

Automated verification of compliance of technical documentation of an enterprise in the conditions of digital technology

Alexander Feofanov^{1,*}, and Nataliya Bondarchuk¹

¹ Moscow State University of «STANKIN», Moscow, Russian Federation

Abstract. The article describes the current situation of the country in the field of digital technologies and the importance of development in this direction. The sources of growth due to digitalization, as well as the impact on the standard of living of human digital technologies are described. Particular attention is paid to the need to introduce and develop a proposed program that will manage all discrepancies based on risk-based thinking and the PDCA principle.

To date the introduction of digital technologies in all areas of the country is not only relevant for Russia, but for the whole world.

"Russian IT companies, of course, are globally competitive. Domestic experts not only offer the best unique software solutions, but, in fact, create a new sphere of knowledge, a new environment for the development of the economy and life," V.V. Putin [1].

President V.V. Putin called for creating a fundamentally new, flexible regulatory framework for the introduction of digital technologies in all spheres of life. "At the same time, all decisions should be made taking into account the information security of the state, business and citizens," he said [1].

Russia intends to multiply increase the output of specialists in the field of digital technologies, to achieve universal digital literacy.

Experts say that Russia is already living in the digital age. In terms of the number of Internet users, it ranks first in Europe and the sixth in the world. And the number of users of portals of state and municipal services doubled only in one 2016 and reached 40 million people.

Leading countries in the development of digital technologies are: the USA, China, the Czech Republic, Brazil and India. Russia lags behind in such indicators as:

- level of digitalization;
- share of the digital economy in GDP;
- average delay in mastering technologies.

The share of public spending and private investment in the GDP structure is also lower, the volume of export of digital technologies in Russia is four times less than imports.

At the same time, in terms of digitalization, some industries are approaching the world level (for example, information and communication technologies, education, finance). But

* Corresponding author: feofanov.fan1@yandex.ru

in many key sectors (mining, manufacturing, manufacturing and transport), Russia lags behind the leading countries (USA, China, Brazil, India) [2].

Thanks to the development of digital technologies, the standard of living is growing. Now you can pay for various services and goods without leaving home [5]. To use public services while in remote access, which undoubtedly facilitates the life of a person and the work of employees [6].

Growth drivers through digitization:

- Optimization of production and logical operations
- Improving the labor market efficiency
- Improved equipment performance
- Increasing the efficiency of R & D (research and development) and product development
- Reducing the cost of resources and production losses

For the industry, the main thing in the digital era is, first of all, the digitization of all processes that occur in the production of some goods [3]. This digitization of technology, which is still not very clear for today, this is the digitization of products, i.e. all processes that occur in the enterprise [4]. And also the digitization of all inconsistencies that have been identified.

GOST R ISO 9001-2015 The Quality Management System recommends the use of a process approach that includes the Plan-Do-Check-Act (PDCA) cycle, and risk-oriented thinking. Risk-based thinking allows an organization to identify factors that can lead to deviations from the planned results of processes and the organization's quality management system, and use warning controls to minimize negative consequences and maximize the use of emerging opportunities.

Table 1. Sources of growth due to digitalization

Sources of GDP growth due to digitalization	Unit. measurements,%	The total effect of digitalization
<ul style="list-style-type: none"> • Monitoring of production lines in real time • Optimization of logical routes and determination of order of priority of departures 	1,4 – 4,0	19-34% of the total increase in GDP or 4.1-8.9 trillion.
<ul style="list-style-type: none"> • Efficient and quick job search and filling of vacancies • Remote work capabilities • New professions and jobs 	2,1 – 2,9	
<ul style="list-style-type: none"> • Reduced downtime and repair costs • Increase the load of equipment 	0,4 – 1,4	
<ul style="list-style-type: none"> • Rapid prototyping and quality control • Analysis of large data sets in the development and improvement of products 	0,2 – 0,5	
<ul style="list-style-type: none"> • Reduction of electricity and fuel consumption • Reduction of production losses of raw materials 	<0,1	

When checking the enterprise for compliance with the requirements of regulatory documents, both internal and external, the question arises of managing the inconsistencies found. And in the further their prevention or reduction of risk of their occurrence. If there is a discrepancy, the clause of the normative document on which the violation was found is indicated. The program automatically assigns a bar code in the automated mode, in which the information has been encoded which inconsistency was found, in which subdivision, what activities should be held, and other information. With the help of barcodes, you can quickly find all the inconsistencies and manage them. This information can be uploaded into graphs and plaques, by which it is possible to determine the tendency of the appearance of the same inconsistencies. And also to make a gradation on significant and not significant inconsistencies, their positive and negative influences. This program partially automates the work of specialists, specialists are responsible only for input of initial information. The program itself collects statistics and converts data, offering solutions for solving weaknesses or finding them.

The introduction of automation in all processes is the main task of any production. Due to automation, it is possible to facilitate the work of employees, reduce or remove negative risks, increase productivity. Without the introduction and development of automation, the transition to the digital era is not possible. Thanks to digital technologies, it is possible not only to create an entirely new infrastructure and manage it, but also to reach a new level of life.

References

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