

Topic № 6 TEXTILE MANAGEMENT, MARKETING AND SUSTAINABILITY









СПИСАНИЕ "ТЕКСТИЛ И ОБЛЕКЛО"



RESEARCH ON THE ORGANIZATION OF PRODUCTION OF HEADRESTS FOR THE MERCEDES BENZ E CLASS

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Introduction

Grammer AD, situated in Trudovets, is part of the German company Grammer and is specialized in the production of seats and headrests, as well as covers for them. It executes orders for brands such as Mercedes Benz, Toyota, BMW and other leading automotive producers. As part of a German company, the issues of quality and production organization are among the top priorities and have been raised on a scientific basis. The company has its own production system, which is based on Toyota Production System (TPS). It goals are: to provide world class quality and service to the customer; to develop each employee's potential, based on mutual respect, trust and cooperation; to reduce cost through the elimination of waste and maximize profit; to develop flexible production standards based on market demand.

The presented research is focused on the organizational aspects in the production of headrests for the Mercedes Benz E Class.

Experimental part

The study includes:

• description of the sequence of technological operations required for production of 5 types of headrests for the different seats made of leather or leather and textiles;

• stopwatch measurement of the operation times and comparing them with the set standard time;

• determination of the production line tacts (for each type of headrest);

• grouping of the technological operations into organizational ones;

• drawing of a synchronous schedule;

• deployment of the work places;

• development of workflow diagrams for each work place;

• development of cycle diagrams.

Results

An organization of the production line has been proposed, which guarantees synchronous operation and the shortest possible production cycle. The necessary documents for implementing and controlling the production activities have also been developed.

Discussion

To increase productivity requires the introduction and application of an effective production system. For this purpose, each individual element of the system must be optimized.

Conclusion

Technological calculations have been made and an organizational solution for the production of headrests for the Mercedes Benz E Class proposed. Special emphasis is given to the analysis of time consumption as a major factor in increasing productivity.

Keywords: Production system, organization, automotive industry, headrests

UDC33

THE POTENTIAL OF LABOUR IN INDUSTRY 4.0

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Introduction This study is researching the impact of the automation measures in different textile production tiers on the workers motivation and productivity. It reviews the lessons learned from the Textile Learning Factory 4.0 (K?sters a. o., 2017) at the Institute for textile technology at the RWTH in Aachen, Germany and ManuTech4 (Gloy, 2016); some consultancy studies about the factory of the future in trends in the textile sector (KPMG, Mc Kinsey, Boston Consulting Group, Apparel Resources, RINA, a. o.) and publications at RWTH Aachen and some conferences about upgrading in manufacturing (Zhen Chen, a. o. 2015, Gries, 2019).

The aim of the research is to show that the effect of the Industry 4.0 can be positive only if workers acceptance is assured.

Experimental part The researcher used workers survey, interview with management and academia and case studies on the effects of the introduction of new systems in garmenting and a complete production process and intended movement of production sites back to Western Europe (Germany, UK) withdrawing job opportunities from Asia, Eastern Europe and China. Creation of new jobs within the same factory or neighbor industries was evaluated based on statistic data, survey and desk research data. The case studies also showed reluctance and even boycott and damage tendencies in the workforce to the new technics. The advantage of the cyber-physic systems (CPS) and the Internet of Things (IoT) for technology, quality and costs points of view was weighted against the social footprint of the technologies and the social stress levels.

Results In the case of automats and cyber-physic systems (CPS) was shown that experienced and especially older not IT affine workers showed concerns against, as they faced difficulties to get acquainted easily with the systems and lost their productivity incentives. Unskilled workers saw in the technology possibility to do difficult operations where they were not having access to in the previous work flow, as they required level of skills. But the new technology currently does not offer a system of awarding higher productivity of workers. There is also an effect of monotony and even fatigue as physical breaks between operations are less. It needs further research of accident rates in such settings and how far the cyber-physic systems are able to protect workers from accidents compared to the traditional work places. The example in automotive in China where the failure effect was multiplied by not sufficient control out of the programming showed also potential of costs increase instead of saving. There are also some limits in recognition of failures of the detectors based on variety (see example of face recognition systems in Germany and UK building up people controllers again next to the machines), which is worth to be considered in further conclusions of the combination of man power and robots.

In the concept of smart factory where single line produces single products a clear correlation with opening of new job opportunities (example in India) was seen.

Conclusion The research showed that workers satisfaction depends on the level of education of workers in the need of the new technology and on the introduction of new incentives replacing the ones for productivity and the overtime premium rates, considering still the profitability of the businesses and the investment and maintenance burden of the automats. Also a new paradigm of work-life balance and decent living standards for workers is necessary and needs broader consideration in Industry 4.0.

Keywords: workers motivation and productivity, Cyber-physic system (CPS) and Internet of things (IoT), smart factory

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ИНОВИРАНЕ НА МОДНАТА ИНДУСТРИЯ ЧРЕЗ ТЕХНОЛОГИИ И ДИЗАЙН

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Резюме

Свидетели сме на всеобщ преход на индустрии и общества към различни парадигми провокирани от цифровите технологии. Извършва се цифрова революция и се реализира Индустрия 4.0. Модната индустрия също се трансформира, създават се нови бизнес модели, начини на производство и потребление. Модата е еко и социална, а технологиите определят устойчивото и бъдеще. Целта на статията е разкриване на основните промени в глобалната модна индустрия породени от технологичното развитие. Изведени са конкретни направления в иновационното развитие на индустрията. Разкрива се новото съдържание и специфика на дизайна във всички етапи на логистичната верига.

Ключови думи: модна индустрия, иновации, технологии, дизайн

INNOVATING FASHION INDUSTRY THROUGH TECHNOLOGY AND DESIGN

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Abstract

We are witnessing a universal transition of industries and societies of different paradigms provoked by digital technologies. The digital revolution is underway and Industry 4.0 is upon us. The fashion industry is also subject to external and internal forces. The phenomenon of printed clothing, self-cleaning textiles, augmented or virtual reality and wearable technologies together and individually have the potential to change the world of fashion forever. The evolution of clothing leads to an interactive connection with the man. Many companies added value to their products and deliver it to their new customers. This solidifies new brands that are flexible and up-to-date, evolve with technology and capture their consumers mood.

The main development priorities can be developed into two directions: Business development with a focus on leadership and pioneering; Industrial development with a focus on manufacturing / textile and creative industries /. Development trends can be identified as specific, global and market.

Over the years, fashion and innovation have often clashed, becoming closer and more cooperative in their attempts to test their limits, guaranteeing better products or systems. From design to retail, from product to communication, fashion and technology are interconnected and the transition from craft to industrial production, from analogue to digital content, innovative development improves the stages and makes them faster and more efficient.



The fashion industry is ever transforming, new business models are created, as well as new ways of production and consumption. Regardless of whether fashion is eco and/or social, whether it is retail or high fashion, technologies determine its sustainable future. Technology and design identify trends that can be defined as:

• Global as a result of major changes in society and technology that are modernizing everyday life and have a significant impact on the fashion world.

• Specific in terms of process efficiency and innovative potential.

• Markets that determine competitive advantage, which in turn is achieved through innovation.

Design is constantly gaining importance in the development of products to meet different requirements, in the production of high quality goods and in maintaining the increasing market share. All these factors have become key elements of economic and social development.

The purpose of the article is to uncover the major changes in the global fashion industry caused by the technological developments. Key directions in the innovative development of the industry are outlined. New content and design specifics are revealed in all stages of the logistics chain.

Keywords: fashion industry, innovation, technology, design.