

# Challenges and Opportunities for Creative Industries in Age of Data Economics

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**Abstract.** The aim of the paper is to outline the main challenges and opportunities for creative industries in age of data economics and characterize the Latvian Colleges of Culture project “Data design training programme” that is aimed to overcome the problem with lack of professionals of specialists in business data visualization.

**Keywords:** Data analytics, business analysis, visualisation, education.

## 1 Introduction

The development of information technologies and data science has changed the landscape of economy, boosted global productivity and reshaped almost all sectors, including creative industries. The importance of these changes can compare with the emergence of steam power during the first industrial revolution and the value of data -with the value of oil. Because of this process, called digital revolution, a new term data economics has emerged. The world already is abundant of data and it is estimated that data production will be reaching 45 ZB by 2020 (Davies, 2016, p. 2). It is a non-negotiable statement that data is an essential resource for economic growth, competitiveness and innovation.

Data offers useful insights for entrepreneurs at both operational and strategic levels, gives a balanced, from humans experience unbiased perspective, allows to test hypotheses and find new patterns that may not have been noticed by human. As a result, data enable faster and more evidence based decision-making process in various sectors.

Nevertheless, creative industries resist to implement data-driven business models and to take advantage of the benefits that technologies can offer. This resistance may cause the loss of competitiveness for creative industries and creative economy in the age of data economics. Goals of the further sections are to clarify the challenges that creative industries should overcome and to describe the first results of Latvian Colleges of Culture project “Data design training programme”. Programmes goals are to raise awareness of the importance of data and business analytics competencies in business, especially in creative industries, and develop a higher education study programme in data analytics and visualization.

## **2 The Technological Development Impact on Entrepreneurship**

The rapid development of information technologies comes with opportunities as well as challenges and the changes for the entrepreneurs. Researches show that entrepreneurs will need to adopt their strategies to the new data economy age, adapt their organizational structures and reshape their business models to ones which support data-driven decision-making process and even predictive analysis (Hagen, et al., 2013, p. 9). It is estimated that by the end of this decade, artificial intelligence will massively enter businesses, affect all levels of management and cause the reconsideration of the roles and redefinition of the fundamental operating principles currently guiding the organizations (Kolbjørnsrud, Richard, & Robert, 2016, p. 3).

Based on above mentioned, three challenges can be drawn:

- 1) Implementation of data analysis strategy in a business;
- 2) Redefinition of managers role and allocation of tasks;

Training and education programmes for CEOs and employees.

## **3 Positioning Creativity vs Technologies**

Despite the fact that technological development is highly regarded in the economic context, technology and creativity are still perceived as incompatible concepts by some representatives of creative industries. Studies have shown that United Kingdom, one of the leading creative economies, struggles with conservatism. Players have resisted the adoption of new technologies, the economy cannot sufficiently respond to the transformations produced by technologies and is putting the success under risk. The rapid diffusion of information and communication technologies is threatening some established creative businesses, such as newspapers, and massively disrupting others, like those in the recorded music industry. Frustrations can partly explain by the ‘Innovator’s Dilemma’, which shows that past success generates inertias that obstruct adaptation to the new. In other words, the UK’s creative businesses risk failing to make the most of their underlying creativity if they are unable to adapt their business practices and structures to the possibilities and constraints of new technologies (Bakhshi, Hargreaves, & Mateos-Garcia, 2013, pp. 11, 14, 15).

Above mentioned trend to oppose creativity and technology is incorrect. Throughout history, innovative ideas have sprung from human ingenuity and creativity. Now data and algorithms can support, enhance, or even replace human ingenuity in some instances (Henke, et al., 2016, p. 16). It is often misunderstood that the development of artificial intelligence and automatization will make the human workforce redundant. On the contrary, the technology will increase the need for human expertise. Development of technology, artificial intelligence alter the allocation of tasks that should be performed more efficiently and qualitatively, either by machines or humans. People will not be longer chained to routine and lower-value activities but they have the opportunity to manage ideas and innovations (Shanks, Sinha, & Robert, 2016, p. 3).

## **4 Data Driven Creative Ideas**

The analysis of creative industries projects shows that there are internationally known success stories where combining creativity with advanced technologies has created successful business models, products, services.

Internet entertainment service Netflix used all the Big Data they had to inspire the creative direction. They got deep insight into peoples' taste in entertainment, used data proactively and created series "House of Cards. Netflix was not using data retroactively to make suggestions for content. Data were used proactively and correctly predicted television series' potential to be successful.

An online music analytics platform Next Big Sound provides analytics and insights for the music industry by tracking different data signals to help record labels, artists, and band managers make better decisions. The data that they focus on is combining social media data with sales data, radio airplay data, events data, and any other proprietary data they can get to provide context and cross-sectional insights to the music industry.

A photo-editing application Prisma transforms users' photos and videos into works of art by using combination of neural networks and artificial intelligence.

These are just some examples that support the idea that, in the future, successful business models in creative industries are linked to the use of opportunities offered by technological development.

Latest statistics (Database on Digital economy and society, n.d.) confirm that people are using technologies and interacting with them more and more. According to the Eurostat, 81% EU individuals aged 16 to 74 are regularly using the internet in 2017, while only 13% have never used internet, 66% are using the internet for finding information about goods and services, about half (54%) are using the internet for participating in social networks, 40% are using the internet for playing or downloading games, images, films or music. 57% individuals have basic or above basic overall digital skills. Latest statistics confirm that people are using technologies and creating valuable data for organizations and entrepreneurs. 81% EU individuals aged 16 to 74 are regularly using the internet in 2017, while only 13% have never used internet, 66% are using the internet for finding information about goods and services, about half (54%) are using the internet for participating in social networks, 40% are using the internet for playing or downloading games, images, films or music.

The statistic shows that the target group of creative industries uses the technologies, are leaving and creating digital data, therefore representatives of creative industries should not avoid the technologies.

## **5 "Data Design Training Programme" at Latvian College of Culture**

All above mentioned, processes have created a demand for an interdisciplinary approach un education and new professions with a novel skill-set. People need appropriate

skills, knowledge and confidence to make the most of the digital revolution, to prosper in all areas of their lives in a digital society and economy.

There are no specific restrictions (for example, geography, climate) for the acquisition of the knowledge and skills necessary for data analysis, therefore, training and professional development of this global and missing specialists could take place in Latvia.

Currently, this potential is not used in Latvia - no systematic data, business analysis and communication education programs are offered, although such specialists are being sought on the labor market. Widely talk about the importance of engineering professions, but there is no discussion about the broad perspective of data analysis, explaining the interdisciplinary nature of these professions - a combination of technical, analytical and creative competences.

In order to address the problem with the shortage of professionals with adequate knowledge of data analytics, information technology and business, Latvian College of Culture has started the project with aim to analyze the labor market, raise the awareness of data analysis importance and develop new study program that includes the knowledge and competencies of business, data analytics and design.

**Project goals:**

1. To develop public awareness of data analysis and communication, its necessity;
2. To educate the public on the legal aspects, risks and benefits of data provision and use;
3. To develop the content of internationally competitive data analysis and communication curricula;
4. Implement data analysis training and communication programs at both formal and informal level;
5. To promote the analytically thinking and creative society.

**Project tasks:**

1. To study the development of international data analysis and its impact on the development of industries;
2. Examine knowledge, skills and competences that are currently needed and are expected to be needed in the future in the professions related to the development of ICT and data analysis;
3. To investigate the current practice and experience of Latvian enterprises, organizations in data analysis and communication (required, applied knowledge, skills, competences, technologies); to identify successes, problems and necessities;
4. To develop the content of internationally competitive training in data analysis and communication;
5. Organize discussions between industry, education and society on the prospects for data analysis and communication, legal aspects of data provision and use;

6. Implement training programs in data analysis and communication.

**Project activities:**

1. To analyze international studies on trends in data analysis and communication and their impact on industry;
2. To analyze the necessary knowledge, skills and competences of data analysis and related professions and create a catalog of competences:
  - a. An analysis of the knowledge, skills and competences mentioned in international research and publications,
  - b. An analysis of the knowledge, skills and competences mentioned in international job advertisements,
  - c. Analysis of knowledge, skills and competences mentioned in Latvian job advertisements;
3. To interview Latvian enterprises, organizations and data analysis specialists about their practice and needs in the implementation of data analysis, professional development of specialists;
4. To organize a working group in which industry, education, and media professionals develop a conceptual model for informing and educating the public on data analysis and communication issues as well as legal aspects of data provision and use;
5. Implement the working group's developed model, the resulting activities in practice.

**Project results:**

1. A study on international data analysis and communication trends and their impact on industry;
2. A study on the situation and needs of Latvian enterprises, organizations in data analysis and communication was conducted;
3. A catalog of knowledge, skills and competences of data analysis and communication specialists has been developed, based on the results of international research and the needs of Latvian enterprises, organizations. The catalog can be transformed into a professional standard;
4. Content of internationally competitive data analysis and communication education programs was developed;
5. Implementation of formal and informal training in data analysis and communication;
6. Implementation of public education activities in the provision, analysis and communication of data: in professional perspectives and legal aspects

As a result of the project the program for training the data analytic and visualization competencies was developed.

The approbation starts at the academic year 2018/2019. In order to understand the skillset, knowledge and competencies needed in labour market, depth interviews are conducted with eight executives and project managers from publishing, information

technologies, NGO sectors. Furthermore, to gain broader understanding of data analysis related skillset needed in Latvia's labour market a content analysis of job advertisements and research papers has been carried out. Acquired results are compared with insights revealed in the interviews. Based on the analysis carried out author proposes to develop a higher-education programme with focus on three areas: business management, data analysis and information design. All interview participants acknowledged that there is a need for interdisciplinary educated professionals who not only knows how to analyse data but also understands business and can communicate the analysis results clearly and understandably to all involved parties (colleagues, executives, clients and other stake-holders).

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