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FUTURE RE-EVOLUTION FOR QUALITY 4.0



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**FACULTY OF SCIENCES, DEPARTMENT OF ECONOMICS
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FACULTY OF SCIENCES, DEPARTMENT OF ECONOMICS
ROMANIA**



Grația Dana BOCA
ECONOMY –INNOVATION-COMMUNICATION-UNIVERSITIES
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Claudiu FARCAS
Technical University of Cluj Napoca,
Northern University Center of Baia Mare



14^{en} INTERNATIONAL SYMPOSIUM WORKSHOP

FUTURE RE-EVOLUTION QUALITY 4.0

REMEM

1	BIRTOC Daniela Elena	Technical University of Cluj Napoca Faculty of Sciences Romania
2	ALEC Ciprian	Technical University of Cluj Napoca Faculty of Sciences Romania
3	PIRLOG Paunita	“George Baritiu” Colleague Baia Mare Romania
	FILIP Crina	“Gheorghe Sincai” Colleague Baia Mare Romania
4	COZMA (PASCA) Cristina	Technical University of Cluj Napoca Faculty of Sciences Romania
5	MOS Andra	Technical University of Cluj Napoca Faculty of Sciences Romania
6	URDA Rodica	Technical University of Cluj Napoca Faculty of Sciences Romania
7	DOHI Bianka	Technical University of Cluj Napoca Faculty of Sciences Romania
8	HIRB Alecsandra	Technical University of Cluj Napoca Faculty of Sciences Romania
9	VISKURTHI Marsida	“Aleksander Moisiu” University Durres FASTP Albania
10	MEREUT Alexandra	Technical University of Cluj Napoca Faculty of Sciences Romania

11	COLCAR Mirela	Technical University of Cluj Napoca Faculty of Letters Romania
12	MURESAN Miriam	Technical University of Cluj Napoca Faculty of Letters Romania
13	POP Alexandru	Technical University of Cluj Napoca Faculty of Letters Romania
14	KRISTIQUI Dorian	“Aleksander Moisiu” University Durres FASTIP Albania
15	MENTOR Isufaj	“Aleksander Moisiu” University Durres Albania



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PERMANENT EDUCATION AND EDUCATION 4.0

BIRTOC Daniela Elena

Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

"Permanent education is the education of all people throughout their lives."

Abstract: *The concept of permanent education is specific to contemporary pedagogy or new education and covers a theoretical and action principle that seeks to systematize and regularize a certain reality specific to the problems of the contemporary world. It can be associated with another concept and principle, at the same time, the one referring to the permanent character of education, because, as Comenius shows (taking over an Islamic principle), education becomes a necessity for every individual "from the cradle to the grave". In addition to this principle, permanent education is based on other principles, such as: learning to learn and wanting to improve yourself. In this sense, N. Iorga stated that "the best school is the one in which you learn first of all to learn". Permanent education is the fundamental principle of education according to which the human being is subject to educational influence from birth through the social environment in which it develops and forms in ontogenesis. Permanent education involves the formation of behaviors specific to education, by integrating the human individual into an education system. Ability with intellectual work skills and a positive attitude towards learning that ensures preparation for self-education.*

Keywords: *permanent education, educational forms, continuing education*

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THE FUTURE OF INDUSTRY 4.00

ALEC Ciprian

Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

Abstract: *Technology has changed during three major waves, at the same time the perception of work has changed. As we advanced in time we noticed that a fourth wave appeared known as Industry 4.0. Enterprises Enterprises harmonize with the new situation and implement new technologies. Forecasts lead us to various which managers must decide on the new tsunami wave of automation and if they have the necessary resources to adapt to this new situation. Every business is a model that uses different input variables and makes predictions for different markets at different time intervals. The patterns obviously vary because the factors that include the rate of job changes and job creation, the speed of development and adoption of technology differ from one situation to another. The future for business is a close collaboration between human intelligence and machine intelligence. Mechanical minds will enhance and expand our own abilities, both cognitive and physical. The study presents an x-ray of the local situation and future prospects for a sustainable development of the region.*

Keywords: *Industry 4.0, tradition, sustainability, digital tools*

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GOOD PRACTICES IN OPEN INNOVATION

PIRLOG Paunita

“George Baritiu” Colleague Baia Mare
Romania

Abstract: *Open innovation has become a mass organizational process. Firms set up groups, allocate budgets and measure results. In this article, we identify twelve "good practices" associated with high-quality open innovation efforts. In our experience, these practices are key elements for the company's system, leading to high quality results when executed efficiently. The purpose of this article is to help management build practices in their open innovation system and bring continuous improvements to their processes. The model propoused by Slowinski (2004) “Want, Find, Get, Manage” provides a framework for describing these practices. The model was applied to the Maramures region, to bring an radiography of the fast-paced world of activity in the region. The study shows that the model has been applied to consumer products, food, electronics and cosmetics. Managers who want to improve their processes must start with the Want phase.*

Keywords: *open innovation, Slowinski model, management change, management built*

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SIX SIGMA: A KEY DRIVER FOR PROCESS IMPROVEMENT

FILIP Crina

“Gheorghe Sincai” Colleague Baia Mare
Romania

Abstract: *Six Sigma is one of the most common programs used in companies to improve quality management, the production process but also to reduce costs. The main goal is to improve the company's productivity and create a basis for improving goals. Key factors Total quality management, strong customer concentration and data analysis, financial results, and project management tools enable organizations to better support strategic directions focused on improving customer requirements by improving their own business systems and operational performance. This paper will describe a Six Sigma approach and present the results of empirical research conducted in a company in the region. All findings of this empirical research will provide a better understanding of the benefits of Six Sigma and a business and production guide to maximize results. and customer, employee and customer satisfaction.*

Keywords: *quality management, Sig Sigma, management change*

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INDUSTRY 4.0 -THE FOURTH INDUSTRIAL REVOLUTION

MOS Andra

Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

Abstract: Industry 4.0-the fourth industrial revolution found us unprepared, bringing a new challenge to managers. Technological advances in the fields lead us not only to innovation, but to real changes in production and the provision of products and services. The development of technologies such as artificial intelligence and machine learning, big data, cloud computing, augmented and virtual reality, new materials, 3D printing and the Internet of Things is a new way of life and living. The new trend is an opportunity, a necessity for companies to adapt to a new industrial reality. The application of digital technologies can change quality in different ways, for example, an organization can monitor processes and extract data from sensors in real time and the data can be further analyzed to predict the quality problems and maintenance needs of the organization so that defects can be significantly reduced. The paper presents a case study of a company and the ways in which it finds the necessary solutions.

Keywords: digital tools, Industry 4.0, management change, quality

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FROM TRADITIONAL QUALITY MANAGEMENT TO QUALITY 4.0

URDA Rodica
Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

Abstract: *Quality 4.0 aligns as a concept with the new wave of technology brought by Industry 4.0. This concept refers to a new type of quality management adapted to the digital environment. Companies investing in Quality 4.0 will achieve significant value chain improvements through operational and service efficiency, customer satisfaction and company culture. Quality 4.0 does not refer to technology, but to people who use their technology and processes. It does not replace traditional quality management practices, but builds and improves them. The term quality 4.0 was coined by Dan Jacob, research director and senior analyst with LNS research, a production research and consulting firm. Quality 4.0 is the application of industry 4.0 digital technologies to traditional quality management practices, which would lead to increased operational efficiency, improved business performance and business models. Its many advantages include real-time process monitoring, data collection and predictive maintenance supported by analysis. To succeed with the successful introduction, development and sustainability of Quality 4.0, organizations should take a multifaceted approach, explicitly addressing not only technological issues but also strategic, operational, tactical and cultural issues.*

Keywords: *quality management, Quality 4.0, management change*

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A CULTURE FOR QUALITY MANAGEMENT

DOHI Bianka

Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

Abstract: *Quality 4.0 will play a huge role in the entire value chain of an organization, from research and development to customer service and after-sales*

service customer. In terms of research and development. Quality 4.0 can be used to understand the type of customers today and tomorrow and their expectations through Big Data analysis and Voice of the Customer (VoC) analysis. Moreover, product development time and costs can be reduced using quality 4.0 tools in the research and development phase. In the case of after-sales service, field technicians can use mobile digital solutions, such as field service software, to improve preventive quality and update the customer experience. Key Ingredients for Successful Implementation of Quality 4.0 in Any Framework organizational are: leadership for Quality 4.0 organizational culture for Quality 4.0 and big data transmission. Fast communication systems in physical cybernetic systems in Industry 4.0 have generated a large amount of data that can be used by quality management systems. Big data will allow customers to understand their needs in a holistic and comprehensive way, as almost all customer needs will be mapped and analyzed. Integration into the product life cycle is one of the striking features of Quality 4.0 this will lead to a large amount of product usage data that can be used by manufacturers to monitor product quality and reliability. Consequently, performance quality can also be effectively monitored by collecting and analyzing the usage data of the products in the customer's hands, automatically, using artificial intelligence.

Keywords: quality management, management change, culture management

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TRIZ - A METHODOLOGY FOR CREATIVE PROBLEM SOLVING

HIRB Alecsandra

Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

Abstract: *Solving a difficult problem, if you want to innovate, if the project has reached a time of crisis or you are looking for solutions to improve products or systems in order to reduce certain costs or to increase the efficiency of a certain activity can be achieved using the TRIZ method. If you are looking for a new way to solve certain problems, then TRIZ can provide the innovative solutions that are needed. The TRIZ methodology offers innovative solutions to problems and is part of*

the creativity techniques frequently used in SixSigma processes and in the innovative initiatives of organizations. TRIZ is a method that allows the logical approach of creativity and innovation in solving difficult problems. Regardless of the field of activity, TRIZ can be used in losing a customer, reducing the demand for a product or predicting the potential failures of new products and processes and identifying ways to avoid them.

Keywords: TRIZ, creativity, innovation, managemnt change

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INNOVATION

MEREUT Alexandra

Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

Abstract: *The Oslo Handbook identifies four types of innovation: product innovation (material goods and services), process innovation, marketing innovation, and organizational innovation. In terms of product innovation, the definition of innovation includes the concepts of novelty, commercialization and / or implementation, in other words, if an idea has not been developed and transformed into a product, process or service, or not has been marketed it cannot be considered an innovation. Innovation is found as the ability to turn ideas into bills (L. Duncan). But at the same time, creativity consists in thinking of new things. Innovation is about doing new things (Ted Levitt).*

In a knowledge-based economy, such as the current economy, innovation is the main factor responsible for sustainable development. Innovation and continuous improvement are the key things that organizations need to do to survive in the competitive market. The paper aims to identify on the Maramures market the innovative products or services that are currently on the market.

Keyqords:*innovation, marketing, management change, quality*

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CREATING A CULTURE OF INNOVATION

VISKURTHI Marsida

“ Aleksander Mosisu ” University Durres

FASTIP

Albania

Abstract: *First, it is important for managers to understand the difference between innovation and creativity. When we think of innovation, we think of imaginative and original creations that solve problems and provide solutions. Creativity is the basis of innovation, but it does not guarantee innovation. Creativity is the ability to generate new and useful ideas, while innovation is the successful implementation of creative ideas. Companies today need to create an organizational framework created for and towards a culture of innovation. As a result, the work is more interesting and challenging, and the manager trusts the team, new ideas are encouraged. The paper seeks to identify the three factors - management practices that support a culture of innovation, organizational motivation and encouragement and last but not least resources. These three factors if combined can create a culture of innovation.*

Keywords: *culture, innovation, management change, motivation*

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ROMANIA AND CULTURE INNOVATION

COLCAR Mirela

Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

Abstract: *Romania is a little developed country from the point of view of innovation. The potential to innovate is huge in Romanian organizations, and entrepreneurship is a growth solution for Romanian companies. At present, innovation is the only lever with disruptive potential that can develop entire industries in just a few months. An interesting study published by Eurostat reveals that only one in five companies in Romania carries out innovation activities, which places our country on the last place in the European Union depending on the percentage of innovative companies. Romania remains the weakest innovator in the EU, with a score in the ranking of indicators from last year Table of innovation 2020, were located at only 31.6% of the average performance of the Union. Our country is the only Member State that thus has a gap of over 60% compared to the EU average. In the previous ranking, Romania had an innovation index of 31.4%, which shows that it will take many years until our country recovers from the gap and reaches the level of important innovators in the former communist bloc.*

Keywords: *innovation, management change, organizations*

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TRANSFORMING ROMANIAN BUSINESS WITH INNOVATION

MURESAN Miriam

Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

Abstract: Europe currently includes within its borders 6 of the 10 most innovative countries in the world in terms of innovation capabilities and the transformation of new ideas into products and services validated by the market. Europe has a growing number of entrepreneurship hubs, but barriers are emerging for new companies. Traditional models are not enough to provide the necessary in the future. The Eurostat report shows that Romania, Bulgaria and Latvia are on the last places in the European Union in terms of innovation. In this sense, for the academic environment, it is an opportunity that must be used and performed in research. With the arrival of the Industry 4.0 paradigm, companies will face not only challenges in finding the skilled employees, but also other challenges related to their existing workforce.

Keywords: *innovation, quality, management change, education*

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QUALITY MANAGEMENT AND QUALITY 4.0

POP Alexandru

Cluj Napoca Technical University
North Center University of Baia Mare
Faculty of Sciences
Romania

Abstract: *The fourth industrial revolution, in perspective will integrate Quality 4.0. This new model will influence the society by appealing and using the latest technologies that will continue its dynamic and add a new value economically and social. Industry 4.0, started as an idea of Germany, at present the concept has been adopted by the whole world, with a gradual transfer from the "real" to the "virtual" world. In traditional manufacturing processes, the next steps will be towards transformation by including new technologies, artificial intelligence, 5G technology. Quality 4.0 leads us to the digitalization of Total Quality Management and its impact on quality technology, production processes, and people that work. It builds upon common quality tools and also considers, automation and artificial intelligence for improving performance.*

Keywords: quality management, Quality 4.0, Industry4.0, Education 4.0

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SUSTAINABLE INNOVATION

KRISTIQUI Dorian

“Aleksander Moisiu” University Durrës

FASTIP

Albania

Abstract: *The phrase "culture of innovation" is associated with practices and behavior organizational culture related to innovation. The culture of innovation is an increasingly widespread topic of study in the context of organizations' focus on innovation. Organizational culture is what gives personality and identity an organization. Each organization has its own culture, synthesized in values, beliefs, beliefs and aspirations shared by members of the organization. Addressing organization from this perspective helps to understand the different impact and a difficulties in achieving organizational change. Studies show that failure in the implementation of modern management systems or in other projects change has occurred, in most cases, because it has not been achieved aligning the organization's culture with new values and principles. When the values assumed and employee behaviors remain constant, solutions are often formal, even if the working structures and procedures have been modified*

Keywords: innovation, management change, sustainable innovation

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EDUCATION ONLINE AND EDUCATION 4.0

MENTOR Isufaj

“Aleksander Moisiu” University Durrës
Albania

Abstract: *The closure of universities around the world due to the coronavirus outbreak has meant a shift from the traditional form of learning to a shift to online learning. Today, anyone with a computer and an internet connection can access quality online education. But with the passage of the pandemic, many have noticed that online learning can provide an equally beneficial experience for students and teachers. Many of the universities offer several online undergraduate and graduate programs to meet the demand for online but quality learning. Online programs offer students a convenient way to improve their learning at a time that is convenient for them. Online learning offers both students and teachers a flexible option to improve their skills. With the development and improvement of telecommunications networks around the world, internet access between allows the democratization of education, offering more and diverse opportunities to people who want to pursue a certain type of education.*

Keywords: Education 4.0, management change, education online, quality

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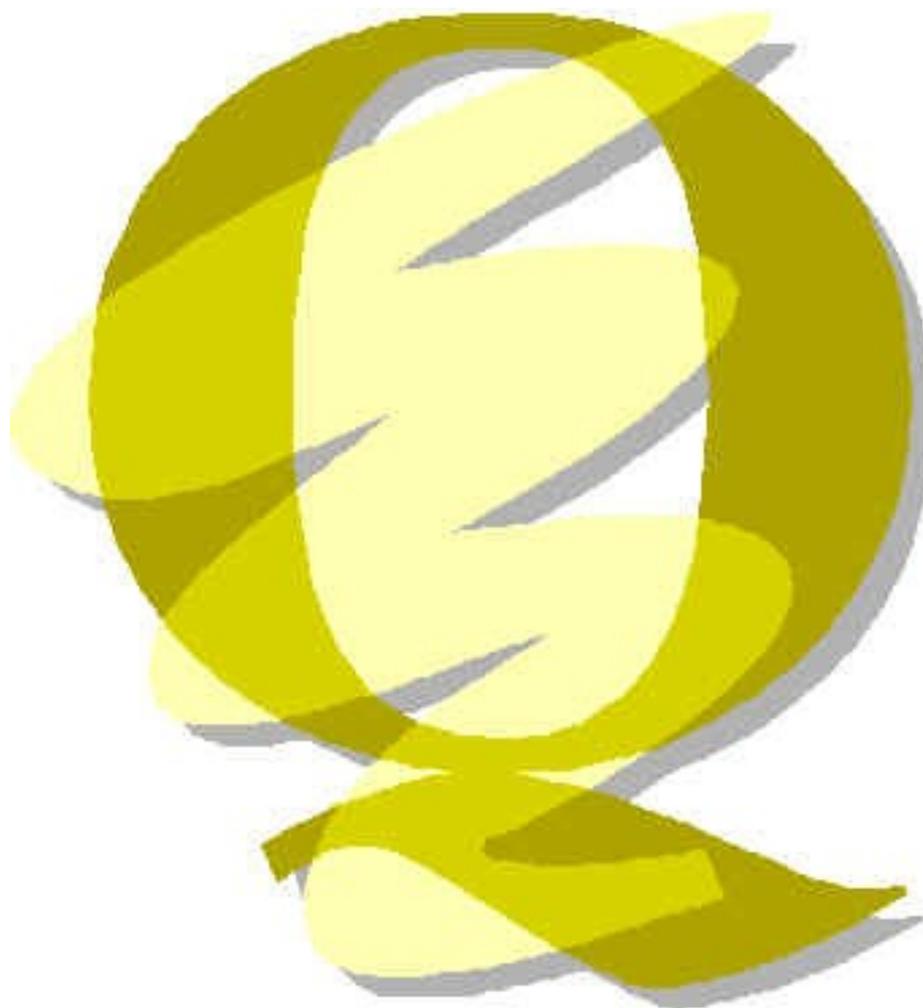
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