is developed. Social responsibility strategy should provide the company with a competitive advantage while solving the selected problems of the social community.

4.2.3. Formulation of vision, social goals and strategic guidelines

First of all, it is desirable to create a vision-clear picture of how the company and the social community will look like after the implementation of the strategy of CSR. The vision serves as a general guide for the manager to direct the future CSR activities of the company, but also as an inspiration to key stakeholders to get involved and help implement some CSR, so the benefits for society are greater. In accordance with the vision, social goals are set as well the results which the company wants to be achieved by its engagement in solving the problems of the community (for example, the number of hungry children who will be provided with food, the number of homeless people who will get home, etc.) (Maon, Lindgreen, Swaen, 2015).

Based on the goals, a CSR strategy is formulated, i.e., a set of CSR initiatives and specific projects implemented in each of the selected areas of social engagement. By proposing all types of CSR activities, the CSR portfolio is structured (Predić, Stefanović, Ivanović-Đukić, 2009).

The social responsibility portfolio should include the following groups of measures: measures that solve general social problems, measures aimed at reducing the negative impact of operational activities of the value chain, social innovations that enable the company to gain a competitive advantage (Porter, Cramer, 2006).

The first group of measures includes various forms of *philanthropic giving*, corporate volunteering, promotion of social goals and social marketing. All of these activities contribute to improving relationships with the community and other stakeholders.

The second group of measures is aimed at *reducing and eliminating damages and problems that arise from performing activities within the value chain*. As each value chain activity leaves certain consequences on society, it is desirable for managers to analyse their impact in order to take adequate measures to improve them.

The third group of measures refers to the introduction of ecological innovations. This is the biggest challenge for managers. Eco-innovation is an innovative process of creating and introducing to the market new environmental technology, products and services that reduce the overall negative impact on living environment and enable business and innovation to create sustainable solutions together. By applying environmental innovations, the company can be largely differentiated from the competition, and at the same time significant savings can be achieved in business with better customer service (Stefanović, Ivanović-Đukić, Stošić, 2010).

By ranking and categorizing socially responsible activities, which the company plans to undertake, the basis for creating a portfolio of social responsibility is achieved. It can include a large number of different activities, from those that are least demanding, to those that lead to radical changes in business strategy.

4.3. Implementation of corporate social responsibility strategy

The implementation of the strategy implies moving the plans into activities and their execution in order to achieve the previously defined goals. Most generally, this process can be presented through the following phases: a) translating the CSR strategy into concrete socially responsible activities, b) communicating CSR initiatives, decision-making and motivating employees, c) monitoring and controlling the execution of activities and collecting feedback (Coombs, Holladay, 2012).

4.3.1. Translating the CSR strategy into concrete activities and their execution

In each of the selected areas of social engagement, a large number of different activities can be predicted and carried out in the long, medium and short term. There are different opinions on how many activities within one area are desirable. On the one hand, there are attitudes that as many different activities as possible should be chosen over a longer period of time because current social problems are changing. Opposite of them are the views that a small number of activities should be carried out, but repeated from year to year, in order to work diligently on solving

the same problem and for customers to connect the company with the same or very similar activities in the long run.

The implementation of the planned activities requires the creation of a team that will be responsible for the implementation of the appropriate CSR program and specific activities. Ideally, this team should include key "figures" of the organisation, such as: shareholders, i.e., members of the board of directors, top management, managers of those organisational sectors that are important for the successful implementation of CSR practice (e.g., human resources sector manager, financial affairs sector manager, public relations officer, etc.). In large companies, it is desirable to form permanent CSR sectors or departments (Ivanović-Đukić, Simić, 2012).

4.3.2. Communication of socially responsible initiatives

Successful implementation of CSR activities is possible if managers and employees, who will be involved in these activities, understand their importance. It is necessary to communicate with them, in order to raise their awareness of the importance of CSR for the company and society, and it is necessary to inform them about the planned work that needs to be realized.

To raise employee awareness, information on the presence, size and impact of the social or environmental problem that the company wants to solve can be used, but also acquaintance with international conventions and national regulations present in the chosen field, information on the behaviour of competing companies that are leaders in CSR and presenting the benefits that the company would bring to society and itself, the realization of these activities (Hemingway, 2005).

Continuous internal communication about the planned CSR activities and the achieved results contributes to raising the awareness of employees about the importance of CSR, increasing their enthusiasm for greater self-engagement. At the same time, it provides feedback to company managers on whether, and to what extent, the idea of CSR has taken root among members of the organisation, and what problems have been observed in the realization of this idea (Werre, 2003).

External communication to inform external stakeholders about planned and implemented CSR activities can be done through a website, by organising various forms of e-forums, through social networks (Twitter and Facebook, etc.). By communicating the CSR vision and key activities to stakeholders, the company tries to attract their attention and present itself as a socially responsible entity (Bloom et al, 2006).

For the implementation of the CSR strategy, an efficient system of making and approving decisions related to CSR is desirable. It is desirable that it includes top managers and board members (Government of Canada, 2006). The involvement of board members is a signal to internal and external stakeholders to pay close attention to CSR issues in the company. The role of top management is to bring elements of CSR into the organisational culture of the entire company, as well as its mission and key values. Lower-level managers should participate in making those decisions that, at the levels of their performance, ensure the successful transmission and implementation of decisions made by the top structure of the management body (Sachs, Ruhli, 2005).

Encouraging employees to get involved and work devotedly on CSR activities, in addition to active information, can be done by introducing various awards (tangible and intangible), setting a personal example by managers and colleagues, enabling the acquisition of the right to participate in business decisions, praise to employees who are most committed to CSR activities. The choice of managers who will be leaders in the implementation of CSR projects can also play a very important role (Hemingway, Maclagan, 2004).

It is necessary to have managers who are very responsible and who employees trust. If managers want others to trust them, they should: tell the truth, show respect, advocate for transparency, correct injustice, show loyalty, achieve results, strive to be as good as possible, face reality, clearly express expectations, express responsibility, listen first, be committed, broader trust (Covey, 2009).

4.3.2. Monitoring and control of the execution of activities and collection of feedback

The control of the social responsibility strategy is focused on the continuous collection of data on the implementation of individual projects and initiatives within the strategy. The aim is to determine which initiatives work well in practice and why, to ensure that these processes continue. At the same time, it is necessary to identify initiatives that do not achieve good results, determine the causes of failure and ways in which problem areas can change in order to overcome obstacles in the future. In this way, it is possible to continuously eliminate problems during the process of implementing the social responsibility strategy, which increases the success of achieving goals.

The evaluation of a social responsibility strategy is a periodic assessment of its relevance, impact and effectiveness in terms of predefined strategic and specific goals and measures. The evaluation re-examines the content of individual projects and activities, through which the entire strategy is implemented. Based on that,

conclusions can be made about the success of their implementation (Prennushi, Rubio, Subbarao, 2002).

The progress made in the implementation of the CSR strategy can be presented in the annual report on its implementation. However, in practice, progress reporting at the level of a specific CSR initiative is more common. Such reporting is conditioned by the requirements of stakeholders. This type of reporting is much more detailed and specific in nature than when it comes to annual reporting on the implementation of the CSR strategy. Creating an annual report on the implementation of the social responsibility strategy provides an opportunity to discuss achieved progress. In addition, there is an opportunity to discuss the actions that should be taken, in order to return the implementation of the strategy to the defined path, if there is a need for it.

To monitor the success of the proposed measures, it is necessary to establish a set of criteria that will represent standards for comparison, in order to control whether CSR activities have been carried out at the desired level, below the desired level or above it. In addition to the criteria for monitoring the success of the implementation of the proposed measures, it is necessary to determine the people who will be responsible for the proposed activities and who will compile reports and inform the top management about the achieved results in a certain period of time.



Part II. Case studies of CSR in Industry

4.0

Chapter 5. National evidences for implementation of the concept of CSR

National Federation of Employers of Disabled People, Sofia, Bulgaria

*Accreditation Council for Entrepreneurial and Engaged Universities,
Munster, Germany*

Fundacion Universitaria San Antonio, Murcia, Spain

University of Nish, Nish, Republic of Serbia

Chapter 6. CSR and Industry 4.0 - evidences from Spain

Fundacion Universitaria San Antonio, Murcia, Spain

Chapter 7. CSR and Industry 4.0 - evidences from Germany

*Accreditation Council for Entrepreneurial and Engaged Universities,
Munster, Germany*

Chapter 8. CSR and Industry 4.0 - evidences from Bulgaria

National Federation of Employers of Disabled People, Sofia, Bulgaria

Chapter 5. National evidences for implementation of the concept of CSR

5.1. Development of corporate social responsibility in Bulgaria

5.1.1. Institutional environment

During its meeting on August 28, 2019, the Bulgarian government adopted the Corporate Social Responsibility Strategy for the period 2019-2023. The development of the 2019-2023 CSR Strategy is in response to the government's political commitment to improve the quality of life of the population through transparent, socially responsible business practices and in implementation of the government's Management Program.

Members of the CSR Advisory Council, which includes representatives of social partners, the scientific community, the non-governmental sector and the state administration, provided active assistance in the development of the Strategy. Among the goals of the document are: promoting the sustainable application of transparent, socially responsible management and business practices, as well as stimulating the development of a policy of socially responsible management of enterprises with state and municipal participation and in public administration structures.

In developing the Strategy, the guiding principle is the voluntary implementation of activities in the field of corporate social responsibility (CSR). In its essence, CSR is a commitment on the part of company management to ensure that management decisions and daily actions take into account the specific interests of customers, suppliers, consumers, employees and the public located in the areas where the company operates, including in the field of the environment and all other entities to which its activity has a direct or indirect relation. A key prerequisite for the implementation of CSR activities and policies is the "Do good" principle, i.e., anyone who intends to implement CSR practices should, before proceeding to their implementation, have correctly fulfilled their legally imputed obligations.

Compared to the period of implementation of the previous Strategy 2009-2013, it should be noted that from a standard of business ethics, corporate social responsibility has become a successfully developing management model that is the basis of the global sustainable development policy. This necessitates expanding the scope of the Strategy to civil organizations and the public sector.

The problem areas faced by the main stakeholders and which this Strategy addresses are related to the modern extremely dynamic environment, characterized by rapid development of technologies, application of innovative approaches and solutions to problems in various spheres of life. On a global scale, the digital transformation is gaining momentum, resulting in different forms of employment emerging.

The effect of the development of digital technologies during this period should also be taken into account. The demand and supply of labour through online platforms is gaining more and more popularity worldwide. This fact presents new challenges to social security systems, tax systems, the implementation of fundamental principles of working conditions such as safe working conditions, employment stability, working hours, etc. The way to find a solution to these challenges is in direct correlation with CSR policies.

In a global aspect, the emergence of new forms of employment, incl. online platforms, the wide spread of fixed-term employment contracts, etc. is a challenge for social development as well. Unlike classic forms of employment, which imply long-term stability, regular pay, social protection, compliance with working hours, and the enforcement of norms for safe and healthy working conditions, new forms often lack one or more of these elements. This lack has an adverse effect on family planning, the ability to purchase a home or obtain credit. The solution to the new challenges undoubtedly goes through the search for a balance between employment flexibility and worker security.

The main stakeholders in the implementation of the Strategy are company management, the management units of public institutions, employees and employers. In a wider circle, to the directly interested we can add the users of goods, services and administrative services provided by the public administration, corporate clients and subcontractors in the chain with the whole circle of their system, social partners, civil and academic structures and last but not least – the environment and its adjacent ecosystems.

Across the broader spectrum of stakeholders, ethical choices and quick decision-making are increasingly required in a complex environment. Through socially responsible behaviour, business organizations and public structures facilitate the informed choice of the individual by turning this privilege into individual responsibility for the decisions made. Thus, reciprocal relationships of socially responsible behaviour are created and a culture of socially responsible supply, consumption and attitude is established.

Through the Strategy for Corporate Social Responsibility, the government will support the creation of the necessary prerequisites for the participation of all

interested parties - state and non-governmental institutions and organizations, businesses, social partner organizations, civil organizations, academic circles, media, etc., in the development and implementation of social responsibility policy and investments in socially responsible practices. The vision of the government's role in this process is the creation of supportive public policies and framework norms that enable the use of various instruments – legal, financial, informational, economic, etc., also in combination.

The Strategy builds on what was achieved as a result of the activities provided for in the previous Strategy for Corporate Social Responsibility with a time horizon of 2009-2013 and the plans for its implementation. As a result of its implementation, CSR gained recognition as an independent activity, outside of marketing and advertising campaigns. The view stood out that CSR policies need a long-term horizon and sustainability over time unlike charity campaigns and are not limited to sponsorship and donation contracts. It was also concluded that CSR policies do not only apply to corporate and company structures, but also have their place in public structures at the central and local level.

In the development of this Strategy, basic concepts and understandings of corporate social responsibility laid down in a number of EU normative documents, other international documents and good practices implemented by leading countries and business entities in the field of CSR have been taken into account. It is also built-in accordance with national strategic documents, the priorities of which are directly or indirectly related to the action guidelines outlined in this Strategy. It relies on guidelines and policy elements that have a longer-term nature and a longer period of manifestation such as building a culture of socially responsible behaviour and consumption, as well as raising awareness of socially responsible practices and activities. In its development, an approach based on good national practices in this area, systematized and analysed by the representatives of the Advisory Council on Corporate Social Responsibility created in June 2017 to the Minister of Labour and Social Policy, was applied.

The strategy covers the period 2019-2023 and is structured in separate thematic parts. Section I examines the main principles of CSR and the factors forming the need to develop a new strategy for the specified period. In Section II - Analysis of the situation, good practices and basic concepts for CSR in a national and European context are systematized and analysed, the challenges and barriers to the manifestations of socially responsible behaviour are indicated and the need to apply a strategic approach with the aim of wide-ranging implementation of CSR is justified. The vision, principles and goals of the Strategy, strategic goals and activities for their implementation, as well as the expected results of the implementation of the planned activities are presented in Section III. A vision for

the development of CSR. Principles and objectives. Finally, the last section IV deals with implementation, reporting, monitoring and financing.

For the period of operation of the Strategy, it is envisaged to achieve coordination with measures from other strategic documents in the field of human resources development, employment, demographic policy, environmental protection, education, etc. The national CSR strategy provides an anticipatory vision regarding future changes in the regulatory framework and practices of government bodies. It is a document that integrates sectoral policies and measures intended for their implementation. Due to the dynamic development of the CSR topic, an update of the Strategy is possible if there is a proven need, which implies its consideration as a dynamically developing philosophy and public agreement on the main aspects and essence of the topic. The responsible body that will coordinate the implementation of the Corporate Social Responsibility Strategy is the Ministry of Labour and Social Policy.

Some of the best and sustainable practices, activities and initiatives for CSR in Bulgaria are:

- Annual awards for responsible business of the Bulgarian Forum of Business Leaders;
- Annual competition for good practices and innovations from the activity of the administration, organized by the Institute of Public Administration;
- Annual Awards for Charity and Corporate Social Responsibility "Golden Heart";
- European Corporate Social Responsibility Awards "Inspiring Partnerships for Innovation and Change".

5.1.2. Level of population awareness or importance of corporate social responsibility

European forum and fair of social enterprises and cooperatives of people with disabilities

Type of practice: Development of social entrepreneurship, exchange of experience, increasing employment opportunities for people with disabilities and making business contacts. The social enterprise sector has an annual turnover of more than 50 billion euros within Europe. These events date back to 2003 - the European Year of People with Disabilities. Since 2012, NFRI together with other organizations of people with disabilities organizes an international event - European Forum, within the framework of the International Fair in Plovdiv, Bulgaria, where an international conference, a round table and a European fair are

held. This key event has come true thanks to the expressed support of the European Commission and the financial support from DG Enterprise and Industry in the person of Mr. Antonio Tajani - Vice President of the European Commission. This Forum was opened by Mr László Andor - Commissioner for Employment, Social Affairs and Inclusion. The other co-organizers of the event were the European Confederation of Production Cooperatives and Social Enterprises (SECOP), the Ministry of Labour and Social Policy, the Agency for People with Disabilities, the National Union of Labour-Productive Cooperatives, the National Federation of Employers of the Disabled, the Union of the Deaf in Bulgaria and the National Union of Cooperatives of the Disabled.

Main objectives

The general goal is to promote an active public position of the members of specialized enterprises and cooperatives of people with disabilities, their achievements in employment, in the process of integration into the social and public life of the country through participation in an international forum. In the long term, the goal of the projects to organize and hold National Exhibitions for specialized cooperatives and enterprises for people with disabilities is to overcome the weak awareness of society about the possibilities of people with disabilities. To overcome the negative opinion of employers, who treat with reluctance and mistrust the opportunities of people with disabilities to perform full-time work and realize earned income. By popularizing their activity, the integration of disabled people into the labour process is practically achieved, their rehabilitation and social integration is accelerated, and their socioeconomic status is improved.

Beneficiaries

A total of 74 social enterprises and cooperatives for people with disabilities from Bulgaria and Europe participated in the First Exhibition. Participants from Bulgaria were represented by 64 social enterprises and cooperatives. From Europe, the following participated: the non-governmental organization "Group 484" from Serbia presented its social economy network, uniting 24 organizations; the Association ANSPL from Italy - covers 893 cooperatives and 5 consortia with an annual turnover of 12.87 billion euros; an education agency from Tuscany, Italy - specialized in training, retraining and project development for new enterprises and cooperatives. As a continuation of this highly successful European initiative and in accordance with the implementation of the Commission's Social Entrepreneurship Initiative, the European Forum for Social Entrepreneurship continued to be organized annually in Plovdiv.

In the opinion of SECOP and the other European participants, as well as the Bulgarian NGOs and the government, this event is of increasing importance for the future. It is established as a place where EU policy, national policies meet directly

with the representatives of the real social economy, of social entrepreneurs from all over Europe.

Practice summary

The European fair is a message for the entire European Union that cooperatives, social and specialized enterprises for people with disabilities must be actively supported by implementing special programs to support this type of companies. Social enterprises and cooperatives of people with disabilities are extremely widely used in modern society, where business methods are actively applied to solve social problems. The European Fair of Social Enterprises and Cooperatives of People with Disabilities is an innovative model for strengthening specialized employment and workforce development. It is a kind of mechanism for social inclusion of people with disabilities. Provides opportunities for sustainable employment of people with permanent disabilities on the territory of the country, by popularizing their work and creating new contacts and business partnerships. On over 1,000 square meters of exhibition space in Bulgaria's most famous expo centre - "International Fair - Plovdiv" JSC, the products produced by people with disabilities are exhibited. The results of their work, demonstrated at the exhibition, become available to a very wide range of participants and visitors - state and public organizations, business firms and consumers in the country and abroad. We must note that such large-scale events are beyond the capabilities of individual specialized enterprises for people with disabilities. The enterprises participating in the exhibition are not only looking for a space for expression, but also purposefully looking for public recognition of the various goods and services offered by people with disabilities. The national associations and the specialized funds and agencies of the Ministry of Education and Culture provide irreplaceable help to them.

Within the framework of the project, an International Conference and a National Round Table are organized with current topics in the field of social economy. Representatives of various European institutions, governmental and non-governmental organizations participate in them.

Achieved results

Participation in the European Fair for Social Enterprises and Cooperatives for People with Disabilities activates all processes related to the implementation of the "Europe 2020" Strategy through efficient use of resources and increasing competitiveness, by increasing participants in the labour market. For people with disabilities, ensuring economic, social and territorial cohesion is of great importance. As a result of contacts with companies - exhibitors from other countries, including and EU member states, it is possible to accelerate the integration of specialized enterprises and cooperatives with leading Bulgarian and foreign companies for structural and technological renewal of production and expansion of markets and new partnerships. The specialized enterprises that took part will continue to work to accelerate innovation and the transfer of new

technologies and rational use of resources according to the EU standards. The promotion of the activities of the specialized enterprises among the public is also expected to achieve a beneficial effect on their sales, as well as on the sustainable employment and personal development of the disadvantaged people employed in them. Within the framework of the project, management and organizational capacity for planning and coordination of an international event was strengthened both within the enterprises and cooperatives - participants, and in the organizations that helped to realize the European Fair.

Effect and impact

The development of national exhibitions into a European Fair for Social Enterprises and Cooperatives for People with Disabilities will strengthen the attention of the governments of many countries to support the sustainable development of social enterprises and cooperatives for people with disabilities, promoting beyond the borders of each country the potential of these enterprises, the adoption and implementation of measures to create favourable conditions for the development and strengthening of international cooperation and the increasingly successful integration of people with disabilities into public life. In practice, the main tasks related to the accelerated integration of people with disabilities into the economic and public life of the country and their social inclusion, change in the type and method of communications, increasing the degree of awareness of society about the problems and opportunities of people with disabilities are being implemented, and implementation of programs aimed at solving these problems. The European fair of specialized enterprises and cooperatives of the disabled supported the development of social enterprises and the improvement of the social economy in Bulgaria and showed the good examples of integration of the disabled into the labour market. This forum helped to change the attitude towards people with disabilities and strengthen the social capital in the country. The added value of the project is expressed in increasing the social integration and personal realization of a large group of disabled people, improving the quality of their lives, increasing social credit and the financial results of the companies in which disabled people work. The inclusion of partners (public and private) in the process of developing and implementing such a forum as the European Fair of Specialized Enterprises and Cooperatives of the Disabled is of primary importance. The evaluation and recognition are currently high and this gives the organizers an incentive to do everything possible to continue the activity, because the motivation of institutions, organizations and enterprises of and for people with disabilities is great.

5.2. Development of corporate social responsibility in Germany

Corporate Social Responsibility is a well-known and thoroughly implemented concept that is present in almost all business agendas. CSR has many different definitions, with no single definition being accepted. Mathis (2004) attributes a definition of CSR through common themes and facts from multiple definitions, in order to create a tentative working definition:

CSR is the voluntary commitment by business to honour ethical values and respect people, communities and the natural environment. Business activities can affect the interests of all normative and derivative stakeholders (Phillips, 2003; BSR, 2004), including investors customers, and employees and are reflected in the company's policies and actions (Mathis, 2004).

Germany, as one of the most developed nations in the world, has earned a notable economic status even amongst other developed nations. A political and economic powerhouse, the nation incorporates a unique culture that maintains shared values inherent in the German 'social' economy (Hampden-Turner & Trompenaars, 1993; Trompenaars & Hampden-Turner, 2004). This mindset is fundamental to Germany's ability in ensuring a good product quality, employment and working conditions, the workers' active involvement, its developed public services and environmental protection laws (Berthoin Antal, Oppen & Sobczak, 2009). Subsequently, the country has enjoyed long periods of increasingly beneficial economic growth in both its domestic and international markets, stemming from its rich history of scientific and technological innovation that continues to push boundaries and increase its GDP (Gross Domestic Product) to this day (O'Riordan & Hampden-Turner, 2021). Yet, despite the country's immediate success and best efforts, Germany's corporate image has suffered in recent times due to the growing presence of various scandals that several German companies have been embroiled in. These problems, additional to the growing pressures of climate change, depleting natural resources, human rights dilemmas, and most recently the Covid-19 Pandemic and the Ukraine war, have put to question Germany's continued success and the responsibilities that are required from its economic and industrial sectors.

5.2.1 Institutional Environment

The degree to which CSR is institutionally integrated in the societal fabric has a significant impact on the degree to which social responsibility activities are adopted (El-Bassiouny & El-Bassiouny, 2018). Countries' political, legal, economic, and cultural factors establish the environment in which businesses function, which reflects on the "social roles" and the governance of corporations. Furthermore, as the institutional infrastructure paradigm focuses on both formal and informal rules

of governance arrangements, it allows a holistic view of the purposeful actions used to reshape CSR (Gegenhuber et al., 2022).

Traditionally, Germany has followed a model of stake-holder capitalism, which is disputed to be superior in comparison to many different kinds of CSR because of its inherent obligation to industry policy, rather than an attempt at gaining positive Public Relations (PR) or an ambiguous corporate white wash campaign (O’Riordan & Hampden-Turner, 2021). This traditional stakeholder orientation coincides with Germany’s image as a strong Coordinated Market Economy (CME) (Finegold et al., 2010) as opposed to the neo-liberal market economies that dominate the U.S. and the UK. A CME like Germany is heavily characterized by high levels of cooperation between the state, employer organizations, and organized labour as well as by relatively high levels of regulation in shaping the desired behaviour of different market participants (Fransen, 2013). It is also very important to consider the role that the European Union (EU) plays on the institutional environment in Germany, as the European Commission imposes strong coercive pressures through the regulation of standards and initiatives focused on boosting the spread of CSR practices (Furrer & Hotbrügge, 2018). The EU places a very strong emphasis on social issues, and has been actively participating and implementing CSR practices within its member nations through CSR Europe, which was set up through the European Commission in 2002 (European Commission, 2014)

The German institutional environment however, tends to put a more implicit approach in their CSR statements (Klossek & Nippa, 2008; Matten & Moon, 2004) as opposed to their U.S. counterparts who take a very active, explicit pursuit of CSR matters. However, this comparative difference is linked to the justification that U.S.-based companies are much more driven by shareholders and therefore justify their CSR-related expenditures for economic/financial means (Klossek & Nippa, 2008; Hartman, Rubin & Dhanda, 2007). Whereas, in Germany, stakeholder communication is the focus and there is a more sustainability-oriented approach and ethical line of thinking in their CSR doctrines (O’Riordan & Hampden-Turner, 2021). On the other hand, it can be argued that Germany puts more emphasis on CSR issues due to the dialogue maintained with stakeholders who have a stronger and long-term influence on the company (Finegold et al., 2010; Pfeffer & Salancik, 1978). Additionally, there is an increasingly active environmental movement in Germany through the involvement of the Green Party and various NGOs that increasingly put pressure on political institutions and corporate policies (Furrer & Hotbrügge, 2018). It is not without merit to mention the constant activity of labour unions within Germany that incentivise workers’ rights.

Just recently, the Federal Cabinet approved the 2016-2020 National Action Plan for Business and Human Rights on December 21, 2016. (NAP). The Federal Government establishes the responsibility of German firms along supply and value

chains in the NAP. The Act on Corporate Due Diligence Obligations in Supplier Networks legitimizes German firms' obligations to protect human rights in worldwide supply chains (CSR in Deutschland - Federal Ministry of Social Affairs, 2022).

5.2.2. Level of population awareness or importance of corporate social responsibility

Although CSR is a well-established idea, the public's awareness of a business's responsibility in tackling environmental issues including global climate change, renewable energy, and nuclear energy has increased. (Furrer & Hotbrügge, 2018). Certain scandals and disasters involving German firms have only heightened this awareness of the population to the necessity of CSR. For example, O’Riordan & Hampden-Turner (2021) highlight the unscrupulous practices of leading organisations emerge, including ADAC, Acandor, Schlecker, Mannesmann-Vodafone, MAN, and Siemens, among many others. They stand in the shadow of the ongoing critique regarding what has been termed “the largest industrial scandal in German history”: the Volkswagen (VW) diesel emissions fraud (Produktion, 2018; O’Riordan & Hampden-Turner, 2021). Various organisations exerted a crucial role in exposing the ‘Dieselgate’ scandal, as it is colloquially referred to, suggesting that bringing a major corporation to justice could be considered an achievement of civil society (Rhodes, 2016,).

Today's society increasingly expects firms to perform responsibly. Simultaneously, international standards have become increasingly demanding. The UN Human Rights Council, for example, approved the UN Guiding Principles on Business and Human Rights, and the OECD amended its Multinational Enterprise Guidelines in 2011 (CSR in Deutschland - Federal Ministry of Social Affairs, 2022).

Demonstrating concern for social and environmental interests is something that is inherently valued by the public opinion, policy makers, and thus may impact the valuation of the corporation as Klossek and Nippa (2021) highlight in their example of the use of the Dow Jones Sustainability Index (see <http://www.sustainability-index.com>). Many companies definitely benefit from high rankings in sustainability indices and avoidance of high rankings as major CO2 emissions, especially if such firms are regularly subjected to global media coverage or rely on strong global brands.

5.3. Development of corporate social responsibility in Spain

In Spain, as in other countries, Corporate Social Responsibility (CSR) management involves the recognition and integration into the management and operations of the organization of social, labour, and environmental concerns and respect for human rights that generate policies, strategies and procedures that meet those concerns.

The first Spanish contribution in the field of communication of organizations, bringing together and linking the concepts of public relations and Corporate Social Responsibility, dates from 1994: “Public Relations Actions: the foundation (García Nieto, 1994)”. In this work, the concept of corporate foundational entity as the institutionalized form of the exercise is linked to the social responsibility on the part of an organization.

In the field of business and CRS, since 2002, many Spanish companies have been proactive in adopting CSR, as well as its international standards and principles. Proof of this is the high number of companies that have subscribed to the principles of the Global Compact supported by the United Nations with respect to other countries. In this area, it should be noted that, in 2002, seven Spanish organizations started using the Global Reporting Initiative (GRI) framework to prepare CSR reports. A figure that in 2012 had risen to 180, and more than 500 from 2020 on. Large Spanish companies have also held –and hold- positions highlighted in the ranking of those indexes that assess performance in sustainability, even leading the world ranking of its sector. Along these lines, it is worth highlighting the Dow Jones Sustainability Index (DJSI) and the FTSE4Good Index.

From this perspective, Corporate Social Responsibility cannot be a mere marketing instrument, and the proper way to develop it is by integrating it into the global strategy of the company and apply it in day-to-day operations. In this sense, CSR actions linking companies and Public Administrations should pursue the following objectives:

- Reinforce the commitments of companies and Administrations Public with the needs and concerns of society, among which is the generation of employment.
- Contribute to reinforcing sustainable management models that help companies to be more competitive and public administrations more efficient.
- And finally, to promote those social responsibility programs that boost the international credibility and competitiveness of the Spanish economy, together with sustainability and social cohesion

5.3.1. Institutional environment

In Spain, the Public Administration has decisively approached the implementation of CSR in Spain, both in the public administration itself, and in its business network. It has participated actively and from a leading position in the actions that the European Union has carried out on this issue.

Work that concluded with the creation of the State Council for Corporate Social Responsibility in Spain, as a driving force for promoting all public policies in this area, and with the publication of the Sustainable Economy Law. In the private sector, there are numerous organizations of all kinds that work in favour of the integration of CSR in public and business management. The Spanish Global Compact Network is one of them.

Over the last decade, a number of public initiatives have been developed in Spain to promote the social responsibility of companies, in the General State Administration, as well as at the regional level, and from the autonomous community level. The first public initiative dates back to December 27, 2002, when the plenary session of the Congress of Deputies approved, within the Ministry of Labour and Social Affairs, the creation of a Technical Commission of Experts with the aim of drawing up a report on corporate social responsibility.

This initiative can be considered as the first of many that would be carried out over the next decade, where we would highlight the creation of the Forum of Experts on CSR in 2005, the creation of the ‘CSR White Paper’ in 2006, holding the first meeting of the Social Dialogue Table in 2007 or the publication of RD 221/2008 of February 15, which constitutes the State Council for Social Responsibility (CERSE in Spanish).

The State Council for Social Responsibility (CERSE)

Defined by the Ministry of Labour and Social Economy as the “advisory and consultative body attached to the Ministry of Labour and Social Economy, whose objective is to promote initiatives on corporate social responsibility, also proposing to the Government measures that pay special attention to the uniqueness of SMEs.” Constituted by Royal Decree 221/2008, of February 15, its creation allows the generation of a meeting forum between all interested parties linked to social responsibility. At present, this Decree is modified by the publication of RD 144/2021, of March 9, which introduces a series of measures in order to facilitate decision-making, through a consensus among the members present by simple majority.

Its composition falls on the Presidency and Secretariat of this body, divided between the Ministry of Labour and Social Economy, and the General Directorate of Self-Employed Work, Social Economy and Corporate Social Responsibility, together with 48 members, distributed in 4 groups of 12 (RD 144/2021). These groups correspond to business organizations, trade unions, bodies or institutions with a recognized presence in the field of CSR and public administration (both general and regional).

Therefore, we face a quadripartite and parity composition, since the gender perspective is introduced into its composition, through three specific actions: use of non-sexist language; inclusion, within the composition of the Council, of associations or organizations that work within the field of equality; and, lastly, to guarantee an equal composition between men and women in the structure of the Council.

Among the objectives pursued, we can highlight:

- Preparation and issuance of reports and studies, either, on its own initiative, or commissioned by the Government.
- Establishment of standards that seek harmonization in the publication of sustainability reports or CSR reports, by companies.
- Analysis of the evolution of CSR, both in Europe, Spain, and in third countries.
- Communicate the initiatives and public regulations on CSR that affect companies, organizations and public institutions.

The Spanish Strategy for Corporate Social Responsibility (2014-2020).

It is a document prepared by the Ministry of Employment and Social Security, in collaboration with other ministerial departments, the autonomous communities and local entities, through FEMP, with CERSE being in charge of its study; drawn up with the vision of “supporting the development of responsible practices in public and private organizations in order for them to become a significant engine of the country's competitiveness and its transformation towards a more productive, sustainable and inclusive society and economy.”

The document was drawn up with the purpose of promoting actions aimed at meeting a triple objective:

- Promote actions that seek to reinforce the commitments of companies and Public Administrations with the needs of Spanish society.
- Contribute to the reinforcement of sustainable management models in order for companies to be more competitive and public administrations to present greater efficiency.

- Promote Social Responsibility programs that promote the credibility and competitiveness of the Spanish economy, together with sustainability and social cohesion.

Figure 5.1: Structure of the Spanish Strategy for Corporate Social Responsibility 2014-2020

<u>PRINCIPLES</u>	<u>VISION</u>	<u>STRATEGIC GOALS</u>	<u>STRATEGIC LINES</u>
Competitivity	Support responsible practices in Public Administrations and private sector	Goal 1. Foster and promote CSR within companies, public and private institutions.	1. Promote CSR as a fostering element for sustainable companies
Social cohesion		Goal 2. Identify and promote CSR as competitive asset and education social cohesion.	2. Integrate CSR in training, and research.
Shared Value		Goal 3. Diffuse CSR values within society	3. Good governance and transparency to increase trust.
Sustainability		Goal 4. Create a common framework for the whole country.	4. Responsible HR Management
Transparency			5. Socially Responsible Investment
Voluntariness			6. Suppliers
			7. Responsible Consume
			8. Environment

This strategy, fulfilling its role as a common framework, defines a series of responsibilities for each actor in this socioeconomic context, where we can highlight:

- The responsibility of the Public Administration: Dissemination of CSR in society; ensure that this is assumed in a real way by the organizations; to ensure the progressive penetration of CSR in the productive fabric and to be clear examples of responsible entities in their spheres of influence.
- The responsibility of companies: Adapt the CSR strategy to the characteristics of the company and its socioeconomic situation; maintaining a strong and fluid communication channel with its stakeholders; contribute

to sustainable development through a commitment to innovation and good practices.

- The responsibility of the Company as a whole: Be aware of your role as a consumer or investor; contribute to caring for the environment by carrying out actions focused on recycling, energy saving or waste production.

Therefore, this strategy elevates CSR to a key element for: a) society in general; b) public administrations; and c) all types of companies or organizations.

5.3.2. Level of population awareness or importance of Corporate Social Responsibility

The Spanish business community remains firmly committed to Corporate Social Responsibility. This is reflected in the evolution of the number of CSR projects undertaken by our companies: they have tripled in the last seven years - from 4,500 initiatives in 2013, compared to almost 13 thousand carried out in 2019.

In 2020, this commitment to the social dimension has been accentuated. This year, in which the health crisis caused by Covid-19 has challenged political and economic systems around the world—as well as society as a whole—has once again highlighted the commitment and responsibility of companies to the most vulnerable groups.

In fact, according to the VII Corporate Social Impact Report, 96% of Spanish companies have developed close to a thousand projects linked to the fight against Covid-19 in areas such as health and social welfare, education or strengthening the entities most affected by the pandemic. In total, it is estimated that they have benefited 10 million people in Spain.

Education, employment and health: main sectors impacted by CSR projects

Spanish companies have paid special attention to social projects, covering basic needs, which account for 86% of the total number of initiatives (9,095 projects). These include projects related to education, employment and health. In fact, more than 70% of the companies report having carried out at least one project in one of these three areas in the last year.

Moreover, compared to the last edition of the Seres-Deloitte report, programs relating to health and social welfare have gained prominence, representing 30% of the total (21% in 2020). Similarly, projects relating to employment have also skyrocketed this past year: seven out of ten companies have undertaken this type of initiative, 40% more than in 2020.

During the state of emergency, due to Covid-19, the health and social welfare sectors, together with the education sector, accounted for most of the dedication and effort made by companies: 85% of all CSR initiatives (974) corresponded to projects in these three areas.

As for the groups impacted by the CSR projects undertaken by the 76 companies participating in the report, a total of 57 million beneficiaries were identified, including people at risk of exclusion, who accounted for 52% of the total. This year, people with disabilities and women are also the main target groups on which companies have focused their CSR projects.

In addition, it is noteworthy that the outbreak of the coronavirus crisis has oriented the strategy and focus of CSR projects towards supporting and encouraging the groups most impacted by the pandemic: healthcare professionals, clients, patients, immigrants and people at risk of exclusion, students and employees, among others.

Employee: an essential asset for the social impact of the organization

Employees are increasingly committed and aware of the positive impact that, through volunteer programs, they can have on the most vulnerable groups, as well as on the environment.

In 2019, according to the SERES-Deloitte report, more than 184,000 employees were actively involved in CSR projects. In fact, 80% of participating companies offered their staff the opportunity to join corporate volunteering teams.

The number of volunteers has also grown exponentially since 2018, currently standing at 167,741 employees, which means a growth of 22% and represents 10.1% of each company's workforce.

It is noteworthy to highlight that during the months following the beginning of the state of alarm in March, the work of volunteers in the face of the pandemic was fundamental. Hundreds of programs and action plans were launched by companies in which employees could participate, contributing an exemplary dose of solidarity. According to the SERES-Deloitte report, during the first wave of the pandemic, more than 102,000 hours of volunteer activities were carried out, in which 16,205 employees from 70 Spanish companies participated.

A good example of a volunteer project during this crisis can be found in "Ayudar en todo lo que podemos", developed by Correos (Spanish public post service). The 3,100 volunteers of the state-owned company collaborated to deliver 900,000 kilos of food to the groups most affected by the pandemic, as well as to the professionals who were carrying out essential tasks.

Collaboration as a driving force behind CSR initiatives

CSR projects carried out by Spanish companies in 2019 have generated more than 24,000 collaborations with social entities. This relationship between different socioeconomic agents allows the social impact of the CSR initiatives developed to be expanded, enabling the entry of new lines of financing and contributing, at the same time, to building a more cohesive economic and social environment.

Exemplifying the relationship in data, the number of collaborations between the companies participating in the VII Seres-Deloitte Report has quadrupled since 2014, going from 76 collaborations with other entities on average per company, to 318 in 2019. Furthermore, in terms of financing, the consolidation of these strategic alliances has allowed us to raise €83M in additional investment to the budget initially allocated to CSR projects.

In addition, collaboration between companies to fight the pandemic has intensified during the state of alarm. In fact, according to the SERES-Deloitte report, a total of 6,065 entities have been identified in this period as being involved in specific projects against Covid-19, undertaken by 70 Spanish companies.

Investment in CSR projects in Spain has tripled since 2013

Investment in initiatives with social impact in Spain has reached €1,429M in 2021, a figure that has tripled in the last 8 years (€457M in 2013). In relation to the economic traction generated through the implementation of CSR projects, it is worth noting that a large part of the companies' investment is made internationally: 76% claim to carry out CSR activities outside Spain, accounting for 62% of total investment.

With regard to investment aimed at alleviating the negative economic and social effects caused by Covid-19, the companies analyzed in the report invested a total of €281M in projects in the areas of health and social welfare and financing and strengthening of entities, among others.

5.4. Development of corporate social responsibility in Serbia

5.4.1. Institutional environment

CSR institutional context – national conditions, traditions and attitudes

Corporate Social Responsibility (CSR) means that companies on a voluntary basis integrate social and environmental principles into their business and behave ethically towards all stakeholders. Since there are different explanations about the principles that should be included in the company's business and what obligations it has towards the society, there are different approaches to this concept. However, some of the most accepted CSR concepts are: the Carroll's pyramid of CSR and Triple Bottom Line. Carroll believes that companies have: economic, legal, ethical and philanthropic responsibility, which he presents in the form of a pyramid. According to the Triple Bottom Line, the responsibilities of the companies are triple: making a profit, ethical behaviour towards employees and the society (people) and voluntarily solving ecological problems and caring about the environment (planet).

The European Union attaches great importance to the promotion and implementation of the concept of CSR because it can have a positive impact on achieving its strategic goals, so that the EU becomes the most competitive and dynamic, knowledge-based economy in the world. The EU Commission in "Green paper" (2001 and 2005), defines CSR as a set of activities of the company aimed at fulfilling legal obligations defined by law and contracts. However, CSR is also seen as activities by which the company fulfils obligations that do not arise only from the formal legal framework, but as investing in human capital development, environmental protection and improving relations with all stakeholders. According to this report, socially responsible behaviour has an internal dimension, which is responsible management of human resources, ensuring healthy and safety working environment, responsible adaptation to changes, rational use of natural resources to perform business activities and risk management, and an external dimension, reflected as responsible behaviour of companies towards external stakeholders (customers, suppliers, competitors, the state, strategic partners).

Serbia accepts the European approach of CSR and tries to follow the guidelines of the EU Commission related to the application of this concept in practice. Unfortunately, due to a large number of institutional and other problems, the results of the application of this concept in the country are worse compared to the EU average, especially in comparison with the leaders in this field. One of the reasons for this situation is the low level of awareness of managers in Serbian companies of the importance of the CSR concept and the lack of knowledge and skills for its application in practice. To change this situation, it is necessary to identify gaps and

work on improving educational programs that will enable the development of knowledge and skills necessary for the successful application of CSR in Industry 4.0. In this light it is essential to analyse the current situation in the field of CSR in Serbia, to identify the knowledge and skills that managers and experts in the field of CSR have and to propose a framework of desirable competencies.

Review on CSR RS view - national developments, theoretical base, legislation base

CSR is a relatively new and still insufficiently accepted concept in Serbia. This situation is influenced by numerous factors from the past, but also by the difficult period of transition to a market economy, political and economic instability and the like. First of all, the self-government that was present in Serbia before the disintegration of the SFRY made it impossible to develop modern corporate business and apply the principles of socially responsible business in practice. During the period of central planning, the state took care of social problems. The companies were also forced to do the same but only because of law. During the 1990s, due to wars, inflation, economic sanctions, bombing and other problems, there was general uncertainty in the market and in politics. This led managers and employees not to adhere to ethical principles in decision-making in the fight for mere survival, to very frequent violations of legal regulations and irresponsible behaviour towards interest groups. In addition, the state, burdened with numerous economic and political problems, did not pay much attention to the behaviour of companies. This led to the creation of an environment in which no one cared much about the consequences of their business on society and the natural environment, which caused the spread of already accumulated social and environmental problems.

CSR as a topic in Serbia has emerged after 2000. In the business sector, it arrived with the inflow of foreign capital and the opening of representative offices of foreign companies that brought their established CSR policies and practices to Serbia. At the same time, initiatives for potential cooperation and partnership between the two sectors emerged in the non-governmental sector. However, in public policies, the category and concept of CSR appeared as late as in 2006, in the National Strategy for Sustainable Development. The state then understood the importance of CSR and began to work on creating an institutional environment for its development and promoting examples of good practice. In that direction, a certain number of planning documents, strategies, action plans, programs, etc. were made. Some of those strategies are: National Strategy for Sustainable Development of the Republic of Serbia, Strategy for Socially Responsible Behaviour for the period 2010-2015, Strategy for Sustainable Urban Development 2020-2030, etc. However, a number of problems have arisen in the implementation of these strategies, so the results are not satisfactory.

The Sustainable Development Strategy was adopted in 2006. It is in line with the EU's Sustainable Development Strategy, the EU's Lisbon strategy and Serbia's EU accession strategy. Two action plans for the implementation of this strategy were also adopted (one in 2010 for the period from 2009 to 2017 and the other, which replaced the previous one, for the period from 2011 to 2017). The action plans of this strategy included only one project that was directly related to CSR - Introduction and implementation of the CSR system, which was planned for 2012 as a project to be implemented by the ministries for the environment and labour and social policy, Serbian Chamber of Commerce, companies and associations. However, for this project, the action plans envisaged neither total costs and sources of funding, nor performance indicators. Also, the Government adopted reports on the progress in the implementation of the Strategy only for 2009 and 2010, so it is not known whether and in what way this project was implemented.

In addition to the adoption of this strategy, a large number of other events that encouraged the development of CSR in Serbia took place. Chronologically, the most important moments are:

- 2006 - The Code of Business Ethics and the Code of Corporate Governance of the Serbian Chamber of Commerce were adopted, which established the basic principles and rules of business ethics. These principles and rules should have been binding for companies and members of the Chamber. Although the intention and the idea were very affirmative, and the codes were supposed to contribute to the affirmation of business ethics and CSR in Serbia, they were not widely accepted. The reason for that was found in the promotion that was not carried out at the highest level, so the codes expired in 2012.
- 2007 - Establishment of the Global Compact Serbia, i.e. joining the Global Compact, the largest voluntary association in the world dedicated to CSR. The initiator and one of the founders of the Global Compact in Serbia is the National Bank of Serbia. This association in Serbia now has over 90 members. By membership in this organization, all of the members have committed themselves to respecting the ten principles of the Global Compact in the field of protection of human and labour rights, environmental protection, the fight against corruption, and to their promotion.
- 2007 - The Balkan Fund for Local Initiatives established the annual VIRTUS Award for Corporate Philanthropy, as the first award of its kind in Serbia. It awards companies that set CSR standards with their financial and non-financial support.
- 2007 - The Serbian Chamber of Commerce established and awarded the national CSR award for the first time.
- 2008 - The Forum of Business Leaders of Serbia was established, which later changed its name to the Forum for Responsible Business, as a coalition of companies in Serbia that encourage the development of CSR. The forum

was established to connect business leaders with representatives of state institutions, international institutions, business associations and the civil sector.

- 2009 - the Council of the Serbian Chamber of Commerce for CSR was formed.

In accordance with the EU's position that CSR is one of the essential elements of the European social model and positively contributes to the European growth strategy „Europe 2020“ as an indispensable part of the solution for "smart, sustainable and socially inclusive Europe", Serbia has adopted a Strategy for CSR Development and Promotion for the period 2010-2015. The strategy defined three goals: promoting the concept of CSR, developing CSR practices and creating incentives and legal obligations that would ensure the development of an environment conducive to the spread of CSR. The role of government in such a comprehensive vision was the implementation of the measures that would create an environment appropriate for encouraging development, inclusion and sustainability. Most of the measures envisaged by the Strategy related to the promotion and development of CSR practices, and a smaller part to initiatives for changes in regulations and public policy measures.

In the line of promoting existing CSR practices, the awarding of prizes by the Serbian Chamber of Commerce for the most responsible company in a given year and VIRTUS awards continued. However, since these measures do not have sufficient media support, it could be concluded that the state is not paying enough attention to them. In order to achieve the goal of improving the practice of companies in the field of CSR, the team of Deputy of Prime Minister for the implementation of the Poverty Reduction Strategy and the Agency for Foreign Investment and Export Promotion, implemented a project of developing a database of good CSR practices in 2007. However, this database did not include data on CSR of small and medium enterprises which participate with 99% in the economy of Serbia. This database has not been revised to date, so it leaves the impression of the state's lack of seriousness in the actualization of this area.

In order to achieve the goal related to the creation of incentives and legal obligations for companies, a number of legal regulations have been adopted, such as: "Law on Money Laundering", "Law on Finance", "Law on Environmental Protection", "Law on Integrated Prevention and Pollution Control", "Law on Strategic Environmental Assessment", "Law on Professional Rehabilitation and Employment of Persons with Disabilities", "Law on Conflict of Interest", "Law on Financing of Political Parties", "Law on Free Access to Information of Public Importance", "Law on State Audit Institution", „Law on Consumer Protection“, etc. However, consistent application of these laws has not been ensured. One of the reasons for this is the problems in judiciary present in Serbia (a large number of

abuses in resolving disputes, courts are overwhelmed with cases, appeals usually last more than a year, hearings in the largest and busiest courts are often scheduled twice a year, etc.). As a result of this situation only small number of entities that do not comply with the law bear appropriate sanctions.

Due to numerous omissions and problems, the CSR Strategy received a large number of objections related to the formulation of the Strategy, as well as to its implementation. Regarding the concept of the Strategy, the key objections are the following: a) does not take into account the real current situation based on research and reliable statistics, b) does not provide a complete organizational solution for the body which will implement the strategy, as well as the necessary resources, sources of funding, accurate responsibilities, c) does not provide precise measures and indicators for monitoring and evaluation of the results of the implementation of the strategy.

The problems in the implementation of the CSR Strategy are even more serious: an appropriate network of state bodies has not been formed that will work in an organized manner on the implementation of all these programs and monitor the success of their implementation, as is done in EU countries. Only in January 2012, the "Action Plan" for its implementation was adopted. The "Action Plan" envisages that the implementation of this strategy will be the responsibility of the "Ministry of Labour, Employment and Social Policy of the Republic of Serbia", and it is entrusted to the "Council for Development and Promotion of Social Responsibility", as a special body within the Ministry. Specific tasks were assigned to the "Implementation Team", which would consist of representatives of the public, private and civil sectors. The key problem is that after the elections (2012) there were political changes, so the implementation of the "CSR Strategy" has not even begun.

5.4.2. Level of population awareness or importance of corporate social responsibility

CSR institutional context – awareness

The concept of CSR is relatively new for Serbia, which is starting to be promoted during the last 2 decades. In the period from 2001 until today, the awareness of the population about the need for CSR, as well as the knowledge of this concept, has gradually increased. However, the majority of Serbian citizens still do not fully understand the essence and significance of this concept, so they do not attach much importance to it.

How Serbian citizens perceive the concept of CSR and what they expect from companies (how they see their business and how much social responsibility

influences their choices when buying or hiring) was analysed in the research of "Smart Collective" and "Ipsos Strategic Marketing" 2005, 2008, 2010 and 2013, by surveying citizens from all parts of Serbia. These studies have shown that the citizens of Serbia - as consumers, employees and members of the local community, are aware of the impact companies have through CSR on their quality of life and are ready to support the development of new business models based on care for a particular social goal or for society as a whole. In the opinion of the most Serbian citizens, the company needs to be responsible in various aspects of business in order to be considered socially responsible, which reflects their understanding of CSR as a concept in a way that it is much broader than philanthropy. Although citizens recognize companies as social actors who should work in the interest of society and demonstrate their responsibility through various aspects of business, a small number of citizens (only 16%) believe that companies are truly socially responsible. Citizens' attitudes about the responsibility of companies in Serbia in the areas they consider the most important for CSR (care for employees, consumers and the local community) have not changed to date and are currently extremely negative. This result can be partly explained by the great distrust in all social actors, including, for example, local self-governments, which only a slightly higher percentage of citizens consider to work in the interest of society.

Managers of Serbian companies also expressed an unsatisfactory level of awareness about the need for CSR. According to a large number of managers of Serbian companies, the state should take care of social problems, so they did not attach much importance to organizing business in a socially acceptable way. Even managers who considered CSR important for their company, mostly associated it with various forms of one-time financial assistance (sponsoring cultural, sports and other non-profit events, donating money or equipment to hospitals or humanitarian organizations that help vulnerable groups, etc.), because in the opinion of the managers of the most of companies, donations are the most visible form of CSR since the company benefits the most from them. Recent research shows that the level of awareness of company managers in Serbia about the importance of CSR has increased over the years. However, the attitude towards CSR has not changed significantly due to the irresponsible behaviour of public companies, which very often do not comply with legal and contractual obligations and set a bad example to other companies. They are also associated with high levels of corruption, unfair competition and other negative problems.

CSR - corporate policies and understanding, applicable regulations

The first research of the practice of companies in Serbia in the field of CSR (2007) showed that there are huge gaps compared to the EU. Extremely few companies in Serbia had CSR managers. In some of them CSR was left to the directors of foundations, while in all other companies these jobs were performed by public relations services. In addition, the results achieved in the field of CSR were

generally not included in the reports, but were transmitted to the public through websites or the media.

Observed according to the elements of the EU report for companies in Serbia, the greatest attention was paid to the engagement of companies in the social community. Most of the companies have developed single or periodic programs to support the solution of a social problem and only an extremely small number of companies (mostly multinational companies) have implemented CSR strategically. From the point of view of relevant stakeholders, protection of vulnerable persons and environmental protection are the areas that have attracted the most attention of companies in Serbia. This can be explained by the fact that in conditions of economic and social instability, which accompany transition, assistance to vulnerable people and a large number of interest groups is easily visible. In addition, a large number of companies provided support to education, art, culture and sports by sponsoring cultural, sports and educational events and the like. After the improvement of the social community, Serbian companies attached great importance to the protection of the environment. Many large companies have environmental standards (ISO 14001 or some of the specific standards for the industry branch or the company itself) but have implemented "ad hoc" programs.

All in all, the impact of the company's business on the environment in Serbia has been taken into account to a certain extent, but the effects are much weaker compared to the EU countries. To the internal dimension of CSR and business ethics, companies in Serbia attached much less importance compared to companies from EU countries. Problems of corruption are present in all its forms (from the commission sometimes paid for even the smallest business transaction, through money laundering, racketeering and pressure from "tycoons" and members of organized criminal groups). Bribery and corruption are deeply ingrained in corporate business practice and many Serbian managers believe that giving unregistered gifts (in cash or in some other form) when contracting is an inevitable part of business life. Thus, any anti-corruption measures cannot significantly change this situation. Also, various forms of immoral behaviour of managers towards employees have been extremely emphasized, such as: non-compliance with employment contracts, illegal dismissal, overtime longer than allowed by law, often unpaid, harassment and sexual harassment of employees and persons who seek employment.

Recent research shows that the practice of CSR in Serbia has changed significantly. A much larger number of companies view CSR as an integral part of their business, but still a small number of them approach it in the long run and strategically. In many companies, especially the large ones, there are organizational units that deal with CSR issues. Managers' awareness of the importance of CSR is at a much higher level compared to the previous period, but due to the lack of expertise in this

area there is a gap between the desire for the company to be responsible to society and the ability to implement CSR strategically.

For most top managers in Serbia, improving the reputation and increasing the value of the brand are the leading motives in CSR. In contrast, the internal dimension of CSR and business ethics is given much less importance. Such behaviour leads to a paradoxical situation in which companies conduct philanthropic activities to attract consumers, but consumers do not perceive these activities as sincere and consequently do not pay attention to them at all. Similar conclusions can be found in the research conducted in 2020. Most of the companies implement their CSR programs through monetary donations, donations in products (usually to health institutions due to a pandemic), through volunteer activities related to sharing knowledge, skills or time of employees or providing various services (purchasing products of social enterprises, by launching special projects and a campaign to support SMEs).

Business transparency is the area in which the greatest progress has been made in the last 20 years compared to the previous period. Companies are increasingly presenting information about their complete business on their websites. Over 70% of the member companies of the Forum for Responsible Business report to the public on social responsibility by publishing a report. Sustainability reporting became a legal obligation at the end of 2019, after the adoption of amendments of the Law on Accounting, which applies to large companies with over 500 employees. The legal obligation will apply from 2021 to the reports issued for 2020.

There has been some progress compared to the previous period in relations with external stakeholders, too. An increasing number of companies pay attention to the attitude towards consumers, especially in areas where there is strong competition. All products have clear declarations on the content and characteristics of products, the work of minors is not used, many companies encourage the development of local entrepreneurship. However, there are still highlighted problems such as non-compliance with contractual obligations, inadequate servicing of products during the warranty period, etc. The least progress has been made in the internal dimension. Formally, most of the responsible companies implement measures related to human resources, especially in the field of education, because it contributes to attracting the most talented workforce, but problems related to discrimination, various forms of harassment, overtime work, etc. are still present. According to the Forum for Responsible Business, for example, in 2019 6,000 employers in Serbia did not regularly pay contributions for the employees, and the debt for this obligation was around 1.2 billion euros. This caused 108,000 employees not to have related length of service.

Existing university programs on CSR in RS and dominant concepts on CSR

Formal and non-formal education plays a significant role in the development of knowledge and skills of managers for the application of the CSR concept. That is why it is very important to work on improving existing university programs and courses to educate future managers in the field of CSR. Also, it is of great importance to work on developing the skills of current managers, which will facilitate their application when it is about the practical implementation of the CSR concept.

Existing curricula at universities in Serbia address an array of issues in the field of CSR. Programs that are directly related to the study of CSR are the most common at the faculties of economics of all state universities in Serbia. The following subjects are present in the existing curricula: Corporate Social Responsibility (at the University of Kragujevac), Corporate Governance and Business Ethics (at the University of Niš), Natural Resources Management and Environmental Protection (at the University of Belgrade), Business Ethics and Environmental management (at the University of Novi Sad). Each of these curricula covers some or all areas of CSR. In addition, the study of the basics of CSR is an integral part of the syllabuses of Management, Strategic Management and Marketing at all universities.

The concepts of CSR most often presented in academic literature are: EU guidelines provided in the Green Report, Carroll's pyramid, Triple Bottom Line, and Kotler's and Porter's view of CSR. The EU concept is also widely represented in business practice and national policies, research and scientific papers. In theory, the most cited concept (found in textbooks in Serbia and cited in the scientific papers of university professors) is Carroll's pyramid of CSR. Also, very used approaches in teaching and often cited in scientific papers are Kotler's view and Porter's view of CSR, especially in the subjects in the field of marketing, as well as in the final papers of students who examine the impact of CSR on company performance and the community. The next widely accepted CSR concept is the "Triple Bottom Line", according to which the responsibilities of the company are threefold: "profit" - "people", "planet". This concept is an integral part of the financial reporting syllabuses at most universities. Also, the largest number of trainings, courses and workshops is based on this concept.

Currently developed competencies – Knowledge, Skills, Attributes

Based on the analysis of existing educational programs and the managerial practice in Serbia, it can be concluded that the students - future managers, and existing managers, have certain knowledge of CSR. Both groups are familiar with the essence of the concept, but many of them are not familiar with all its elements and do not have the skills necessary for its adequate implementation. As explained above, in Serbia, CSR is mostly reduced to corporate philanthropy. Most of the managers in Serbian companies have the knowledge and experience to implement philanthropic activities. A large number of managers of Serbian companies also

have knowledge and experience in the application of environmental standards. Therefore, ecology is an area in which knowledge about the necessity of CSR is at a relatively satisfactory level. However, it is desirable to extend the knowledge of managers of the most modern concepts in this area.

The most problematic segment of CSR in Serbia is related to the internal dimension of CSR. Managers' awareness of the importance of responsible behaviour for keeping the most talented staff is at a low level. Also, familiarity with the elements related to responsible behaviour towards employees, responsible restructuring, risk management and ethical behaviour is very low. That is why new curricula and informal education programs are needed to fill these gaps.

The key problem in implementing CSR programs are the skills. In Serbia, most of the companies implement CSR programs periodically and without prior planning, because their managers are not aware of the benefits of a strategic approach and are generally not competent to develop and implement a CSR strategy. As they usually have developed marketing skills, they often implement CSR programs in a form of periodic actions that draw the attention of consumers. However, such actions bring only short-term benefits to society and the company. On the other hand, the research shows that there is a gap between the desire of the company to provide for long-term benefits to the society and the ability to realize it. Therefore, trainings and educational programs for existing managers must be organized to develop their skills to plan long-term CSR programs and to approach them strategically.

Analysing the syllabuses of existing subjects at different universities that deal with certain aspects of CSR, it can be concluded that students, future managers, during their study acquire important forms of knowledge and skills associated with this concept. The analysis shows that students, future managers, at different universities may acquire the following forms of **knowledge**: a) basic knowledge of the concept of CSR and company's impact on society and the environment. b) basic knowledge of the elements of CSR, c) basic knowledge in the field of business ethics, d) basic knowledge of moral principles, standards and code of ethics, e) basic knowledge of rights, obligations and responsibilities in the field of safety and health at work, f) conceptual knowledge about sustainable development and environmental indicators of development of organizations and economic activity in general. f) basic knowledge of negative impacts on the environment as a consequence of human activities in the field of energy, mining, industry, agriculture, water management, forestry, urban development, transport, tourism, g) basic knowledge of measures, conditions and instruments in the environmental protection system and the possibilities and ways of engaging ecologists in the mentioned system. When it is about the **skills** that students at Serbian universities could acquire, the following are the most important: a) ability to identify the impact of CSR on

corporate culture, b) solving business and moral dilemmas, c) independent moral judgment, d) application of measures in the field of stakeholder management, e) identification and implementation of measures in case of deviations from safety and legal regulations in the work environment, f) ability to take measures aimed at reducing the negative impact on the environment, as well as to improve the system of protection of the living environment, g) analysis of real business problems in the field of CSR.

Industry 4.0 Components, dimensions, RS view

The fourth industrial revolution, also known as Industry 4.0, has begun in recent years. This topic has been especially relevant since 2016, when it was set as the main focus of the World Economic Forum, the founder and executive president of which is Klaus Schwab. According to Klaus Schwab, the foundations on which the fourth industrial revolution was built are - artificial intelligence, robotics, Internet of Things, autonomous vehicles, 3D printing, nanotechnology, biotechnology, Materials science, energy storage and quantum computing. Following this explanation, a number of other approaches were coined to explain the content of Industry 4.0. Despite the differences in the content of the Fourth Industrial Revolution, the common point of view is that it is based on internet connectivity, robotization and full automation of production processes, digitalization of production and consumption and cyber security.

In order to provide support and encourage the 4th Industrial Revolution in all countries, EU has made "A strategy for smart, sustainable and inclusive growth 2010-2020 of EU" and "A renewed EU Industrial Policy Strategy" in 2017, as well as "Research and Innovation Strategy for Smart Specialization 2014-2020" and taken a large number of different measures in direction of their successful implementation. Accordingly, most European countries have undertaken special initiatives and developed strategic documents for accelerated introduction of technological innovations and addressing the consequences of this revolution. Such is the "Industrie 4.0" program in Austria, "L'Industrie du Futur" in France, "Catapult" in the UK, "Smart Industry" in the Netherlands, and others. Governments' strategic documents aim at creating national conditions for taking advantage of the Fourth Industrial Revolution. Serbia has accepted the attainment of the EU and has committed itself to fully implementing it. At the beginning of 2020, the country adopted the "Strategy of Industrial Policy for 2021-2030" and the "Strategy of Smart Specialization of RS 2020-2027".

The Strategy of Industrial Policy of Serbia for 2021-2030 is harmonized with "A strategy for smart, sustainable and inclusive growth 2010-2020 of the EU" and "A renewed EU Industrial Policy Strategy" from 2017. The key priorities of this strategy are: a) strengthening human resources for the needs of dynamic development of RS; b) digital transformation of the economy; c) stimulating

innovations digital transformation direction; d) increasing investments in physical, digital and social infrastructure; e) increasing competitiveness in the international market and f) stimulating the circular economy and reducing environmental pollution. The goal of this strategy is to increase the competitiveness of Serbian industry through digital transformation and greater application of the latest technology for Industry 4.0.

"The Smart specialization strategy for 2020-2027 RS" is harmonized with the EU "Research and Innovation Strategy for Smart Specialization 2014-2020". The goal of this strategy is to develop and place top innovative products and services on the global market. It focuses on development of activities, measures and instruments to encourage better cooperation between key stakeholders from the economic, scientific and research sectors in the areas of specialization according to the principles of "Collaborative Innovation". Some of the priority areas determined by this strategy are: 1) Data to Decision - Industry 4.0, 2) Big data & Analytics, 3) Cloud technologies 4) Internet of Things 5) Custom Software development. For the implementation of this strategy, the Action Plan for 2021-2022 was adopted, which determines a large number of programs and measures aimed for achieving the goals in the priority areas.

Therefore, with both RS strategies, the digital transformation of the economy and development of Industry 4.0 are defined as key priorities. On the other hand, analyses and tests performed during the preparation of these strategies show that an extremely small segment of domestic industrial production is on digital transformation trail, and the conditions and development potentials of Industry 4.0 in Serbia are incomparably smaller compared to EU member states with large industrial basis. The results of J. Joković's research show that: a) only 12.6% of companies from the manufacturing sector have introduced industrial robot technologies, b) only 2.8% of companies from this sector use nano-technologies in production processes, c) only 2, 8 percent of companies in the manufacturing sector use process techniques for composite materials (e.g. carbon fiber, glass fiber), d) 2.1% of companies use additive manufacturing technologies for rapid prototyping (e.g. 3D printing, SLS, SLT, SLM, EBM methods), e) 31.6% introduced computer-aided production planning and management technologies. In addition, companies that have introduced some of the Industry 4.0 concepts in their production facilities have mostly introduced them at a low level of capacity utilization. The latest research shows that during the conditions of the Covid-19 virus pandemic, digitalization in Serbia was higher than ever before and achieved extremely high growth rates. Many companies, due to the pandemic, have been forced to discover what can be done with digitalization and with new ways of working in a virtual environment, and as a result the speed of the process of digital transformations in Serbia accelerated considerably (almost tenfold). This means that Serbia has great potential for rapid digital transformation. However, Serbia is at a very low level of

application of technologies that include Industries 4.0, so a lot of effort needs to be made to reach the EU average.

Challenges of Industry 4.0 - dimensions, RS view

The key challenges of the 4th Industrial Revolution are related to a) financing new technology and production processes automation and b) solving social problems that will arise as a result of the introduction of new technology in everyday and business life.

As explained, the 4th Industrial Revolution implies the introduction of new technology. Despite the fact that there is still no single opinion of which technologies it includes, it implies automation of all processes, and its implementation requires huge investments. According to "PricewaterhouseCoopers" research, \$ 907 billion has been invested in the digital transformation of the 26 most developed economies. The estimates of these investments for Europe are 90 billion EUR per year. Obviously, such large investments can only be generated by extremely high developed economies. In addition, it should be considered that these funds are calculated taking into account the achieved level of digitalization of the most developed countries. When it comes to Serbia, the challenges are even bigger, because the achieved level of digitalization is much lower, and the economic power of the economy to generate capital is much smaller. Research shows that the achieved level of digitalization in Serbia is far lower compared to the most developed EU countries (according to the DESI index, Serbia is in 29th place); the level of business processes automation for traditional industry is also at a low level, and a large number of SMEs do not plan projects in the field of digital transformation at all. Serbian ICT sector is export-oriented, but current ICT sector exports are mainly based on the provision of low-cost software services to clients from developed countries, while the involvement of Industry 4.0 technologies is relatively low. A very serious problem is also the lack of human and financial capacity in the state institutions to encourage digital transformation. In one word, the achieved level of digitalization is extremely low.

On the other hand, Serbia's investment opportunities are very limited. There is insufficient level of domestic private and public investment in relation to GDP compared to other Central and Eastern European countries; there is a large number of underdeveloped and devastated areas and a large difference in development between different districts; procedures for granting incentives are complex and very often associated with corruption; the level of economic development is low. For these reasons, securing funding sources for technology that will support the development of Industry 4.0 is a huge challenge in Serbia.

The next big challenge posed by Industry 4.0 is solving the social problems that will arise with the introduction of new technology. The most sensitive social

consequence of the 4th industrial revolution is related to employment. It can be expected that about 30-50% of employees in production will be exposed to the risk of losing their job due to full automation in the near future. In production, workers who perform routine operations and simple jobs are most at risk of losing their jobs (for example, 3D printing technology will replace expensive and labour-intensive processes such as casting and milling). The same can be expected in the sector of services. Electronic payments, internet banking, will reduce the number of employees in banks; e-commerce, home delivery of food, etc. will reduce the number of employees in trade, tourism and hospitality. Some existing branches will disappear completely, but new sectors with new jobs will appear. According to McKinsey Global Institute estimates, by 2030, between 75 and 375 million employees may need to change occupational categories and learn new skills. Some even believe that about 85% of the jobs that people will do from 2030 have not yet been invented. In order to responsibly face these challenges, managers need to develop competencies related to organizing a large number of educational programs as well as encouraging employees to attend educational programs and workshops that will enable them to develop new digital skills needed to adapt to changed or new jobs in Industry 4.0. Also, the competencies needed for the responsible implementation of company restructuring are needed.

New technologies of the Internet of things, cloud services, video communications create favourable conditions for distance working and work at home. Permanent office space is being replaced with a mobile workplace, which can be from home, on other continents, in a hotel, temporary office, etc. Also, as a result of automation and the introduction of robots, there will be a change in the way of doing business. Production robotization and automation will enable products making fully adapted to consumer requirements, but will involve work 24/7, without the possibility of claiming additional payments and workers' rights to protest. All this will lead to an increase in labour productivity, which means a reduction in working hours. It becomes a great challenge to prepare managers for the creation of new working conditions, which will include flexible working hours, division of working hours, etc.

These challenges in the social sphere are present in all countries of the world, but they are even more pronounced in Serbia, because its level of development is much lower and there are a large number of additional problems. Some of them are: lack of a clear vision of the digital future and lack of IT experts at the national level, lack of digital culture in the corporate sector, lack of basic digital knowledge and skills among a large number of residents. Due to these problems, the process of digital transformation is very slow. In addition, the IT sector lacks a critical mass of human potential (except in the zone of Belgrade and Novi Sad), which can be the initiator and carrier of new technologies that include Industry 4.0. This will hinder and slow down the development of new occupations and the creation of

Industry 4.0. The negative natural increase and the emigration of the most professional staff additionally contributes.

Additional challenges are created by the problems in educational system. Serbia allocates relatively small amounts of funds for education, in relation to its level of development and public revenues. The coverage of university education is high, but its structure is not optimal in relation to demand, and the quality is unequal between universities. In order to eliminate these problems, it is necessary to innovate the curriculum in the formal education system and offer a large number of non-formal education programs, trainings, workshops that will enable the development of new skills and easier overcoming of social consequences of digital transformation.

Emerging competences – Skills, Knowledge, Attributes

In accordance with the expected changes that will occur in Industry 4.0, it is necessary to develop the digital competencies of managers. Some of the most necessary skills are: Digital literacy, Data analytics, Sybersecurity, Data-mindfulness. However, it should be added that digital skills are not the only ones needed for the future. According to some research, these are also the following skills: Complex problem solving, Critical thinking, Creativity, People management, Coordinating with others, Emotional intelligence, Judgment and decision-making, Service orientation, Negotiation, Cognitive flexibility.

The importance of the digital competencies in the EU could be seen in the document called Green Deal which gained strong political support. This document envisages the transition to a circular economy and greater reliance on sustainable resources, including energy. Covid-19 also initiated turnaround towards the application of modern technology and a shift in the way of thinking when it comes to existing methods and approaches to work. In Serbia, the need for the development of digital skills has also been recognized, and the Strategy for the development of these skills for the period 2020-2024 has been adopted. It is a national strategic program which comprehensively regulates the development of digital skills of the population with the aim of using the potential of modern information and ICT in the direction of raising the quality of life. Numerous studies indicate that in the coming years there will be more and more jobs for people in Serbia who possess advanced digital skills. Demand for digital technology professionals has increased by 4% per year over the past ten years, and the number of vacancies for information and communication technology professionals is expected to increase further.

Modern technology creates certain challenges in terms of CSR. The challenges are related to the right to privacy of employees, the need to possess adequate skills so that this technology can be used for the purpose of CSR. On the other hand, modern

technology that is in the line with the CSR, provides numerous opportunities related to sustainable development, greater flexibility in the way of working of employees, resistance of business to various disturbances in society, etc. That is why the key priorities of the EU development of human-centric approach are to enable sustainability of resources and greater resilience of business processes to geopolitical and natural crises, such as the Covid-19 pandemic.

Orientation of technology towards the human factor, indicates that human needs and interests should be at the centre of this technology. For example, telecommunication is considered to be the best alternative to doing business outside the company. It is defined as a work arrangement in which employees perform regular work from a place that is not traditional office thanks to the support of information technology. This concept of "virtual office" is gaining in popularity because of the simplicity of this way of working. The essence of this form of work could be described as follows: using a computer or telephone and internet connection, employees communicate and do work from anywhere they have connections to the company. Consequently, this „virtual office“ eliminates the need to come to the office every day, which allows the employee a more comfortable, and in pandemic conditions, safer way, of doing business.

Modern technology is also expected to enable sustainability, i.e., to enable the development of circular processes within which once-used natural resources are reused. In addition, sustainability means reducing energy consumption, non-emission of harmful substances into the environment and the like. Resilience, as the next requirement regarding modern technology, is that it enables that even in conditions of various disturbances, infrastructure and production, processes will function normal. In other words, modern technology is expected to enable the development of flexible business processes. This is especially important for supply chains that serve basic human needs.

The implementation of modern technology that has the characteristics described above generates numerous benefits for employees. They can be summarized as follows: it provides a safe working environment; it respects human rights and respects the needs of employees. However, this technology at the same time requires employees to acquire certain (new) skills. Sometimes employees will have to "retrain", i.e., to acquire completely new skills, if they haven't acquired them during education or within previously training programs.

Having in mind the above, in order for modern technology to be used in the line of CSR, it is crucial that employees develop appropriate digital skills. For that purpose, it is necessary to organize educational programs, primarily by educational institutions such as faculties, but also by other entities, so that some employees could acquire basic or advanced digital skills.

Despite the fact that new technology enables the creation of new occupations and new jobs, some existing ones will become redundant. Thus, there will be a surplus of employees. However, even in such circumstances, a high level of responsible behaviour towards such employees should be demonstrated. This means prior research of all the alternatives to dismissal, i.e., the possibility of additional training and retraining. In case they are exhausted and the dismissal of employees is inevitable, such employees should be provided with all possible material (financial) and non-financial support. In other words, dismissal should be done in an extremely responsible way. Finally, it should be mentioned that modern technology provides great opportunities for redesigning the work process of employees in a way that it allows companies to achieve great savings and much more convenience for employees. It is about working from home, that is, using information technology that enables remote work. This approach in redesigning jobs is at the same time a way to increase the motivation and satisfaction of employees, and consequently the results they achieve.

Having in mind the above, i.e. the fact that modern technology should be human-centric, that it should enable sustainable development, to be environmentally friendly, that it could lead to redundancies, and that it can be used for the purpose of redesigning business processes and ways of working, the **new knowledge** that students, as future managers, and existing managers are to acquire pertains to: a) basic knowledge of methods of rational use of resources, b) basic knowledge about the green technologies, c) basic knowledge of mechanisms and measures based on the use of modern technology in the function of redesigning of the work process, d) basic knowledge of modern approaches in designing jobs in order to motivate employees and engage their full potential, e) conceptual knowledge of responsible company restructuring due to the application of modern technology, f) conceptual knowledge of how to solve redundancies in a socially responsible way in conditions of job loss due to the application of modern technology, g) basic knowledge of the concept of organizational justice. The key emerging **skills** that need to be developed are: a) redesigning the work process of employees based on modern technologies, b) implementation of the process of reducing the number of employees in a socially responsible manner, c) empowering employees who have lost their jobs due to the application of modern technology to actively search for new employment using modern technologies.

Needed competences – Skills, Knowledge, Attributes, RS view

First. The key problem, for most Serbian managers is to implement a long-term, strategic approach to CSR. To solve this problem, it is necessary to improve **competences for CSR strategy formulation and implementation**. **Needed knowledge** is: a) basic knowledge of the concept of CSR and the elements it encompasses, c) basic knowledge of strategic management.

Needed skills are: a) the ability to create a vision of CSR, b) the ability to define the key values of the company, c) the ability to choose the area of engagement of the company in the community, as well as set of projects that will be implemented in each area of engagement of companies in the community), f) the ability to implement various measures on these projects, d) measuring the effects for society and the company, h) reporting.

Second. The most problematic CSR areas in Serbia in Industry 4.0 are related to employment and changing working conditions (replacement of employees with robots, emergence of new occupations, shorter working hours, teleworking and working from home, working hours 24/7, etc.). To solve this problem, it is necessary to develop **competencies for responsible human resource management and responsible adaptation to change**. **Needed knowledge** is: a) basic knowledge of the possibilities of redesigning of the work process in light of Industry 4.0, b) basic knowledge of modern approaches in designing jobs in digital environment, c) conceptual knowledge of responsible company restructuring, d) conceptual knowledge of how to solve redundancies in a socially responsible way. **The needed skills** are: a) an ability to propose and implement programs related to attracting and retaining talents (various educational programs, training, job changes, etc., the possibility of advancement, the possibility of work/life balance etc.), b) organizing education, workshops, trainings (for additional training of workers and acquisition of new knowledge and skills for existing jobs and retraining of employees for new jobs), c) designing working conditions in accordance with the requirements of new technology (prescribing the number of working hours, overtime, part-time, creating virtual teams, mobile offices), e) encouraging diversity and eliminating all forms of discrimination (gender, national).

Third. Desirable CSR competence areas in Serbia in Industry 4.0 are: knowledge and skills related to the **implementation of green technologies** as well as methods for the **rational use of non-renewable resources**.

Obsolete competences

The development of technology has always led to the obsolescence of some existing competencies of employees, and consequently, to the elimination of certain jobs. On the other hand, the development of technology initiates the need to develop new forms of competencies and creates new jobs. It is estimated that by 2025, 75 million jobs will be eliminated based on the substitution of human labour by machines, but at the same time 133 million new jobs will emerge.

According to the Report of World Economic Forum modern technology will cause the decrease in demand for the following forms of competencies: a) Manual dexterity, endurance and precision, b) Memory, verbal, auditory and spatial abilities, c) Management of financial and material resources, d) Installation and



maintenance of technology, e) Reading, writing, math and active listening, f) Quality control, g) Coordination and time management, h) Visual, auditory and speech abilities, i) supervision and control.

As a consequence of the declining demand for the above-mentioned forms of employee competence, the jobs in which they are crucial are at the same time those in which a certain number of redundant employees will emerge in the foreseeable future. This problem, as stated, should be solved in a socially responsible way.

Chapter 6. CSR and Industry 4.0 – evidence from Spain

Industry 4.0 is already here and it is unstoppable. The fourth industrial revolution is a reality that is beginning to have an impact on new forms of production, new ways of organising companies and, of course, on the safety and health of workers. We are facing a revolution in which the digitalization of production processes, connectivity, machine automation and new emerging technologies such as robotics, artificial intelligence, additive manufacturing or virtual and augmented reality, among others, are taking precedence.

Along with the drive to modernise the economy and digitization, companies and governments are obliged to incorporate the utmost attention and concern to the potential risks of polarisation in society. It is in this sense that CSR must be incorporated into these new challenges linked to this paradigm.

In the specific case of Spain, we find a variety of examples that show different strategies, both to anticipate possible consequences and to try to mitigate the negative effects that could affect the main stakeholders of the companies. Therefore, this chapter will offer case studies that serve to show the reality of the Spanish case, and that help for a comparative analysis with other European countries.

6.1. Unemployment caused by the new technologies – case study from Spain

The so-called "fourth industrial revolution", in other words, the global disruption caused by the latest generation of technology and digitalization, is injecting a productivity and therefore competitiveness boost into companies. But, on the other hand, and in parallel, this phenomenon is also having a negative effect in the form of increased unemployment. Digitised companies need fewer employees to achieve the same or even better business objectives.

This change of era and digital transformation also entails the appearance of new jobs, new technological professional profiles-data analysts, programmers, robotics experts, cybersecurity, of which there is currently a high shortage in the labour market. At the same time, however, there is a demand for new profiles with transversal competencies focused on areas that are unattainable for machines, such as critical thinking, analysis and complex problem solving, creativity, social influence, emotional intelligence, leadership and social awareness, among others.

Therefore, it is necessary to investigate in depth the concrete relationship between Industry 4.0 and labour relations. This is also an area in which CSR must take

sides, since companies, beyond their HR management, will have to plan long-term strategies that address this phenomenon of "new labour relations in the 4.0 era".

The following are three specific case studies that serve to interpret, in the specific case of Spain, how it can affect, and what solutions can be implemented, in this relationship between employment and Industry 4.0.

SPAIN	CASE 1
Name of the practice	National Plan of Digital Competencies, Guideline 4.
Company, Region/City	Government of Spain, 2030 Agenda.
Background of the industry sector	<p>Unemployment is a big problem worldwide, but it is especially aggravated in a country that closed 2021 with an unemployment percentage of 13,3%.</p> <p>A very important factor that helps these worrying numbers is the robotization of lots of processes in various working fields, particularly taking into account that this robotization and digitization procedures are increasing in amount and quality.</p>
Description of the problem	<p>Robotics will be increasingly present in production processes, not only substituting workers, but also being a part of their daily tasks, so employees will need to acquire digital skills in order to perform their job.</p> <p>If workers and those who are unemployed do not receive digital training, they will not be able to carry out their jobs and, therefore, they will be susceptible to losing their job (dismissal due to supervening disability) or, in case of unemployment, susceptible to great difficulties finding a new job. According to this, training becomes a fundamental tool for job stability and employability nowadays.</p>
General description of the practice	<p>This plan is divided into 7 action guidelines, but we are focusing on the fourth one: Digital Competencies Training along Work Life.</p> <p>This one is in turn, divided into two practical strategies:</p> <ul style="list-style-type: none"> - Reskilling and Upskilling oriented Plan for workers. - Active integration of digital competencies (mainly the basic ones) certifications into the National Catalogue of Professionals Qualifications. <p>Meanwhile the second one needs no further explanation, the first one plans to open Digital Training centres for the agri-rural</p>

	workforce, run different education-based digitization plans in various important sectors and establish several education for digitization financial support plans at the same time it creates IT platforms to help with these processes.
Reasons for intervention	<p>Training becomes an essential tool to stable employment.</p> <p>Educational system and companies should take action to create training programs that train citizens and employees in new technology in order to keep employment numbers high.</p>
Achievements and results	<p>Actually, an evaluation process is underway to seek for results in the digitization improvement of workers.</p> <p>Actually, a way to rate the efficiency of these measures is the employability of the workers that are in a termination of employment process, measuring the time passed before getting a new job with the same or just with similar digitization or robotization requirements.</p>
Insights for applicability and further improvement	<p>Give value to job stability –present and future- through training. Government is committed to social sustainability and SDG 4 (quality education) and SDG 8 (decent work).</p> <ul style="list-style-type: none"> - Training citizens and workers, covering most of the employment sectors, as unemployed, self-employed workers and active workers. - New human resources management and interaction methods.
Transferability into different fields and sustainability	Applicable to all digitization and robotization-susceptible sectors.

6.2. Social and legal aspects of CSR (outsourcing, corruption, human rights, patents) - case study from Spain

The social aspect of CSR is much more than corporate philanthropy, which is just another way of acting in a socially responsible manner. When CSR refers to social aspects, it refers to the impacts produced by the company on people, principally those who work for it, and on the communities in which it operates.

On the other hand, it is important to remember that a basic condition in CSR is that

an organisation complies with the law. Therefore, when it comes to CSR and social aspects, it refers to those actions beyond those required by the legislation in force. For example, a company that has operations in several countries may decide to apply the most stringent labour legislation in all of them. For the country that has the most stringent legislation, mere compliance with it is not considered to be a CSR action, while in the other countries, anything the company does beyond local legislation is a CSR action.

Therefore, a company can benefit from implementing good practices beyond current legislation, thus contributing to its competitiveness and becoming more responsible and sustainable. For example, in the area of health and safety a service company could improve workplace furniture to suit the ergonomic needs of its employees, improving their well-being and risk of physical ailments while improving their performance and job satisfaction. Another example could be to provide employees with the necessary technological tools to encourage them to work from home, thus facilitating the reconciliation of personal, family and work life with the added advantage of avoiding or at least reducing commuting during rush hour with the environmental impacts that this entails.

SPAIN	Case 2
Name of the practice	Compliance Manual
Company, Region/City	Public services company, Murcia
Background of the industry sector	<p>This company is mainly active in administrative activities and auxiliary services. It is focused on providing these services to the public administration and large corporations of the urban cleaning and maintenance dimension, along with others that are dedicated to environmental regeneration.</p> <p>Due to the privatisation of this sector, multiple companies have specialised in various aspects of the community order and maintenance. Outsourcing helps to reduce costs, and these corporations participate in public biddings to get a contract, trying to offer the best quality-price ratio.</p>
Description of the	<p>Corruption has so many forms and can come from so many different origins, for example, coming from: public servants, politicians, business people, members of the public...</p> <p>Therefore, it leads to various costs, like:</p> <ul style="list-style-type: none"> - Political costs, that undermine people's freedom and law normal functioning.

<p>problem</p>	<ul style="list-style-type: none"> - Social costs, harming the possibilities of a fully achieved society development and government trusting. - Environmental costs, hurting the environment and therefore weakening a possible sustainable future. - Economic costs, fact that hampers wealth growing in the collective and individual dimensions.
<p>General description of the practice</p>	<p>This is a protocolized Compliance Manual against corruption, based on the International Bill of Human Rights, on the main ILO conventions and Guiding Principles on companies and Human Rights.</p> <p>It contains two high importance laws that cover two different but complementary aspects:</p> <ul style="list-style-type: none"> - The Ethics and Behaviour Code, with guidelines and actions to establish worker and company behaviour in social activities and current legislation. It also contains tracking techniques to supervise this regulation's fulfilment. - The Criminal Compliance Policy, against fraud, corruption and bribe.
<p>Reasons for intervention</p>	<p>There are legal and ethical aspects behind corruption fighting in companies. In the legal part, it is a very substantial reinforcement in the prevention of the potential negative externalities in terms of Human Rights, and also in terms of giving a good treat to workers.</p> <p>On the other hand, we have the ethical implications, treated deeply in CSR knowledge, that also implies Human Rights and the specific company workers protection.</p>
<p>Achievements and results</p>	<p>The implementation of this policy against corruption has helped to consolidate this company as the leading one in this sector in terms of corrupt practices prevention, also achieving all the legal requirements in terms of Compliance. Also, using surveys to ask their employees, the corporation has been capable of getting positive feedback, feedback, that shows that the workers feel now more supported and protected than ever, having clear all the established limits in negotiation with public representatives and other companies. Finally, it is important to emphasise the fact that the general impression of the employees about the enterprise has improved.</p>



<p>Insights for applicability and further improvement</p>	<p>Future plans pretend to improve the guidelines and procedures against corruption, especially the ones referred to communication and prevention. Also, as improvements, it is planned to train not only the management team, but also the middle level management for them to develop abusive and violent behaviours, as well as corruption clues.</p>
<p>Transferability into different fields and sustainability</p>	<p>This kind of protocols can be applied to almost every company or public institution, due to the workers being human, and therefore, corruptible. As corruption is a problem in so many public and private fields, this manual and especially the specific actions written in it are a way to help or guide companies with a vast variety of dimensions.</p>

<p>SPAIN</p>	<p>Case 3</p>
<p>Name of the practice</p>	<p>Greendyes™ Patented Technique.</p>
<p>Company, Region/City</p>	<p>Nextil Group, Barcelona, Spain.</p>
<p>Background of the industry sector</p>	<p>The Spanish textile sector has had a rough 2021 year due to the COVID pandemic, with losses of around 140.000.000.000 euros. However, a constant increase in selling numbers can be observed this year, as the leading companies (and the most environmentally committed ones) are using the post-pandemic situation to try and adjust two tendencies in the sector:</p> <ul style="list-style-type: none"> - Fast-fashion, that is the tendency to mass produce inexpensive clothing in response to the latest trends in the world, a tendency that is a threat to the environment and to the workers that produce the garments. - Just in time, a philosophy that consists of using the minimum time and resources, producing as little wastes as possible. <p>This change towards circular economy wants to achieve the guidelines established in the Fashion Industry Charter for Climate Action.</p>

<p>Description of the problem</p>	<p>Textile industry emits 8% of the world's total greenhouse gases and consumes over 215 trillion litres of water a year. In other words, this sector is responsible for 20% of industrial water contamination, due to textile treatments and dyes. These numbers are constantly increasing, as the number of clothes produced every year has doubled since the beginning of the century, with more than 100.000 million garments produced yearly.</p>
<p>General description of the practice</p>	<p>Nextil developed the Greendyes patent, which consists of a photochemical process in which the colour pigments get excited by UV and infrared rays, facilitating their adding to the fabric. The model also includes a reduction in the total time, energy and water spent on it, becoming the most environmentally friendly dyeing system in the entire world. They also claim that all their products are traceable and have been tested to their origin in order to ensure that they are environmentally friendly.</p>
<p>Reasons for intervention</p>	<p>In Spain, even though COVID made the sector reduce its emissions by an 11% in 2020 compared to 2019, there are future prospects from the European Parliament narrating that that number will almost double by 2030 if this fast fashion business model does not change. A change is needed in order to start developing an eco-friendly system, maybe also setting the example for other countries or industrial sectors.</p>
<p>Achievements and results</p>	<p>The usual water consumption during the garment dyeing process is 120 litres per item of clothing, and with Greendyes only 8 litres are needed, finishing all the procedure in 1 hour and finally recycling all the used water through sand filters. Also, as the dyeing is made in cold and there is no need to heat the water, there is a total energy saving of 75% compared to the usual procedures.</p>
<p>Insights for applicability and further improvement</p>	<p>Even though it's really difficult to upgrade the results, further improvement can be made by starting to change the power supply into renewable energies.</p>
<p>Transferability into different fields and sustainability</p>	<p>These procedures and protocols can be transferred to all the companies in the sector that have the same dyeing requirements in their production systems and seek for a change into a greener and more eco-friendly production process.</p>



SPAIN	Case 4
Name of the practice	Caixa Pro-Childhood, Against Child Poverty.
Company, Region/City	CaixaBank, Spain.
Background of the industry sector	<p>After the Spanish banking sector restructuring in the 2008-2018 period (transformation from savings banks into banks and integration of all the sector in 15 entities), the sector faces some important challenges, as digitization, changing customer service from face to face to a digital environment (even closing a big amount of offices) or the new online paying methods, using credit card online payments or even Bizum and other platforms like this last one.</p> <p>Banks reputation has been compromised due to the “alleged neglect” in the attention to those who are vulnerable, as elder people or those who live in rural and non-digitised parts of Spain, to the huge number of firings that are being made as they’re closing bank offices, and even because of the public perception of the way banks are dealing with economic crisis nowadays.</p> <p>To confront that, the most advanced and rich entities pretend to help their environment and protect their image using part of their benefits in social and ecological projects.</p>
Description of the problem	<p>According to Eurostat, 32% of Spanish children are in risk of poverty or social exclusion between 2020 and 2021. This supposes a big threat to their development and therefore for the entire future society of Spain.</p> <p>Meanwhile the Spanish government makes constant efforts to mitigate these conditions, a big part of the investing relies on private companies, with CaixaBank at the spearhead of the group.</p>
General description of the practice	<p>Fundación La Caixa divides its childhood help into two main lines:</p> <ul style="list-style-type: none"> - Pro Education one, financially supporting complementary educational support and school resources, creating open school and leisure centres as summer camps and other activities and, finally, opening educational family workshops. - Pro Health line, that includes food (and specific dietetic supplements) and hygiene helps, psychological support and providing glasses and hearing aids.

<p>Reasons for intervention</p>	<p>Meeting children needs is more than giving them the basic duo that food and home represents, as the right of having a quality education and the possibility to play and enjoy their childhood are quite important for their development too. Taking care of the children is crucial, not only in a philanthropic way, but also thinking about the future of our society and ourselves.</p>
<p>Achievements and results</p>	<p>They helped and supported 58.841 children and 35.326 families in 2020. Results of the 2021 exercise have not been published yet.</p>
<p>Insights for applicability and further improvement</p>	<p>Thanks to these projects, Fundación La Caixa is actually the banking foundation with the most social projects, and that is something that allows them to increase their reputation, social image and their prestige among their clients and also among the entire public. That gets this foundation to be perceived as “necessary” and socially engaged.</p> <p>In terms of future improvement, Fundación La Caixa is trying to reach more families every year, although it is especially difficult due to the critical financial situation at the moment. Plans to give transportation methods to children who are far from the leisure and education centres are on the way, such as including some orthopaedic mechanisms in the Pro Health line for the reduced mobility suffering youngsters.</p>
<p>Transferability into different fields and sustainability</p>	<p>The specific protocols established in order to provide help in both of the main lines can be transferred to almost every country and age sector, even though here it is specially designed for kids. Little or no modification is needed, leaving the financial part as the only one needed for these plans to start working in other geographical parts, or in other age groups such as elderly population or other vulnerable ones.</p>

Chapter 7. CSR and Industry 4.0 – evidence from Germany

7.1 Emerging Information technologies coming with the Industry 4.0 (case study from Germany)

Name of the practice	Smart manufacturing in SmartFactory
Company, Region/City	SmartFactory Kaiserslautern, Rhineland-Palatinate Germany
Background of the industry sector	Manufacturing during Industry 3.0 was a teamwork from machines and man which has made possible huge production and assembly plants to generate diverse kind of products in huge amounts. However, self-adaptation and learning are still lacking, therefore the implementation of this technology give an opening to move forward into a better and more efficient way to manufacture. Zühlke, Gorecky (2016)
Description of the problem	<p>The phenomenon known as the Internet of Things (IoT) will affect settings of all kinds - homes, cities, traffic, logistics, retail and medicine. And it will not stop at our factory gates. New challenges approach with the arrival of Smart manufacturing Zühlke, Gorecky (2016):</p> <ul style="list-style-type: none"> • how to assure interoperability, when connecting heterogeneous systems • how to guarantee real-time behaviour and predictability when thousands of devices communicate at the same time • how to prevent disruptors, or competitors, to take over control of highly networked production systems • determining the benefit or return for investing in IoT technologies.
General description of the practice	<p>SmartFactoryKL acts as catalyst to bring smart manufacturing into reality.</p> <p>They have team up 40 companies to develop smart manufacturing solutions.</p> <p>The network is organized into four working groups that lay the groundwork for the practical implementation of smart manufacturing solutions.</p> <p>Many of their outcomes can directly be transferred into the development and operation of large-scale prototypes in order to deliver tangible proof and best practices, which is then reflected</p>

	back again to the working groups. In this way, the involved partners learn how best to design and build next generation production systems and how to launch products that make smart manufacturing become reality SmartFactory (2021).
Reasons for intervention	<ul style="list-style-type: none"> • Flexible and efficient production process that makes possible the almost immediately respond of customer demand. • Compensate for technological uncertainty and financial risks.
Achievements and results	<p>Modular manufacturing: In the first production line, developed in 2006, liquid soap is processed, coloured, bottled and labelled according to the customer's individual order. The technological focus is set on modular manufacturing concepts and smart product memory solutions.</p> <p>Cyberphysical: The second production line, developed in 2012, assembles small-scale consumer electronic products, such as flashlights. The system is based on smart product memory solutions, but also features a decentralized control architecture using cyberphysical systems.</p> <p>Plug and play: The latest prototype, developed in 2014, is the highly modular, multi-vendor production line featuring plug-and-play module extension. It is a best practice example for recent SmartFactory collaboration activities Zühlke, Gorecky (2016).</p>
Insights for applicability and further improvement	To overcome vendor-specific, stand-alone solutions and create a solid base for cross-vendor solutions within manufacturing.
Transferability into different fields and sustainability	<ul style="list-style-type: none"> • Real-time digital dashboard coupled with big data applications • Seamless coupling of manufacturing engineering and operation by reusing documentation from the supply chain for shopfloor applications • Vertical integration of information and functionalities from ERP to the production modules • Dynamic, software-based certification methods for highly modular production lines. <p>SmartFactory [2] (2021)</p>

7.1.1. CSR and Internet of Things

The Internet of Things (IoT) is one of the strongest developments in communication and information. Nowadays there is a bigger range of devices that are able to connect into the network like medical devices, cars, controls, smart TVs and one of the most recognized, digital assistants (Amazon Alexa or Google Home). (Yoo, 2019) The IoT system process data and store it in a distributed manner, often linking specialized devices together, and unlike pure cyber systems, they collect data from the physical world as well with sensors. “The Internet of Things refers to the connection of everyday objects to the Internet and to one another, with the global being to provide users with smarter, more efficient experiences.” (Simon, 2017)

Technology like the Internet of Things has both risks and benefits. It is important to look at the nature of this system in an objective way considering that the information collected, and the predictive analytics can allow detailed levels of personal information and interested parties could be attracted to these personal habits. However, other impacts can be seen on cities and businesses. “The greatest impact is likely to be felt in urbanized areas where IoT devices and “smart” technologies have the capability to leverage high-speed communication networks to bolster infrastructure and services such as water and electricity supplies, sanitation and waste management, urban mobility and public transport, IT connectivity, public safety, and weather monitoring.” (Butler & Lachow, 2016) However, there is also a transformation in businesses by “optimizing asset utilization, reducing operational cost, improving worker productivity, enhancing worker safety, creating new revenue streams, improving sustainability, and enhancing customer experience.” (Simon, 2017) Governments and companies can use IoT to enforce technological innovation and new capabilities considering the reduction on operational costs as well as the decline cost of connectivity while new ways of analysing large amounts of data have been developed (Butler & Lachow, 2016).

The unrestrained rise of the IoT raise an abundance of issues and concerns about security and privacy, telecoms networks and power utilities through illegal breaches of the network. “In addition to the range of traditional online threats, flooding a sensor with electromagnetic radiation can cause it to malfunction.” (Yoo, 2019) It should be noted that most IoT was not created with security in mind, but these situations where hackers can stop medical devices, or interfere in dire situations can suggest the possibility of extortion or worse. Most of the potential solutions have yet to be perfect as they are costly and still not completely eliminate the possibility of an undetected attack.

Mandatory registration and government regulation have limitations, as the public sector, to rely on margins of loss and profit. These can end up lacking funding for not being able to check if they are worthwhile. “Government agencies are also vulnerable to capture by the industries they seek to regulate because a single set of standards may function to choose winners and losers among competing manufacturers with different security techniques.” (Badiei, et al., 2017)

Additionally, these programs are not universal since it depends on the capacity of the government that implements them. If the United States would require registration, it cannot force Chinese or European devices to these standards. Measures like Europe’s General Data Protection Regulation (GDPR) include requirements for incidents that could damage European’s rights, and they also apply to non-EU companies that process the data of EU citizens and could assign heavy penalties, here “private industry - in the form of multinational corporations— has an advantage: because they operate in many nation-states, they have the potential to unify standards across national borders.” (Badiei, et al., 2017)

7.1.3. CSR and Cloud Computing

In alignment with the information discussed before, cloud computing is also a big trend which has been surging as the new way of doing things regarding information technology (IT) (Marston, Sean R. & Li, 2009). Nowadays, the pandemic has been pushing us to move forward to overcome the obstacles that COVID 19 has brought us since 2020. Therefore, organizations have been forced to migrate their workloads and operations from traditional channels to digital formats. Cloud computing is now the answer to face the pandemic and to carry out the transition into the fourth industrial revolution. In fact, in Germany according to trend study done by Bitkom, 78% of German companies are currently using cloud platforms for their businesses. It represented an increase of 5% in two years. (Bitkom, 2019). However, it also brings challenges regarding corporate social responsibility (CSR) for all organizations involved, such as location guarantee, service uptime percentage or IT security.

In response to those issues companies are starting to work along together. This is the case of Intel and Wortmann AG who are providing a solution called Managed IaaS, that also features the latest innovations from Intel, such as the 2nd Gen Intel Xeon Scalable processor, Intel Optane SSDs and the Intel SSD Data center Family. This tool seeks to provide “high security standards and a multitude of automated processes and excellent scalability to help customers grow their businesses. Another good example of overcoming data security challenges is AOK - Die Gesundheitskasse, who also in partnership with Intel has developed and

implemented Trusted Execution Environments (TEEs) which “are allocated areas in main memory in which clear data and the applications necessary for its calculation are protected from access by external processes, including those of the operator from the server.” (Intel, 2021)

On the other hand, there are some threats that might hinder the use of cloud computing in some organizations. One of the most important ones is the possibility of backlash from entrenched incumbents (Marston, Sean R. & Li, 2009). Due to lack of guarantee on topics such as data security and IT audit policies, some companies and IT staff might confront the implementation of this kind of technology. In contrast to the negative side of the implementation of cloud computing there are much more benefits and opportunities.

Other advantages of using cloud computing are to lower dramatically the cost of entry for smaller firms. Besides that, it can also provide instant access to hardware resources, reduce IT barriers, facilitate service scaling of companies and finally, open room to innovation and new digital solutions. However, in Germany the poor management of resources has increased the cost of cloud services to around \$21 billion in 2021, while in 2019 was about \$14 billion, leading not only to financial consequences but also having a negative impact on energy requirements and the consumption of land and raw material (Möhle, 2021).

In terms of these sustainable challenges there are several approaches to the emerging technologies. For example, (Young and Tilley, 2006) propose an integrated model of corporate sustainability “which links together six criteria that a sustainable business will need to satisfy. The six criteria are (1) eco-efficiency, (2) socio-efficiency, (3) eco-effectiveness, (4) socio-effectiveness, (5) sufficiency and (6) ecological equity.” (Issa, Tomayess and Chang, 2010). Seagate has on their business mindset this model, from which they define four pillars to provide their cloud service: privacy, security, brand ethics and compliance to build trust and respect around their data management (Seagate, 2021)

In retrospective, there are so many benefits and advantages that evidence the importance of the implementation of cloud computing in business today, although, there are still some challenges regarding CSR. They are not that relevant compared to the value of this technology.

7.1.4. CSR and Big data

In the recent years where the internet is spreading over the global economy, the amount of data surfing around is getting finally the importance it deserves. “Big

Data” is the term used to refer this phenomenon and almost every single organization needs and seeks this data, being also opened to pay for it.

When it comes to Big Data, we must also consider huge companies like SAP®, a platform with a lot of applications based on the collection of relevant data for doing and managing businesses. The benefit of using “big data platforms” is to centralize and organize in a harmonic and efficient way. Nevertheless, there are some discussions around the topic regarding CSR. It is mainly due to discrimination in employment, housing, credit, and consumer markets. Devah Pager & Hana Shepherd (2008). Another issues that affect this is law regulation and privacy protection.

Regarding the last two issues, under the EU data protection there are data quality requirements that controllers (a person or an organization that determines the purposes and means of the processing of personal data) must follow. Bourreau (2017)

- Lawful, fair, and transparent processing
- Purpose limitation
- Data minimization
- Accuracy
- Storage limitation
- Integrity and confidentiality

Case study provided by Unisoft, a German company which not only provides 3D Printing services but also AI applications and blockchain services, has a good example of how it could affect the implementation of big data services. It refers to the implementation of a mobile app that would centralize digital contact management in SME businesses. Unisoft (2021) As it was previously mentioned CSR issues come along again such as workers integrity and confidentiality could be in danger, being this a challenge to be overcome, and also purpose limitation, due to the company must delimited and respect labour purposes.

On the other hand, there are some discrimination problems regarding collecting and using data from customers and employees. Regarding credit for example, banks and financial institutions use this information to determine if an individual is suitable to loan him/her money. However, this process usually is affected by an inherent bias which discriminates for different reasons that are not actually relevant for the process. Gillis, T., & Spiess, J. (2019). So far, privacy, law and discrimination are the most relevant topics to deal with in order to adjust to a sufficient CSR policy that provides wellness in every aspect to customers and employees in the workplace and in the market.

Nevertheless, it has good impact on many aspects of the economy as well. For example, companies benefit themselves using big data platforms to carry out correctly and efficiently their accounting and commercial activities, as well as other practices such as the recruitment process and forecasting product sales. At the end of the day the use of big data brings relevance to the company in terms of decision making on every department and level of it.

7.1.5. CSR and 3D printing / Additive Manufacturing

The next trend that has been spreading worldwide is the transformation of the manufacturing sector, which is falling slowly apart against the advance of 3D printing. It is also very well known as additive manufacturing where companies such as Siemens reimagine, reinvent and redesign products. As they affirm, at their Digital Enterprise Suite one could find end-to-end solutions for Additive Manufacturing, leading to sustainable competitiveness, which is nowadays one of the most important inputs a brand-new technology of the industry 4.0 could bring. They count with 55 AM machines, winning the title of frontrunner in both production and service provider.

Moreover, by definition a 3D printer can print out anything, from a lithium-ion micro battery to a human kidney, demonstrating the huge capability that this emerging technology has. (Atala, 2011). Comprehending how the printer works is fundamental to analyse its impact on any corporate social responsibility policy or strategy.

“3D printers print by setting raw ingredients into two-dimensional patterns on a platform and gradually raising to stack one layer on top of another until completion. (Tran, Jasper, 2015)” In the same way as with 2D printers, 3D printers follow an electronic blueprint to print, which is called a Computer-Aided Design file (“CAD file”) creating the place to create designs from scratch or even to scan objects, which could be edited and shared through the Internet. An example of the production and implementation of the 3D printer is the case of the German company German RepRap with its printer X-Series 3D Printer based on Fused Filament Fabrication (FFF) technology which brings the capability to use a variety of materials.

The relevance of 3D printers is based on the following production methods: injection moulding and machining. Injection moulding is a method to produce a huge number of exemplars of a single object or product, while machining is the combined effort of transforming a raw material into a desired final shape by a process that removes a material (Kennedy, Elizabeth J (2015). This could represent financial benefits for the company in terms of reducing salary costs and/or less

machinery expenses, although it may breed discontent as some employees might lose their jobs or might be replaced.

It is also important to say that the potential risks are already in the focus of researchers. “The most significant risk is that “some of these 3D printers emit ultrafine particles (UFPs) at concentrations that maybe hazardous in confined spaces.” (Gallondaily, 2014). Issues concerning user health and user safety have been worrying CSR managers who consider the implementation of this new method in their manufacturing process. Nowadays, when it comes to health it is even more crucial to have a guarantee that in this case the product does not harm the user. To resolve this issue, Mike Buss, a maker and a software engineer has developed an air filtration system using a fan, a microcontroller and sensors to use with 3D printer technologies such as Fused Filament Fabrication (FFF) or Selective Laser Sintering (SLS). German companies such as 3DXXL with headquarters in Stuttgart are currently using the previously mentioned technologies.

Therefore, discussions on how to meet the employee and customer conditions and at the same time use 3D printers have been taking place since the technology emerged. Finding effective solutions will lead to success in this industry.

In addition, extensive public control must be exercised to face the CSR challenges in terms of desirable workplaces. Law must guarantee working conditions in factories even if they are implementing this kind of technology. Also, it must be regulated what raw materials are allowed to be used in the 3D printer and so forth. Furthermore, law should also regulate intellectual property of 3D Printing.

7.1.6. CSR and Blockchain

Blockchain is known as a database distributed peer-to-peer that contains a growing number of transactions. Each of these transactions are referred as block, and are secure through cryptography, time-stamping, and validation by every authorized member of the database using algorithms. Thus, every transaction is attached to the previous transaction in a sequential order, creating a chain of transactions or blocks. The only method to change or edit a transaction is by adding another one to the chain. (Vasquez, 2021)

Blockchain technology is an extension of distributed ledger technology, which is known mostly for being used in cryptocurrency although it has several applications, some with more direct relevance to advocate sustainability. A blockchain-based supply chain can improve processing and storing of products in terms of quality, quantity, location, ownership, etc. These improvements are often called game-

changers, in which the blockchain combines with other Fourth Industrial Revolution technologies to deliver possible solutions. (PwC, 2018)

Analysing how blockchain is associated with corporate social responsibility, it is important to understand that CSR is a self-regulating business model that helps a company to be socially accountable - to itself, its stakeholders, and the public. Many components are adapted over time, and this helps the company to be conscious of the impact they have on all aspects of society, including economic, social, and environmental (Munro, 2020).

Nowadays, companies are facing issues related more and more with corruption, human rights violation, gender-based violence, water security, modern slavery, and environmental degradation; and not only investors are pressuring them, but also customers want to know what actions they take to solve these problems. This is one form we can relate corporate social responsibility with blockchain through the global supply chain transparency. Solutions that are based on blockchain often provide for transparency and traceability to build confidence in operations, because this will expose any illegal or unethical trading or activity, reduce administrative costs, improve monitoring, verification, and reporting. Breaking down some of these barriers will make it easier for the customers to evaluate not only the final product but the whole chain itself, providing for a more informed purchase, making it important for the companies to implement more responsible actions. (PwC, 2018)

Consideration should also be given to the challenges that may arise when attempting to apply blockchain technology. Organizations need to determine the design of the system, and each role in the transaction validation process, besides the larger storage systems the companies will require as backup. In addition, professionals need training into data analytics and design smart contracts due to the lack of awareness of this technology. There are also other concerns involving proper regulation and security protocols to secure privacy (Vasquez, 2021).

It is relevant to consider the context in specific countries like Germany. The Europe's General Data Protection Regulation (GDPR) attempts to facilitate the ability to employ control over their personal data embodying consent, this personal autonomy is a key principle in the fabric of GDPR. Therefore, the right of autonomy is of great importance to understand the limits of data protection. Informational self-determination was embedded on the data protection ecosystem and the Population Census decision establishing informational self-determination as a constitutional right in Germany (Kulhari, 2018)

“The standard setting process has to keep in mind that the participating technology is compliant with mandatory legal requirements.” This implies that if blockchain technologies can be compliant with the legal requirements of the GDPR, it could

become a solution incorporated as a technical standard for data protection by design. An issue that can surface is the inability to determine a single controller, due to the blockchain being composed of nodes, which can make useless many of the data subject rights within the framework of the GDPR, and the heavy fines. (Kulhari, 2018).

7.1.7. CSR and Robotics

Technology has advanced rapidly in the last decades, and the idea of robots have evolved from just a tool to a social entity, and its social practices. The definition of the term robotics found in a business dictionary refers to the industrial use of robots to perform repetitive tasks, being an application of artificial intelligence. This can lead to a lot of question into what the capability of robots is, the robot community culture, and where the line of ethical and unethical is in robotics. (Samani, et al., 2013)

Robots have shown advantages over humans which makes them ideal for assuming roles in society, an idea that still sounds absurd. However, the technological trends, presence in our daily life and the acceptance of it all, makes the idea of robots in position of responsibility unavoidable and desired. Clearly, there are limitations of robot intelligence, some argue that computers will never be able to replace humans or live amongst humans as equals, due to the lack of understanding of the world and the need to gain experience with every action it performs. Further, it can limit creativity because of the ability to think critically. Unlike humans, robots cannot criticize themselves, and it is eventually up to humans which work is considered worthy. (Samani, et al., 2013)

The sector where robotics is being used a lot is in the hospitality industry, ability to cook complex meals, serve customers, fulfil orders of burgers, baristas to three beverages in 40 seconds, etc. The ongoing increase in hospitality service robots seem to have some of the following reasons: increased cost-effectiveness, avoidance of human errors, more accurate demand prediction, better quality control, better resource utilization, improved process management. (Tuomi, et al., 2020)

Robotics and machines are an important factor in production line, environmentally as well as economically. That is why the proper use of robots can contribute to a reduction of energy consumption, giving companies that handle robotics, a better cost effectiveness ratio. It can also be shown to consumers and stakeholders as an environmentally friendly initiative by not increasing the expenditure of limited resources. Although there are still issues such as gender or racial discrimination in

robotics, this can be seen as a great alternative to some current concerns. (Wang, et al., 2018)

An alternative issue to robotics is the liability for damages caused by the robot itself and since robots not only follow instructions but learn from experience as well, some of the conclusions draw by the machines cannot be predicted neither by a human producer, programmer, or user. Solutions can vary to private fund or an insurance system for those who have suffered damages, but it is difficult to accommodate acts of nonhuman agents.

Legal systems in Germany, whose criminal law doctrine is still rooted in 1900 century philosophy, has resisted the idea of expanding liability to nonhuman agents, corporations, or legal persons other than natural persons. For them an act requires an autonomous will, but robots can determine the next step to take in order to reach the goal set for them. This open question whether an Intelligent Agent makes autonomous judgments or makes choices according to its programming, is not the only issue on liability as the social and moral consequences are still unclear (Gless, et al., 2016).

7.1.8. CSR and Virtual reality and Augmented reality

Virtual Reality is a technological system with specific features, such as 3D goggles and wire clothing, that allows a user to experience telepresence in a real or simulated environment. A key component of virtual reality is immersion, not to watch a screen but to become part of the reality itself. Augmented reality is when a real environment is augmented by virtual objects, meaning any system that contains real and virtual content, is interactive in real time, and is registered in 3 dimensions. The biggest difference to virtual reality is the lack of complete immersion requirement. Some of the following are domains in which VR or AR are being used: education, architecture, marketing, entertainment, manufacturing, military, health care, mental health (stress disorders). (Steffen, et al., 2019)

Virtual Reality and Augmented Reality have potential uses in entertainment, architectural design, surgical simulation, flight simulation, battle simulation, education, and cyber-sex. These applications exist thanks to the user's capability to become anyone or anything and be with anyone anywhere, allowing people to participate mentally in any activity without being present physically.

Automobile companies have systems to design and make hypothetical cars for a virtual test drive, so customers can give feedback without losing millions of dollars on a real car. Simulators could be used by surgical students to display a detailed human body that would react almost exactly as a living human being, but in a slip

or error, the student can backtrack without waste a cadaver or harm any human being. (Bletter, 1993)

One of the biggest challenges of the growing demand for virtual reality and augmented reality is the burden of the world’s information and computing technologies (ICT) and their potentially carbon footprints and unsustainable consumption. Currently the ICT industry produces about 2 percent of global CO₂ emissions, a similar level to the aviation industry, and if it is not controlled, in five years that number will be more than double. In addition, the strategies for optimizing the resulting user experience may end up impacting the ecosystem due to the different elements needed, batteries, googles, wires, etc. Nevertheless, VR and AR can also lead the path to a more sustainable approach, with systems able to continuous self-improvement in increasing efficiencies and decreasing carbon footprints. (Elmirghani, 2017)

Even though it is expected that virtual reality or any technological advance will be used for improving the quality of people’s lives, no technology is inherently beneficial, and it can be seen already in areas such as marketing, shopping, audio-sex, or cyber-sex. Inventors cannot control the technology once it moves away from them, but they can prevent it by training and funding areas where they would be valuable such as medicine or education. However, “because of the high cost, the business world may well start using virtual reality before education does.” (Bletter, 1993) Virtual can become part of the solution for law and protection in other technologies “. The wave of the future, at least in data privacy law but maybe also beyond, is probably a mix of personalized defaults implemented through virtual personal assistants and only occasional active choices.” (Busch, 2019)

7.2. Emerging manufacturing technologies coming with the industry 4.0 (case study from Germany)

Name of the practice	Augmented Reality in Audi
Company, Region/City	Audi AG Ingolstadt, Bavaria, Germany
Background of the industry sector	
Description of the problem	The virtual presentation of three-dimensional holograms displayed in their real environment helps planners to better assess the future situation. As a result, prototypes of containers or



	equipment, etc., which are very complex to produce, are no longer necessary.
General description of the practice	The "LayAR" (for "layout" and "augmented reality") system supports Audi's logistics planners in setting up new logistics structures in an existing production hall. The software uses existing CAD data of various objects, such as shelves, containers, and parts. LayAR visualizes this "digital twin" as a three-dimensional hologram on the AR device and projects it life-size in the real environment.
Reasons for intervention	Prototype containers or equipment are no longer necessary.
Achievements and results	<ul style="list-style-type: none"> - to check that the design coincides exactly with the final product already assembled. - to know in a very intuitive way the final result that the vehicle should have. - to reduce design and/or assembly errors. - to reduce the time to detect assembly errors to less than 15 minutes. - reduction of prototypes created. - to reduce costs and time.
Insights for applicability and further improvement	<p>It helps to recognize problems early on and to develop solutions quickly. It also visualizes the mechanical system of the device, which allows its translation and rotation.</p> <p>It can affect the production department as it facilitates the correct assembly of the parts to be placed in the vehicle. It also makes assembly time shorter, since the operator knows at all times where and how to assemble the parts.</p>
Transferability into different fields and sustainability	LayAR will also soon be used to start up electric vehicle production at the main plant.

7.2.1. CSR and Robotics, unmanned systems, autonomous vehicles

As we could have seen in the 20th century robots and machines had taken over almost every single industry, a phenomenon called “Industry 3.0”, describing a situation in which a repetitive task is automated and performed completely by groups of robots and machines. A clear example of it is the automobile industry such as the German one. BWM does four steps in their assembly line. It consists of a press shop, where high-tech machines process more than 10,000 tons of heavy rolls of steel and aluminium sheets, better known by “coils” which are cut to form moulded parts such as side frames, doors, hoods and roofs, all this made by a modern, fully automated high-speed servo presses. The production process in BWM and in some other big companies has been up to a 95% automated. The process continues with assembly at the body shop, then through paint and finally mounting where the car starts to get in shape and functional (BMW Group, 2021). The development of new technologies has not come to a halt. Industry 4.0 has already been advancing and companies such as Bosch are proposing and developing new IT solutions that will fit with the implementation of AI robots, unmanned systems, and the so desirable autonomous vehicles. Control plus is one of their solutions. It is an independent automation software that helps you incorporate new machines and systems projects within the shortest possible time. Bosch (2021).

However, each step further on the development of new technologies brings also social and ethical discussion as Kate Darling affirms on their paper about the effects of anthropomorphism, empathy, and violent behaviour towards robotic objects, “From transportation to health care, the military to education, and elderly care to children’s toys, robots are entering our lives in new ways, many of which raise social and ethical questions. “(Darling, 2012). “Social Robots” as she likes to call them are those agents that interact with humans on a social level, communicating through social cues, display adaptive learning behaviour, and mimic various emotional states. These agents are able to work without having the preoccupation of getting sick in the workplace, which is very important during these pandemic days. It is already being used by Edeka on their supermarkets: It is called “Pepper” and its job is to remind Edeka workers and clients to wear masks and to follow the distancing rules. Another such agent is “James” who is being used by a few German nursing homes. Its job is to facilitate the virtual visits in order to connect family members with their loved ones.

In Germany it is not like before the pandemic. In fact, according to a report from 2017 prepared by the Nomura Research Institute, Germans tend to refuse new technologies and see robots mainly for industrial processes. However, this mindset has been changing, mainly as a consequence of the COVID-19 restrictions and distancing rules. A study, conducted by a research team at the TU Darmstadt surveyed around 250 Germans on their opinion about social robots at work. The team has found out that “more than two thirds of the respondents see a clear

advantage of service robots during a time when human encounters risk infections”
(Zhijiang Zhao, 2021)

The principal concern about CSR in Germany is unemployment, according to an annual survey titled ‘Die Ängste der Deutschen’ (the fears of Germans) made by the R+V insurance firms. It has found that the fear of unemployment has aggravated from 28 percent in 2019 to 40 percent in 2020. Example of this is the already mentioned robot workers; Pepper and James that could replace low skills jobs where most fears are focused. Setting up guarantees to low skill workers would be on the list if Germany wants to fully accept and implement Robots in its economy.

Chapter 8. CSR and Industry 4.0 – evidence from Bulgaria

8.1. CSR and social legitimacy (case study from Bulgaria)

<p>Name: AVIS Ltd.</p>
<p>Short description: "AVIS" Ltd. – Village Buzovgrad – a leader in the food and beverage industry. The region is ecologically clean and the climate favourable to the production of fruits, vegetables and oil-bearing roses.</p> <p>The company is registered as a farmer and processor of fruit and vegetables and has its own production base on an area of 40 decares and built-up area of 2000 square meters. The agricultural land is in close proximity to the factory.</p> <p>Produced vegetables are processed to sterilized and non-sterilized cans for direct consumption. In recent years, the company also produces rose oil with trade name: Oil rose - Rosa damascena.e</p> <p>The production of Avis Ltd. is realized in the big commercial chains, catering establishments, industrial enterprises and others. The company provides sustainable jobs for 26 people, half of them for people with disabilities.</p>
<p>Recognition 2016 – Honours for "Innovative product of the Fifth European Fair of Social Enterprises and Cooperatives of People with Disabilities" 2014 – Honours for "Innovative product of the Third European Fair of Social Enterprises and Cooperatives of People with Disabilities"</p>
<p>Legal form: Social Enterprise</p>
<p>Website/Links: https://avisltd.com Facebook: N/A</p>
<p>Films: N/A</p>
<p>For contacts: Avis Ltd. Brigadirski lager 1 str., Buzovgrad, Bulgaria tel: +359/431/70 160 +359 898 74 40 36 +359 898 74 44 29</p>



e-mail: avis_adamov@abv.bg

Author of the example:

**National Federation of Employers of Disabled People, NFEDP, Sofia,
Bulgaria**

Name: Municipal Social Enterprise Lozana Ltd.

Short description:

Lozana EAD is a municipal trade company providing employment for people with disabilities. The company employs 45 people, of whom 26 are disabled.

The main activities that the Company performs are:

1. Production of rollers for cash registers and other devices and manufacture of plastic products.
2. Printing services. Printing of forms, books, journals, business cards, folders and other articles of paper and paperboard.
3. Packaging, wrapping and labelling of bulk raw materials - granulated, powdered and liquid products.
4. Production of vegetable oils from sunflower, flax, sesame and milk thistle (*Silybum marianum*), extracted by cold pressing. Cracking of walnuts, hazelnuts and other nuts.
5. Production of Herbal Drinks from herbs dry mix – “Zdrave” (Health), “Prolet” (Spring), “Naslada” (Delight).
6. Laundry - laundry and ironing of bed linen of hotels, kindergartens, social homes and other clients.
7. Specialized transportation of people with disabilities on the territory of the Sofia Municipality.
8. Lozana has a new Health and Relax Centre with two salt rooms for children and adults. The centre has a procedure called halotherapy with halo generators.

For the above-mentioned activities the Company has concluded contracts and executes orders mainly with partners in the territory of Sofia Region and Bulgaria.

The Company participates actively in exhibitions of goods and fairs. In recent years, Lozana EAD has managed to become a company with a sustainable social business model by ensuring permanent employment of disabled people from Sofia, guaranteeing stability of the already created jobs and striving to create new jobs through improving working conditions and diversifying production.

<p>Recognition</p> <p>2016 - First prize in the category "Social innovation related to employment" of annual awards for social innovation of the Ministry of Labour and Social Policy.</p> <p>2016 – Honours of "Innovative product of the Fifth European Fair of social enterprises and cooperatives of people with disabilities.</p> <p>2014 – Honours of the Third European Fair of social enterprises and cooperatives of people with disabilities - to introduce new production.</p>
<p>Legal form: Municipality unit</p>
<p>Website/Links:</p> <p>https://balkanfair.online/lozana</p>
<p>For contacts:</p> <p>Lozana Ltd. 50 Varna Str., Sofia 1504, Bulgaria Tel./Fax: +3592 4666758 Mob.: +3598896752720 E: lozanaead@abv.bg</p>
<p>Author of the example:</p> <p>National Federation of Employers of Disabled People, NFEDP, Sofia, Bulgaria</p>
<p>Name: Municipal Enterprise Lozana Ltd.</p>

8.2. CSR and employment of people of disabilities (case study from Bulgaria)

8.2.1. Labor market and CSR

Previous industrial revolutions and demographic change are the main reasons for increased prosperity, high productivity and the continuous creation of new jobs. Historically, these transitions have not been without risk and have been marked by their upheavals. The fear of job destruction through the emergence of new tools for the production of goods and services and their new processes cuts through the history of the industrial economy, leaving us with memories of the Luddites, Keynesian technological unemployment, and the signal of the "end of manual labour" that appeared in the early 1990s.

The new Industrial Revolution is built on technologies that are increasingly available at low prices to companies and individuals. These technologies are developing at a variable pace, and their consequences affect business models and

production processes, above all they introduce new ways of connecting with consumers and markets through more efficient, personalized and immediate channels of coordination. Dynamic changes in business models are having a major impact on employment, with many of the major drivers of transformation currently impacting global industries expected to have a significant impact on jobs.

The modern economic and political reality poses a number of challenges, especially to specialized enterprises and cooperatives for people with disabilities, caused by globalization, the stagnation of the domestic market, as well as the need to increase the quality and competitiveness of their products. All this necessitates taking radical measures to create the necessary prerequisites for reaching the requirements of the European market.

In this regard, the efforts of the organizations of these structures for development guidelines, adopted by their general meetings, are mainly aimed at:

- technological renewal leading to increased productivity and high quality of production;
- increasing the capacity and competitiveness of the manufactured product;
- introduction of marketing as a leading management function.

From Bulgaria's point of view, specialized enterprises are that system of enterprises that is a continuation of the system of specialized companies and cooperatives before 1990, when they provided work for more than 50 thousand people with disabilities, as well as small and medium-sized enterprises for people with disabilities established after 1990.

According to the Law on People with Disabilities, specialized enterprises and cooperatives of people with disabilities are those registered under the Commercial Law or the Law on Cooperatives; produce goods or perform services; have a relative share of people with permanent disabilities as follows:

- for specialized enterprises and cooperatives for blind and partially sighted persons - not less than 20 percent of the listed number of personnel;
- for specialized enterprises and cooperatives of hearing-impaired persons - not less than 30 percent of the listed number of personnel;
- for specialized enterprises and cooperatives of persons with other disabilities - not less than 30 percent of the listed number of personnel;
- for specialized enterprises and cooperatives of persons with intellectual disabilities or mental disorders - not less than 20 percent of the listed number of personnel;
- and are registered in the Register for specialized enterprises in the Agency for the Disabled.

The jobs and the level of education in the specialized enterprises show that worker positions and those with secondary education predominate. However, the share of those with higher education is relatively good (38%). The described results are explained by the economic sectors in which the specialized enterprises operate. In general, however, any increase in productivity and added value will require investment in qualifications and skills and/or the recruitment of staff with higher levels of qualification.

The age structure of employees in specialized enterprises shows that 44% are over 55 years of age, which indicates a tendency of staff aging. This age group requires special support in working conditions, adaptation of jobs and processes in order to extend people's working lives and maintain their productivity.

Duration of employment shows that over 53% of those employed have been in the respective enterprises for more than 6 years, indicating relatively good sustainability of overall employment compared to standard subsidized employment programs. This, in turn, is a good testimony to the potential of these enterprises to create sustainable employment, especially if they are stimulated in this direction. In connection with the above conclusion, the difference between the programs provided by the Employment Agency and those by the Agency for People with Disabilities should be noted. Under the programs of the Agency for People with Disabilities, employment is ensured through business support of enterprises, and for this we have sustainable employment. At the Employment Agency, it is often only a question of subsidized employment, which very often lasts only for the monitoring period after the end of the project. In addition, with the programs of the Employment Agency, in most cases we have employment in a usual work environment, which in most cases covers people with disabilities who are in the labour market anyway. For this, specialized enterprises and sheltered employment centres must remain as a tool to target the more severe forms and degrees of disability and those who are not active in the labour market.

In specialized enterprises, wages between the minimum and the average for the country prevail (55%). There is also a high proportion of those earning up to the minimum wage (39%), indicating that overall remuneration is not high. The lower productivity of these businesses, including the lower productivity of some of their staff with disabilities, is certainly having an impact.

In the case of employees with disabilities, there is no clearly defined discrimination in terms of age, types of jobs, education. However, the share of people with disabilities in the administration is about 7 percentage points less compared to all employed in companies. The share of disabled people with higher education is also lower, but they have a slight advantage in the group with secondary education. In general, however, these are not trends of discriminatory behaviour. Moreover, if

the employment of disabled people with more than one disability or those with mental disabilities is stimulated, objectively one can expect an increase in the proportion of those with lower education and those occupying jobs that require lower qualification. Therefore, the described structure of employment of people with disabilities is neutral rather than drawing positive or negative conclusions.

The structure of disabilities in specialized enterprises shows that companies prefer to hire persons with a lower degree of disability. This shows that for natural economic reasons, businesses are looking for people with a lower degree of disability. The eventual targeting of the group with more severe disabilities or those with mental problems will require additional public stimulation or the promotion of a new type of enterprise such as sheltered employment centres within the meaning of the Disability Act.

In terms of remuneration, people with disabilities are at wage levels down to the minimum and lag behind in the middle-income segment compared to the rest of the staff. The reported difference cannot be explained by the jobs held and levels of education, where it was seen above that there are no significant differences. For this, a connection can be sought on the one hand in the lower productivity within the work process itself (for example, there are enterprises where the pay is at the norm or some of the people with disabilities work less than full time) and on the other hand due to the fact that not a small part of the employment of people with disabilities is often financed through various public programs where we often have limitations on the remuneration received.

The difference in pay between people with disabilities and other employees is not very large, and they are often compensated by the additional financial payments they receive in the form of disability pensions, benefits and others. For this reason, and in the medium term, support for the employment of people with disabilities should focus on issues of productivity, health, motivation, adaptation and, to a lesser extent, purely subsidized employment. This applies especially to those already employed. While those still without employment could be assisted through a combination of services and subsidizing employment and job creation.

Various types of support services (coaching, personal assistant, transport, health services, etc.) from the group of supported employment are familiar to a large part of specialized enterprises. At the same time, each of the types of services are found in specific enterprises and are not a general practice. The latter is logical, insofar as enterprises provide them in most cases with their own funds and efforts without receiving external public support.

In addition, there are no guarantees that the supporting services are provided according to certain quality standards, to the extent that none exist. For example,

the adaptation of work processes is something new for Bulgaria, but still around 32% of the companies state that they implement it. Another example is with the assessment of work ability. In Bulgaria, the methodology of the medical examination, on which the TELK system is based, is mainly used, which focuses on the assessment of incapacity for work, and not on the person's working abilities. The use of specialist staff to deliver services is also rare, again casting doubt on the standard and quality of support services.

8.2.2. Competitiveness and development of specialized enterprises

In recent years, there has been a tendency to diversify the economic activities in which specialized enterprises operate. While in the past the focus was on manufacturing, companies from the service sectors are gradually stepping in. There is an underrepresentation of high-value-added sectors related to high technology.

The number of actively operating specialized enterprises depends on different types of advantages that are given as part of targeted public policies. On the one hand, it is a risk for their survival when such policies are absent, but on the other hand, it makes them an effective tool for implementing employment policies for people with disabilities.

Micro and small enterprises prevail, with the exception of a few medium-sized ones and without taking into account the legal affiliation of the enterprises that work as part of the system of the Union of the Deaf in Bulgaria and the Union of the Blind in Bulgaria. On the one hand, the prevailing micro and small enterprises make employment in these firms less dependent on single cases of economic crises. On the other hand, medium-sized and large enterprises can sometimes realize significant increases in employment as a result of favourable economic trends. Therefore, attracting larger enterprises at this stage would rather have a beneficial effect on the employment of people with disabilities. A significant share of the means of production and the material base of the specialized enterprises needs renewal and modernization.

The effect of the higher share of people with disabilities in the total number of staff of specialized enterprises leads, according to the surveyed enterprises, to: lower labour productivity (53.1% of those surveyed); more frequent absences for health reasons (48.4%); insufficient qualifications and work skills (32.8%); need to adapt the workplace and environment (31.3%); lower motivation to work (23.4%); insufficient work habits (21.9%); more frequent absences for personal reasons (18.8%); insufficient education and qualification (17.2%); problems with labour discipline (17.2%).

The main challenges to the development of specialized enterprises, according to the respondents, can be grouped as follows: lack of investment funds (67.2%); lack of skilled labour (65.6%); old equipment (62.5%); old material and technical base (62.5%); lack of funds for marketing and advertising (57.8%); lack of labour (56.3%); lower productivity of employees with disabilities (56.3%); low degree of innovation (51.6%); lack of working capital (48.4%); weak demand for the offered products and services (48.4%); payment of the first three days of sick leave at the expense of the employer (42.2%); unsatisfactory working conditions (34.4%); labour turnover (31.3%); repayment of building tax and household waste tax (31.3%); payment of the one-off electricity compensation when the price is increased (28.1%); weaknesses in management and management processes (14.1%).

At the time of completion of this paper in December 2021, high electricity prices appear to be a very serious problem for specialized enterprises. The problem is further aggravated by the fact that compensations for electricity are on a common basis with all other companies in Bulgaria, without taking into account the social function of specialized enterprises and their lower competitiveness.

Also, the Covid pandemic brought additional challenges to their development: reduced orders (71.9%); turnover drop by more than 25% for 64.1%; frequent absence of employees (54.7%); suspension of individual activities in enterprises (46.9%); reduced working hours by 32.8%; closure of individual productions and reduced volume of work (29.7%); downsizing (23.4%)

8.2.3. Public support for specialized enterprises and the employment of people with disabilities

At first glance, there are various forms of public support for specialized enterprises - profit tax refunds and insurances, production investments, those in working conditions or investments for employment and adaptation of jobs, training and others. The best-represented sources of support are income tax refunds and social security, and two of the programs of the Agency for People with Disabilities for business investment and those for improving the working and social environment of companies.

The economic and social programs of the Agency for People with Disabilities are the two most targeted and accessible programs for specialized enterprises. Not only do they have regular annual access to them, but they are relatively easy to implement, which puts the focus on the goals of the programs, not on their administration. It is noteworthy that support for training and qualification of personnel is not used enough by specialized enterprises, although similar programs are available on a regular basis through the Employment Agency and periodically through the Human Resources Development Operational Program.

There is another challenge with the programs of the Employment Agency. For them, people with disabilities are one of the many target groups they work with in EA. Thus, there is no adequate specialization for working with this most difficult group on the labour market. In addition, the Employment Agency mainly work with registered unemployed people with disabilities, who are a very small part of those of working age. Support for supporting services comes mainly through some ODA programs, but specialized enterprises are poorly represented there.

In general, specialized enterprises have a weak presence in programs with European funding. Thus, despite the availability of a resource, it practically remains unavailable to them due to various reasons listed below.

The main challenges in applying for and implementing the various forms of support are related to: onerous requirements for the preparation of project proposals (57.8%); the need for significant upfront payment of various project costs before program funds are recovered (53.1%); high requirements for own financial participation (42.2%); binding commitments for employment and financial and economic indicators for the post-project phase (43.8%); insufficient amount of support (35.9%); inadequate evaluation criteria that do not correspond to their financial, human and technological capacity (35.9%); the programs finance inappropriate activities and expenses (29.7%); requirement for lack of obligations to public institutions (26.6%); the minimum state aid threshold (9.4%); finding suitable persons with disabilities to provide employment (62.5%); long periods of inspection, verification and payment under some programs (32.8%).

8.4.4. Organization of public investment support for specialized enterprises

Evidence shows that the practice for giving public support to specialized enterprises tends to result in their minimal, sporadic participation in other support programs. It is therefore strongly recommended that support for these enterprises be organized as follows:

- a) Where possible the support is within an executive unit. Such a decision can be organized as before within the Agency for People with Disabilities, or as an executive unit under the future State Agency for People with Disabilities, or as a separate fund under the Ministry of Labour and Social Policy, or by transferring all support to some from the existing funds to this Ministry.
- b) Concentrating investment support in one place allows overlapping between different programs. Such, for example, exists between the programs of the Agency for People with Disabilities for starting an independent business activity and as a result of the growth of some of the newly created enterprises

- into specialized ones, which are again supported by the programs with an economic focus of the Agency for People with Disabilities.
- c) In the same direction is the fact that the management of investment projects in one place allows for specialization on the part of the relevant agency and staff. Support for specialized enterprises and, accordingly, the disabled people employed in them is the main mission of the relevant structure. In the case of dispersal of these programs between different structures, they lose focus and sometimes the lack of interest of these structures, insofar as people with disabilities and specialized enterprises are not their main focus of work.
 - d) A clear distinction must be made between projects for subsidized employment, such as those offered by the Employment Agency, and those that support specialized enterprises. In the second case, the support is for investments that lead to employment, rather than directly subsidizing jobs. In this case, we have much greater sustainability, insofar as business initiatives are supported and their profitability is assessed, which gives many times higher guarantees for the sustainability of this employment based on the enterprise's business model.
 - e) The overflow of support for specialized enterprises in standard programs for subsidized employment means that we are depriving ourselves of a well-functioning and time-proven mechanism, which will certainly lead to a worsening of the situation of specialized enterprises, a reduction in their number and a decrease in employment in them.

Specialized enterprises are an intermediate form of support for the employment of people with disabilities. They are halfway between sheltered employment centres and employment in a regular environment. In practice, they are one of the few forms of employment for people with disabilities that have stood the test of time and could be further developed in the direction of more employment for people with disabilities, inclusion of people with more severe forms and degrees of disability, adding support services as part of their activities, bringing them closer to some of the functions of sheltered employment centres. Thus, the latter can step on the existing and time-proven structures, especially at the beginning, when they are unknown and undeveloped in Bulgaria.

Thirdly, we would recommend that specialized enterprises become part of a complete ecosystem of forms of employment for people with disabilities, focusing on those 120,000 people with disabilities, of working age, who are not active, i.e., are not employed, not in training and not looking for work. This ecosystem should consist of the following support and employment agents and is in line with the European Disability Strategy 2021-2030 (II): Disability Employment Package (to be published in 2022), with tools for the development of quality employment and to support the transition to a regular labour market, which will also be deployed

through mutual training within the framework of the Platform for People with Disabilities. The ecosystem includes:

- a) Specialized vocational training and skills acquisition centres for people with disabilities who do not have the necessary skills, qualifications and work capacity required for a specific profession and/or jobs;
- b) Sheltered employment centres for people with disabilities who have multiple and/or mental disabilities and who have serious deficits to integrate into the labour market;
- c) The specialized enterprises of people with disabilities, which provide employment to people with disabilities who have a higher degree of work ability and skills, but still need the specialized support and environment;
- d) Supported employment in a regular work environment, for people with disabilities with an even higher degree of work ability and skills, but who need certain support such as (workplace or process adaptation, health services, coaching and others);
- e) And finally, a non-supported normal work environment, for those whose ability to work is fully sufficient for the relevant normal workplace without the need for support.

Some of the disabled people will have the opportunity to go through the different forms of employment, with each of them upgrading their work capacity. Others, due to the nature of the extent of their disability, may remain in some of the forms of employment without being able to move up to the other forms of employment. Of the listed types of employment, only specialized enterprises and regular employment are currently well developed. The remaining types are rather absent or can occasionally be seen in some sporadic projects financed as a type of social innovation. Therefore, efforts to create such an ecosystem are of vital importance if we want a large proportion of inactive disabled people to find their place in the labour market. The creation and management of such an ecosystem can be done, at least initially, only when a structure / organization recognizes it as its mission and purpose. Otherwise, we are doomed to single, unintegrated support that does not lead to lasting and comprehensive results.

List of project team scientific publication on CSR in Industry 4.0

1. Ivanovic-Dukic, Maja, Zahariev, A., Lepojevic, V. (2021). Corporate social responsibility in Covid-19 environment: evidence from Serbia and Bulgaria. *Emerging Trends In Global And National Economy: Proceedings of the International Scientific Conference - Nis, October 14th, 2021*. University of Nis, pp. 239-250, ISBN: 978-86-6139-222-1
2. Zahariev, A. (2021a) Corporate social responsibility under Covid-19 circumstances: Bulgarian business attitude. *Економіка і організація управління*, Volume 43, Issue 3, , pp. 6-13, ISSN: 2307-2318
3. Zahariev, A. (2021b). Measuring the impact of the COVID-19 pandemic on corporate social responsibility policies in Bulgaria. *Sustainable development and socio-economic cohesion in the XXI century – trends and challenges: International Scientific and Practical Conference. Book of proceedings*. Svishtov, November 8-9, 2021. AI Tsenov, pp. 67-74, ISBN: 978-954-23-2067-8
4. Zahariev, A., Angelov, A., Angelov, P. Mihaylova, M., Slavov, S., & Mladenov, S. (2022a). Designing an International Bachelor Degree Syllabus - Corporate Social Responsibility in Industry 4.0. *Abstracts & Proceedings of SOCIOINT 2022 - 9th International Conference on Education and Education of Social Sciences, 17-18 January 2022* (pp. 567-575). Istanbul: OCERINT. doi: <https://doi.org/10.51508/intcess.202279>
5. Zahariev, A., Angelov, A., Angelov, P., Mihaylova, M., Slavkov, S., Mladenov, S. (2022b). Designing an international bachelor degree syllabus - Corporate Social Responsibility in Industry 4.0. *International E-Journal of Advances in Social Sciences*, 2022, 22, pp. 49-57, ISSN: 2411-183X
6. Zahariev, A., Angelov, P., Mihaylova, M., Slavkov, S. (2022c). Corporate Social Responsibility in Industry 4.0 – From the Project to the Curricula. *Revista Romana de Statistica Supliment : Romanian Statistical Review*, issue 5, pp. 139-151, ISSN: 2359-8972