

## **Entrepreneurial Challenges through Innovative Business Models – A Sigma Approach**

Dragoş Tohănean

The Bucharest University of Economic Studies  
tohanean\_dragos@yahoo.com

Loredana Nicoleta Zainea

The Bucharest University of Economic Studies  
loredananicoleta.zainea@gmail.com

### **Abstract**

Technologies, methods and people are the big challenges for companies. Technology trends are driving dynamic change in the digital future. In addition, the dominant IT-driven trends that are currently transforming the world are forcing companies to be agile with new innovative business models and changing business processes. These include, among others, mobility, cloud computing, collaboration, big data, networking of all things or agile business approaches and methodologies. With such big changes, entrepreneurs have always to adapt. Most challenges are in following areas: cash flow management, hiring employees, time management, delegating tasks, marketing strategy, capital or business growth. In order to continuous, innovate the business model all challenges have to be understood and adapted based on the business strategy and market demand. This being said, the paper will answer the following question: What are the best practices for entrepreneurs to innovate their business model, using a sigma approach? To reach the aims of the paper the authors use a descriptive research method, namely a case study and a qualitative research method, namely personal interviews. The case study was used to understand a company's process and actions when it comes to business and entrepreneurial challenges. The authors conducted 14 semi-structured interviews with key employees of companies from various industries. The results are used to understand which business model components are most affected by change, listing the challenges when it comes to innovating your own business model, and what are the 'best practices' for entrepreneurs.

**Keywords:** Entrepreneurship, Business Model Innovation, Six Sigma.

**JEL classification:** L26, M19, O31, O32.

### **1. Introduction**

Some of the “skills” that are needed to run a successful business are knowledge and experience. Someone cannot find the best candidates, create the most efficient processes or address complex problems without project management basics. There are plenty of digital tools to help organize data and progress, but those tools will not be much help unless there are “teammates” that are following smart principles when using them. (Entrepreneur Store, 2019)

If the business concept is new to the world, this has to ensure more flexible, robust, and efficient processes. More and more customers expect and even demand perfect quality, which can be a challenge, for every business or entrepreneur. For a business or startup to be successful, there are multitudes of tasks that need to be completed at the right time and in the right way. Opportunities for errors are high, and they increase as the number employees, skills, activities and processes are growing. In order to analyze the opportunities and to improve the present processes, Six Sigma Methodology will be described and adjusted in the first part of the paper.

Six Sigma is a set of management techniques that originated in manufacturing plants. It was initially created at Motorola to create highly predictable, customer-oriented processes that would reduce the defect rate of Motorola’s electronics to practically nothing. (Entrepreneur

Store, 2010). Today, Six Sigma has benefits that reach far beyond physical manufacturing plants. It provides a powerful framework for delivering better products and services and for being more efficient overall.

From existing case studies such as “LEAN SIX SIGMA STRATEGY: A CASE STUDY FROM SWEDEN” (Anderson, et al., 2014) or “CASE STUDY: SIX SIGMA FOR SMALL BUSINESS” (Six Sigma Daily, 2018), the use of Six Sigma improved the flexibility, robustness, cost-efficiency, and agility at the same time. Quality improvement was a key change, which led to increase of annual sales.

Further, in the second part of the paper, the results of an exploratory study will be presented. The aim of this study is to analyze the results after applying the adjusted Six Sigma methodology and to answer the following question: What are the best practices for entrepreneurs to innovate their business model?

## 2. Literature Review

The term entrepreneurship, also founder scene or start-up culture, deals as economics sub-discipline with the start-up activities or the creation of new organizations in response to identified opportunities and as an expression of specific founder personalities who wear a personal capital risk (Ceausu, et al., 2018). Entrepreneurship is more than starting a business and using resources efficiently. It includes creative elements such as the systematic identification of market opportunities, the finding of new business ideas and their implementation in the form of new business models and is not necessarily associated with the ownership function. This will fuel the creation of new ventures with innovative business models and open up new opportunities for companies in particular to differentiate themselves from their competitors (Bucherer, et al., 2011).

Society is becoming more flexible, individual and mobile, always connected to the internet and used to receive desired information in the shortest possible time. Consumers are more and more "digital natives", people who either grew up with the new technologies or handle them as if they had grown up with them. They are curious about technological developments and are not afraid of digital purchases (Delgado, 2018). With such big changes, entrepreneurs have always to adapt. Most challenges are in following areas: cash flow management, hiring employees, time management, delegating tasks, marketing strategy, capital or business growth. In order to continuous, innovate the business model all challenges have to be understood and adapted based on the business strategy and market demand (Tohanean, et al., 2018a).

Six Sigma is a systematic approach to process improvement using analytical and statistical methods. The special feature of Six Sigma compared to other process improvement methods is the mathematical approach (MTS Consulting Partner, 2019). It is assumed that every business process can be described as a mathematical function. The Six Sigma components or phases are: Understand, Identify, Data, Solution, Control and Result. To those the following two are going to be added: Implement and Measure - this will bring up to a seven phases approach, not six as the initial design, a more detailed approach and task driven direction.

## 3. Research methodology

The authors employed a descriptive research method, namely the case study and qualitative research method, face-to-face interviews.

The case study presents a complex analysis of a contemporary phenomenon. Yin (1994) as cited in Tellis (1997) noted three categories: descriptive, exploratory and explanatory. Yin's approach is closely aligned with a realist-positivist orientation, as he conceptualizes this

research method as a form of social science (Harrison, et al., 2017). The case study was employed to understand and learn more about the process and actions of a company when challenges or problems occur.

To achieve the objectives of the paper, the authors, also, conducted 14 semi-structured interviews with key employees of companies from the automotive and IT industry. Companies like: UiPath, Oursson, Continental Automotive Romania, Dell, BMW AG, SC Database for Commerce and Industry Romania SRL, DriveNow, IBM or SAP SE. The interviews were conducted over a timeframe of 8 months, from August 2018 to June 2019. Results are used to understand if the improved Six Sigma methodology can be applied on a larger scale and to understand what challenges entrepreneurs face on a daily bases and by solving them, how they can improve their business model.

In order to collect the needed information, the authors used also different sources such as magazines (e.g. Strategic Management Journal, Forbes, Fast Company, Money, TechCrunch, The Wall Street Journal's Entrepreneurship Section or The Washington Post's On Small Business Section), existing reports on the concept of Business Model Innovation and books from the areas of strategic management, entrepreneurship, knowledge economy, industry 4.0 and innovation. These sources have been found both in electronic databases (e.g. Springer, Wiley Online Library and Amazon) and in libraries (e.g. Central University Library "Carol I", British Council Romania).

#### **4. What does being an entrepreneur mean?**

Entrepreneur is the person who "undertakes" something. To his creative nature always belongs essence, initiative, daring and especially phantasy.

Being an entrepreneur always means being in a coordinating role. Once, this simply meant combining the productivity of the business and the profitability of the business most effectively. Today, humanity is added to profitability and productivity. The entrepreneur is today the person who must bring profitability, productivity and humanity to a fruitful combination. In this case, it should not be forgotten that this also means a coordination of private and public interest (Ries, 2011).

Such tasks require not only knowledge and experience, but above all character. Perhaps one may book it as the good and auspicious of our time, that today no property, no knowledge, no achievement can remain isolated, that everything must be inserted into the larger framework of universal human values. There is only the operation in the context and harmony of the general existence. But the entrepreneur is the person who has to establish this connection.

In short - an entrepreneur usually acts very goal-oriented, committed and does not shy away from uncertainty or risks. Also, the pursuit of improvement is a core feature of an entrepreneur - even in the event of setbacks and defeats.

#### **5. The Six Sigma methodology**

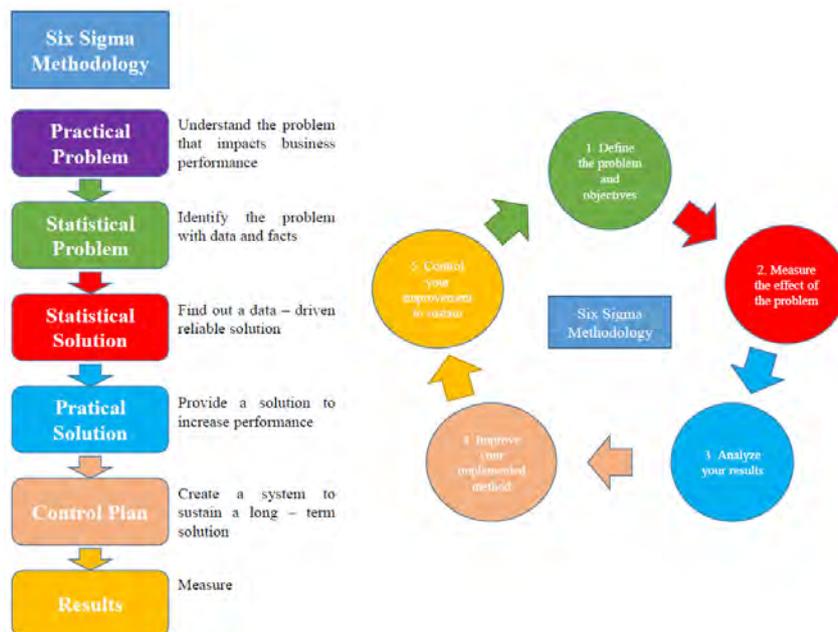
The beginnings of Six Sigma can be found in the 1980s at Motorola, where the method was developed and used for the first time and later led General Electric to success. In recent years, Six Sigma has evolved from a process control term governed by statistical methods to a proven and effective management concept.

The Greek letter Sigma mathematically represents the standard deviation of a population. Sigma is thus an indicator of the deviation from the average. Methodically, Six Sigma seeks to make the performance of processes measurable using metrics. If the scatter is too high and the process capability is poor, then Six Sigma determines the cause-and-effect relationship and identifies the causes of process problems. It should also be noted that Six Sigma is not

exclusively for quality improvement, but can be applied universally to all processes in the company (if necessary).

Today, Six Sigma, as a process improvement method, is often combined with lean management approaches - Six Sigma + Lean = Lean Six Sigma. It emphasizes that both concepts are about avoiding waste, eliminating errors, saving costs, and being quick. As part of a comprehensive customer focus, processes are designed and aligned to fully and economically meet customer expectations and requirements (George, et al., 2004). In the meantime, it is no longer only industrial companies that rely on Six Sigma - service organizations like banks, insurance companies or start-ups also make it the basis for their management and business model. The Six Sigma method applied in a 5-phase model can be seen in Figure 1 (called DMAIC cycle for short):

- *Define* - What exactly is the problem, how big is it and what is the goal?
- *Measure* - Which processes are responsible for this and what is the performance?
- *Analyze* - What are the (significant) root causes of the problem (causal chain)?
- *Improve* - How can the problem be solved?
- *Control* - How is sustainability ensured (anchored in the organization)? (Siemens, 2018)



**Figure 1. Six Sigma methodology applied in a 5-phase model**

Source: Author own creation.

This method is derived from the classic PDCA (Plan / Do / Check / Act) by W. Deming. Building on this method, there are numerous tools (e.g. 7 × 7 Toolbox) that help identify and document problems in existing processes, make processes measurable, and perform analysis.

### 5.1 Benefits of Six Sigma

Six Sigma generates sustainable success, significantly contributing to the growth and survival of a company in fast-moving markets. This can only be achieved through ongoing innovation and organizational change. Six Sigma lays the foundation for a new culture known as the "closed loop" (Tauseef, 2012).

Six Sigma sets or demands performance goals for everyone. Each department, each division and employee has different ideas and objectives. Six Sigma takes this as a basis and

provides among others the actual goals needed at each point within the organization (Zhou, 2019).

Six Sigma increases the value for customers. Only good or error-free products can no longer guarantee lasting success in today's world. Six Sigma helps identify what customers' expectations and expectations are, and then plan how they can be done efficiently and economically (Toyota Production System, 2010).

Six Sigma promotes perpetual learning. In the 1990s, the idea of the "learning organization" fell for the first time. A concept that many like, but difficult to implement. Six Sigma has an approach that can enhance the development and dissemination of knowledge within an organization (Knowledge Management Tools, 2013).

## 5.2 Enhanced Sigma methodology

The Enhanced Seven Sigma methodology applied in a 7-phase model can be seen in Figure 2 (called RDARICM cycle for short):

- *Recognize* – From an early stage identify the problem.
- *Define* - What exactly is the problem, how big is it and what is the goal?
- *Analyze* - What are the (significant) root causes of the problem (causal chain)?
- *Realize* – Realize a solution to increase performance. How can the problem be solved?
- *Implement / Improve* – Implement the solution. How can we improve the solution?
- *Control / Test* – Control and test the solution. Problem is not appearing again?
- *Measure* – Where the processes improved and has the performance been measured?

What is the new business impact?

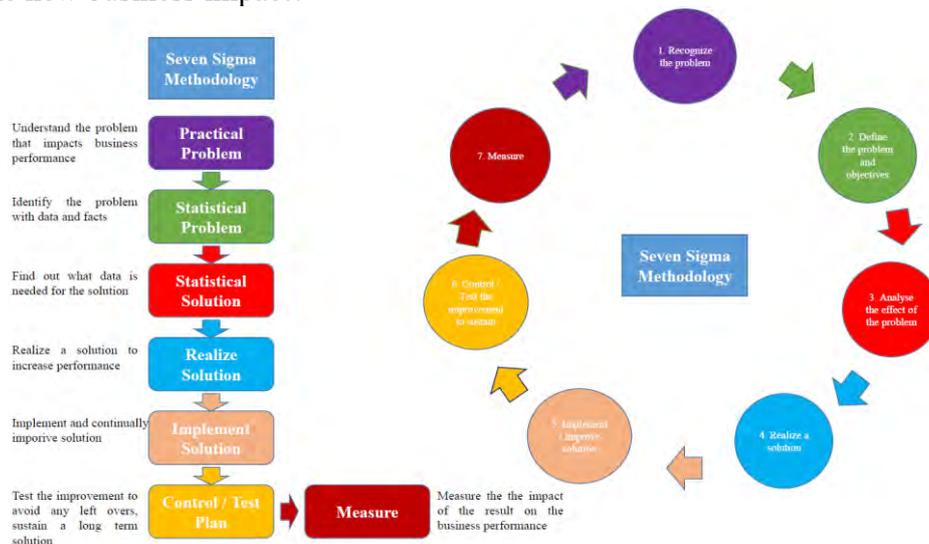


Figure 2. Enhanced Sigma methodology applied in a 7-phase model

Source: Author own creation.

The role of the Enhanced Seven Sigma methodology is to have the ability to understand the information and business challenges of a company and to prepare to respond to changing capacity demands and changing requirements very quickly and if possible in real-time. Problems to be discovered on an early stage, to be solved in a parallel and task driven approach. Main aspects: speed, adaptation, flexibility, dynamics, networking, trust and self-organization are being promoted in the foreground. To be implemented with small steps, on project level – to grow on organization and business unit level. Behavior oriented not process-oriented: individuals and interactions instead of processes and tools, working software instead of

comprehensive documentation, more cooperation with colleagues instead of online contact, reacting to changes rather than just following a plan.

## 6. Results - Entrepreneurial Challenges: How to innovate Business Models?

Self-employment is becoming more diversified and appreciated in Europe and covers an increasing number of activities. In Europe, opportunities related to self-employed status are diversifying and the freelance model has become more attractive for more and more professions. In contrast to traditional self-employed professions like doctors or lawyers, freelancers or entrepreneurs do not have a business background or license – but they have initiative, daring and especially phantasy (Guyot, 2018). They have experience and results based on fieldwork, with a learning by doing approach. In the past years, the self-employed or entrepreneur rate has been increasing from year to year, but there are still big differences from country to country (Table 1).

*Table 1. Self-employment rate EU 2018*

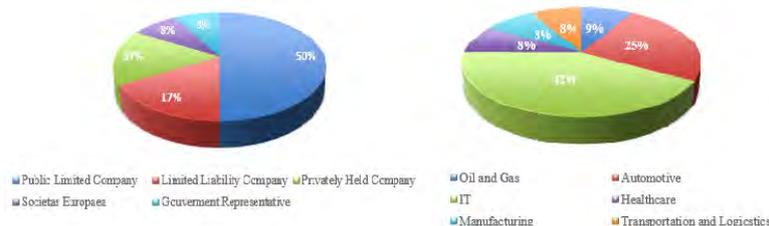
	Denmark	Germany	EU	Romania	Poland	Greece
Self-employment rate EU 2018	8,08%	9,09%	15,80%	17,20%	20,30%	33,03%

Source: Author's own creation, data from Organization for Economic Co-operation and Development 2018

This is a big plus for entrepreneurs that try not to go the traditional way and find in each corner from industries, new business ideas - developing to modern standards and investing in new growing stand-alone ideas. The most popular occupations among entrepreneurs are under the headings 'Professionals / IT' (22%), 'Service and sales' (16%) and 'Craft and related trades' (15%). These categories were followed by 'Agricultural, forestry and fishery' (14%), 'Technicians and associate professionals' as well as 'Managers' (both 12%) (Eurostat, 2019). Together these categories accounted for 90% of the total number of entrepreneurs, the rest of the 10% are divided in 'Transporting services' (Organization for Economic Co-operation and Development, 2018).

Having this as a starting point, we want to highlight what difficulties that most entrepreneurs have on business and international level, what solutions have been found so far and the benefits for business model innovation when applying the Enhanced Seven Sigma methodology.

To reach this goal 58% of the selected companies are located Eastern Europe, 30% are in Western Europe and 12% with activities all over the world. Different industries were taken into consideration - such as IT, automotive, transportation, logistics, healthcare or oil and gas (Figure 3):

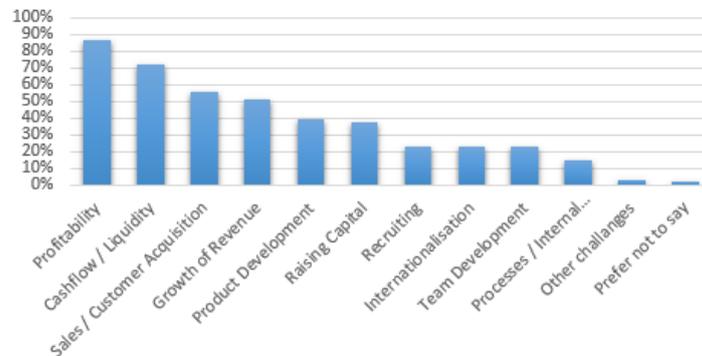


*Figure 3. Legal classification and industry of the interviewed companies*

Source: Author own creation.

Entrepreneurs face many challenges in today's competitive business world. Challenges with daily activities but also with international impact. Fortunately, contemporary times have also blessed entrepreneurs with more resources and possibilities for tackling those problems than ever before (Tohanean, et al., 2019).

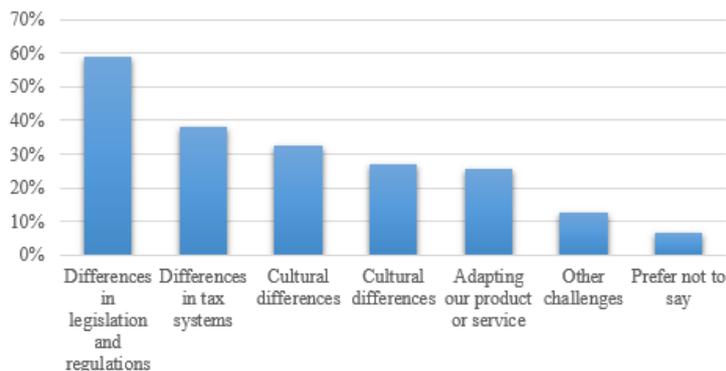
When it comes to daily activities most of the challenges are in finance area with focus on profitability (85%) and cash flow planning (72%). A detailed overview can be seen in Figure 4:



**Figure 4. Challenges for Entrepreneurs with daily activities**

Source: Author own creation.

When it comes to international activities most of the challenges are due differences in legislation (59%) and tax systems (38%). A detailed overview can be seen in Figure 5:



**Figure 5. Challenges for Entrepreneurs when it comes to international activities**

Source: Author own creation.

There are problems in everyday business activity over and over again. The important thing is to actively identify the weak points, develop solutions and then take action. As a high number of challenges, need to be talked – part of them have to be solved in parallel, the Enhanced Seven Sigma methodology has been applied in most of the questioned companies (83%). When applying the new methodology, the topic / problem has to be clearly formulated, so that everyone knows WHY should actually be considered. The problem is considered in the following aspects: RECOGNIZE, DEFINE, ANALYZE, REALIZE, IMPLEMENT / IMPROVE, CONTROL / TEST and MEASURE. Following positive aspects and solution came up after applying the new methodology on project or company level, over a timeframe of 8 months:

- **# 1 Security:** Nowadays, security must be maintained in a system that includes everything from phones, laptops to tablets. Improvement: latest privacy guidelines, secure system and up to date authorization strategy.

- **# 2 High Customer Expectations:** Focus on the topics that will make the business customers happy. Improvement: Better communication channels to customers and suppliers, positive impact on sales and marketing.

- **# 3 Application Operations:** Companies that have invested heavily in legacy software tend to delay upgrading to modern, hosted, or SaaS versions. Improvement: Developing own

mobile or standalone applications, reducing maintenance costs to existing systems, better user experience and increase of security - data flow .

- #4 *Distributed Data*: The more devices and applications are fragmented, the higher the data integration requirements. Improvement: outsource data management to service providers or creation of a common database and centralized data system (e.g. SAP).

- #5 *Permanent availability*: Highly available services are nowadays a matter of course (services also for internal and external activities - maintenance of all departments, few resources). Improvement: Outsourcing - more time for innovative IT strategies, more resources to improve the customer experience and greater awareness that the IT department is a profit center. Parallel project approach.

- #6 *Cash flow management*: Cash flow is essential to small business survival, yet many entrepreneurs struggle to pay the bills while they are waiting for checks to arrive. Improvement: digital strategy (invoice clients from mobile devices), reducing of payment time to 15 working days (half the typical invoice period).

- #7 *Time management*: This might be the biggest problem faced by entrepreneurs, to deliver on time all tasks that are pending or need a solution. Improvement: Creation of systemized and digital - goal and priority list, divided on day and week approach. Better planning and no waste of time.

After applying the Enhanced Seven Sigma methodology many of the companies brought up following findings on project and management level: stopped planning and started preparing, thinking about how to create more, deliver to create value, producing a minimally viable product - grow from a base, growth in small steps for a better control (implement a growth strategy) and continuous improvement (small step approach). The approach to RECOGNIZE, DEFINE, ANALYZE, REALIZE, IMPLEMENT / IMPROVE, CONTROL / TEST and MEASURE – brought a strategic plus to solve and measure the impact of the problems. The result brings up that the future of business models is a methodological approach of problem solving and a digitized approach for service creation and client communication (Tohanean, et al., 2018b)

## Conclusion

The social and economic development of modern business is increasingly characterized by a shift in production conditions characterized by industrialization towards a knowledge-intensive service, information and communication society. In this process of dematerialization of business activities and the associated rise of a knowledge, especially skilled and trained professionals, e.g. entrepreneurs, as well as enterprises founded by them, are becoming increasingly important. As the number of activities or services is growing more and more, with those also many problems appear on the road. Entrepreneurs try to tackle them, but in many times not in a structured or prioritized way.

Applying the Enhanced Seven Sigma methodology many of the companies improved on management and project level, all the activities can be handled in a detailed way, the performance of the organization is growing, better impact on products and communication with clients / suppliers and up to increasing value for products and services. Solving challenges for entrepreneurs, by applying the new methodology - improved and innovated the business model or the project.

## References

ANDERSSON, R., MANFREDSSON, P., HILLETTOFT, P. 2014. Lean Six Sigma strategy: A case study from Sweden [online] Available at: <https://www.semanticscholar.org/paper/Lean-Six-Sigma-strategy%3A-A-case-study-from-Sweden-Andersson-Manfredsson/30748e6a5167a429da>. [Accessed 20 September 2019].

BUCHERER, E., UCKELMANN, D., 2011. *Business models for the Internet of Things*. In D. Uckelmann, M. Harrison & F. Michahelles (Hrsg.), *Architecting the Internet of Things* (S. 253–277). Berlin: Springer.

BUSINESS LEADERS, 2019. Business Leaders Biography. Peter Thiel [online] Available at: <https://www.marketscreener.com/business-leaders/Peter-Thiel-180/biography/>. [Accessed 27 June 2019].

BUSINESS MANAGEMENT METHODOLOGY SIX SIGMA, 2018. Case Study: Six Sigma for Small Business [online] Available at: <https://www.sixsigmadaily.com/case-study-six-sigma-small-business/>. [Accessed 20 June 2019].

CEAUSU, I., OLARU, M., IONESCU, R., TOHANEAN, D. 2018. CASE STUDY: ROMANIAN STARTUP ACCELERATORS - STARTUP SELECTION AND EVALUATION, 4th BASIQ International Conference on New Trends in Sustainable Business and Consumption, CONFERENCE PROCEEDINGS, pg. 714, ISSN 2457- 483X, ISSN-L 2457- 483X.

DELGADO, M. 2018. How Future Technology Impacts Employees. [online] Available at: <https://clutch.co/hr/resources/how-future-technology-impacts-employees>. [Accessed 20 July 2019].

ENTREPRENEUR EUROPE, 2019. Launch a Lucrative New Career as an Agile and Six Sigma Expert [online] Available at: <https://www.entrepreneur.com/article/332611> [Accessed 20 August 2019].

ENTREPRENEUR EUROPE, 2010. Growing Your Business the Six Sigma Way [online] Available at: <https://www.entrepreneur.com/article/217539> [Accessed 20 August 2019].

EUROSTAT, 2019. Self-employment statistics [online] Available at: [https://ec.europa.eu/eurostat/statistics-explained/index.php/Self-employment\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php/Self-employment_statistics). [Accessed 27 August 2019].

EUROSTAT, 2019. Employment statistics [online] Available at: [https://ec.europa.eu/eurostat/statistics-explained/index.php/Employment\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics). [Accessed 27 August 2019].

EUROSTAT, 2019. Self-employed persons [online] Available at: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/EDN-20190430-1>. [Accessed 27 August 2019].

GEORGE, L., M., MAXEY, J., ROWLANDS, D., T., UPTON, M. 2004. *The Lean Six Sigma Pocket Toolbook: A Quick Reference Guide to Nearly 100 Tools for Improving Quality and Speed*, S. 188, McGraw Hill Professional, ISBN 0071505733, 9780071505734.

GUYOUT, C. 2018. Europe's silent shift to self-employment [online] Available at: <https://www.euractiv.com/section/economy-jobs/news/a-silent-shift-to-self-employment-in-europe/>. [Accessed 25 June 2019].

HARRISON, H., BIRKS, M., FRANKLIN, R., MILLS, J. 2017. Case Study Research: Foundations and Methodological Orientations. FQS - Forum: Qualitative social research. 18 (1). [online] Available at: <http://www.qualitative-research.net/index.php/fqs/article/view/2655/4079#g341>. [Accessed 26 June 2019].

KNOWLEDGE MANAGEMENT TOOLS, 2013. Leadership and "The Learning Organization" [online] Available at: <http://www.knowledge-management-tools.net/leadership-and-the-learning-organization.html/>. [Accessed 26 June 2019].

MTS CONSULTING PARTNER, 2019. What is Six Sigma? [online] Available at: <https://mts-consultingpartner.de/en/training/six-sigma-training-courses/>. [Accessed 27 June 2019].

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, 2018. Self-employment rate [online] Available at: <https://data.oecd.org/emp/self-employment-rate.htm>. [Accessed 2 June 2018].

RAJESHKUMAR, U. 2012. Six Sigma practice for quality improvement – A case study of Indian auto ancillary unit, IOSR Journal of Mechanical and Civil Engineering (IOSR-JMCE), ISSN: 2278-1684 Volume 4, Issue 4, PP 26-42

RIES, E. 2011. The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses. ISBN: 0307887898, New York: Crown Business.

SIEMENS, 2018. Sustainability Information 2018 [online] Available at: [https://www.siemens.com/investor/pool/en/investor\\_relations/siemens\\_sustainability\\_information2018.pdf](https://www.siemens.com/investor/pool/en/investor_relations/siemens_sustainability_information2018.pdf). [Accessed 12 June 2019].

TAUSEEF, A. 2012. TOTAL QUALITY MANAGEMENT AND SIX SIGMA, Croatia, ISBN 978-953-51-0688-3.

TELLIS, W. M. 1997). Application of a Case Study Methodology. The Qualitative Report, 3(3), 1-19. [online] Available at: <https://nsuworks.nova.edu/tqr/vol3/iss3/1>. [Accessed 15 June 2019].

TOHANEAN, D., TOMA, S., G. 2018a. INNOVATION, A KEY ELEMENT OF BUSINESS MODELS IN THE FOURTH INDUSTRIAL REVOLUTION, The Journal 'Network Intelligence Studies', Volume VI, Issue 12 (2/2018), pg. 121-130, ISSN-L: 2344-1712.

TOHANEAN, D., TOMA, S., G. 2018b. INTERNET OF THINGS, DIGITALIZATION AND THE FUTURE OF BUSINESS MODELS, Revista 'Strategii Manageriale', Anul XII, nr. 1 (41) / 2019, ISSN 2392 – 8123, ISSN–L 1844 – 668X.

TOHANEAN, D., WEISS, P. 2019. DIGITAL ENTREPRENEURSHIP AND GREEN BUSINESS MODEL INNOVATION: LEAN STARTUP APPROACHES, Tenth International Conference Ecological Performance in a Competitive Economy, Journal 'Quality-Access to Success', Vol. 20, S2, ISSN: 1582-2559.

TOYOTA PRODUCTION SYSTEM, 2010. The Six Sigma methods [online] Available at: [http://blogtoyotaproductionsystem.blogspot.com/2010/?m=0&\\_sm\\_au=isVVHRq0DPFPbq\\_nJ/](http://blogtoyotaproductionsystem.blogspot.com/2010/?m=0&_sm_au=isVVHRq0DPFPbq_nJ/). [Accessed 22 June 2019].

YIN, R. K. 1994. CASE STUDY RESEARCH - Design and Methods, Sage Publications, Second Edition, 12, 17-20.

ZHOU, F. 2019. SixSigma. GOALS AND PROCESS CAPABILITY [online] Available at: <https://www.isixsigma.com/methodology/goals-and-process-capability/>. [Accessed 24 August 2019].