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DEVELOPMENT OF THE CREATIVE ECONOMY, ITS RELATIONSHIP WITH THE INNOVATION ECONOMY IN THE REPUBLIC OF BELARUS

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Summary - Creative economy – an economy that embodies new ideas in a product and formed by the synergetic effect of innovations. This economy is closely interlinked with the innovation economy, which presupposes a certain strategy for the development of scientific and technological developments. It is also important to note the high role and specificity of financing in this area: a common assessment is formed through various types of agreements and agreements between countries. In addition, the creative economy depends directly on the creative product, and its basis is intellectual property. As for the Republic of Belarus, according to the Martin Prosperity Institute (USA), our country ranked 37th in the Global creativity index, the highest indicator among the CIS countries. According to the World Intellectual Property organization (WIPO), Belarus increased its rating by 14 positions in 2019 and took the 72nd place out of 129 economies in the world. Thus, Belarus is currently only at the initial stage of formation of a creative economy, but has a high potential for development in this area, taking into account the increase in innovative developments and attracting investments from abroad.

Резюме – Креативная экономика – экономика, воплощающая новые идеи в продукт, которую формирует синергетический эффект новшеств. Данная экономика плотно взаимосвязана с инновационной экономикой, предполагающей определенную стратегию по развитию научно-технологических разработок. Важно также отметить высокую роль и специфичность финансирования в этой сфере: единая оценка формируется путем различного рода соглашений и договоров между странами. Кроме того, креативная экономика напрямую зависит от творческого продукта, а её основой служит интеллектуальная собственность. Что касается Республики Беларусь, согласно Martin Prosperity Institute (USA), наша страна заняла 37 место по Глобальному индексу креативности, самый высокий показатель среди стран СНГ. А согласно World Intellectual Property Organisation (WIPO) по Глобальному инновационному индексу (Global innovation Index) Беларусь в 2019 году повысила свой рейтинг на 14 позиций и заняла 72 место из 129 экономик мира. Таким образом, Беларусь на данный момент находится только на начальном этапе становления креативной экономики, но имеет высокий потенциал развития в данной сфере, с учетом увеличения инновационных разработок и привлечения инвестиций из-за рубежа.

Introduction. Today, the UK is recognized as the leader in the development and application of the creative economy, which successfully develops various types of documents through cultural, social and economic interaction. The creative industry means not just the emergence of new ideas, but also the implementation of these ideas into a product that will be in demand on the market. The synergistic effect of innovations creates a creative economy – an economy based on ideas and knowledge.

Main part. It should be mentioned that the creative economy is in direct interaction with the innovation economy, because innovation is the product of the creativity development result. The innovative economy, first of all, allows a country using this type of development to be competitive among other countries around the world, to reach a new level of development, economic and social, ethical and moral [1].

The innovation economy, for the most part, is supported by a certain strategy and focuses more on the formation and development of scientific and technological developments, and may not fully cover all areas of the creative economy. However, this does not in any way prove that there is no strong link between the innovation and creative economies. Without ideas and creativity, the most important scientific and technological projects cannot be created, just as without innovation, the creative economy will be slowed down [2].

When discussing this topic, it is impossible not to mention the topic of financing. Funding plays a key role in the proper development and sustainable growth of creativity. However, it should be noted that at the moment there is no single assessment of the creativity of capital in all sectors of the economy engaged in the creative sphere due to the lack of agreement between organizations, as well as due to the differences in the legal and legislative bases of countries. It leads to the fact that a single assessment is formed by various agreements and agreements between countries.

International cooperation in creative industries is also developing on the basis of the Convention, which means attracting foreign capital.

From all of the above, we can conclude that the creative economy, as well as innovation, directly depends on the creative product and the amount of financial investment to support and develop this type of economy.

Speaking about the Republic of Belarus, it can be noted that the country has a great potential, which is revealed in sustainable knowledge, innovation, as well as in human resources, which have a huge potential in the field of creativity.

According to the Martin Prosperity Institute (USA), Belarus is ranked 37th in the Global creativity index – the highest place among the CIS countries. Parameters such as technology, talent, and tolerance were examined. According to the world Intellectual Property organization (WIPO), Belarus increased its rating in 2019 and took the 72nd place out of 129 economies in the world. This is 14 positions higher than it was last year, which indicates the growth of innovation, investment and improvement of the state's scientific and technical base.

Conclusion. Thus, the creative economy is a developing and emerging mechanism of the post-industrial economy, which has replaced the industrial type of development of society, and is inextricably linked with the innovation economy. The basis of the creative economy is intellectual property. In Belarus, the creative economy is still in its infancy, but the country has a good chance to develop this type of economy, taking into account the available resources and opportunities, as well as increasing innovation and attracting investment from abroad.

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HOW RAY TRACING AFFECTED NVIDIA

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Summary - in this article, we will talk about how the entry of a new video card segment into the market affected the profit of one of the most famous video card companies. And also whether the market itself is ready for such innovations. Analysis of what this technology does and how it can help developers.

Резюме – в данной статье речь пойдет о том, как выход на рынок нового сегмента видеокарт повлиял на прибыль одной из самых известных компаний по выпуску видеокарт. А также готов ли сам рынок к таким нововведениям. Анализ того, что делает эта технология и как она может помочь разработчикам.

Introduction. On September 20, 2018, a new video card segment from Nvidia, namely the 20 series, entered the shelves of electronics stores. It included video cards: RTX 2060, RTX 2070, RTX 2080 (as well as manufacturer-accelerated versions of Ti). This is a completely new type of video card on the market. The fact is that they are the first to introduce RTX technology. They allow the user to work with ray tracing.

The main part. Ray Tracing is a set of algorithms that allow you to achieve photorealistic graphics, they allow you to implement next-generation lighting effects that look as realistic as possible: scattered shadows, background darkening, reflections, refraction..., and much more in fact. It's also worth adding that ray tracing simplifies the video game development pipeline. Rasterization also requires additional game resources, which are worked on by a lot of artists and designers, adjusting reflections and other things in the graphics editor so that they look realistic in the game. Rasterization outputs objects in turn, one after the other, so there is no relationship between the objects. You can also use this technology in conjunction with AI: for example, use it to calculate the vision of bots-launch beams from bots and see where they collide with objects. This is necessary so that bots can determine where other objects are located in the three-dimensional scene. This allows bots to behave more correctly than in the case of scripted behavior. You can also use ray tracing technology to calculate physics: for example, use rays to calculate the point where objects collide with each other».

As an example, we can present a game production company. Graphic design plays a major role in creating a new product. We can also say that about 30-40% of the budget spent on the game is made up of graphic effects. Video cards with this technology allow you to spend much less time and money on this type of work.. A clear example of how this technology works. In this case, it does everything automatically, without spending time creating these things manually.

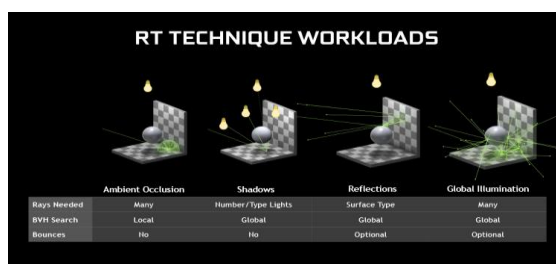


Illustration 1- RT technique workloads

Source: Nvidia.com. An example of the work technology.