

Although much of the utilization of Metaverse remains aspirational, increasingly, hospitality and tourism organizations and destinations develop their presence on Metaverse platforms (as some did with SecondLife a decade ago) to establish interaction and trading mechanisms. Metaverse is developing as a parallel reality where humans can work, play, and communicate.

Hence, MR bridges the virtual and real worlds by creating connected and interoperable functionality in real-time, creating new opportunities for social, economic and cultural activities in this hybrid space and introducing a range of disruptions.

Consumers can co-create value, combined with blockchain, cryptocurrency and non-fungible token, performing actual economic activities in the virtual world. Metaverse will have considerable impacts on the hospitality and tourism, as it transforms guest experience before, during and after their trips. Hospitality services in particular include a very wide range of services, including accommodation, food and beverage, entertainment and meetings, incentives, conferences and exhibitions (MICE) services.

Blending the real experience with the virtual world is disruptive and transformational, bringing major opportunities and challenges for all stakeholders in the ecosystem. Metaverse propels a dynamic transformation of the hospitality ecosystem, forcing a business process reengineering in all functions and processes as well as in operational and strategic hospitality management.

Metaverse opens many exciting opportunities for hospitality and tourism researchers. Metaverse should be examined holistically throughout innovation adoption research that includes management, strategy, human resources, food and beverage, revenue management and entrepreneurship to appreciate the full impact of Metaverse adoption in hospitality businesses.

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AI, ROBOTS AND AUTOMATION: FUTURE TRENDS IN THE LABOR MARKET (ШТУЧНИЙ ІНТЕЛЕКТ, РОБОТИ ТА АВТОМАТИЗАЦІЯ: МАЙБУТНІ ТЕНДЕНЦІЇ НА РИНКУ ПРАЦІ)

The industrial revolution changed the agriculture production pattern where now only a fraction of people produce all the food needed. People moved from agriculture to work in new jobs in factories created by Industrial revolution. At that stage industrial production increased and income for both firms and individuals increased. So there was no problem. But, nowadays; in the era of informatics, which is a revolutionary one, where artificial intelligence and automation including Robot factories are growing rapidly every year. This process is changing the production techniques and volume, in parallel to tangible structural developments in the labour markets.

It is undeniable that technology advances create new jobs; simultaneously displace others, but do they go on parallel quantitatively and qualitatively; if not; what will happen to low skilled workers; the economy golden rule in this regard says that as long as productivity is increasing then everything is well. If this rule holds, then new governmental interaction policies will be laid down to shift the minimum wage regulation to minimum income by taxing more the public stock corporations to finance social aids and rehabilitation plans for those workers.

In 2013, Oxford economist Carl Frey and information engineer Michael Osborne predicted with a high chance that 702 occupations i.e. 47% of American jobs possibly will be automated within more or less a decade.

Deployment of Artificial intelligence technology advances are reducing the cost of automation every year, while cost of highly skilled human labours is rising on the other hand. Firms need to keep competitive, so they are maximizing benefits from every working hour; but the speed of reducing cost of Robots is faster. The Boston Consulting Group's report, "The Shifting

Economics of Global Manufacturing predicting that the affluence of Robotic workers will cut labour costs by 22 percent in the United States, 33 percent in South Korea, and 25 percent in Japan and the use of Robots will jump by 10 percent a year in the world's top 25 export nations through 2025.

Somebody may think this is some type of science fiction, the case of Foxconn the world's largest contract manufacturer is a live example. The story came from Xinhua News, China's state-controlled news agency, is headlined in 2011 "Foxconn to replace workers with 1 million Robots in 3 years". In 2011, the company installed 10,000 Robots, called Foxbots. Today, the company is installing them at a rate of 30,000 per year. Each Robot costs about \$20,000 and is used to perform routine jobs such as spraying, welding, and assembly. On June 26, 2013, Terry Gou, Foxconn's CEO, told at his annual meeting that "We have over one million workers. In the future we will add one million Robotic workers". This means, of course, that the company will avoid hiring those next million human workers.

However; technology advances used in past decades to displace jobs and create others, so where is the problem; the problem has three perspectives, first is the speed of progress, i.e. it comes rapidly; the second is techno-systems become cheaper, and the third is machines become more and more smarter in view of using artificial intelligence. That means some day in the near future the lowest-paid workers in the least developed countries might not be able to compete with Robots or automated systems.

A clear vision about Bill Gates' prediction needs an accurate understanding the future trend of AI & automation during the next ten years; hence this section flashes the major tangible developments in this area starting with the technological singularity. The technological singularity is the hypothesis that accelerating progress in technologies will cause an accumulative effect wherein artificial intelligence will exceed human intellectual capacity and control, thus radically changing civilization in an event called "the singularity".

Nanotechnology advances the utilization of materials and devices with extremely small dimensions. Nanotechnology is central to material science because the properties of materials can change dramatically when things are made extremely small. The interaction between the Nanotechnology, AI and materials is a revolutionary process. This interaction will eventually provide a new generation of information and communication technologies that will have a large impact in our society, probably providing the means so that technology and biology merge.

The classical economists view is that as long as productivity is growing then everything else would take care of itself. This argument is built on simple rule new techno advances lead to increase productivity, which means more income, more savings than more investments which means the creation of jobs and so on. However, three questions to be raised here; the first: is there a law guarantee that everybody will benefit from the growing productivity? The second: which is faster the curve related to job creation or the curve of cutting of the jobs? And the third question: what types of skills are required by new created jobs in view of the machines' IQ improvements?

The answers can be classified into three perspectives; the first is claiming techno advances and automation will replace jobs, especially for low skilled workers, the second perspective is denying that and ensuring technology will create jobs as it did before, and finally the third view is supporting the interaction between human and machines will continue and one do not function without the other and vice versa.

Hence, there will be a deep restructuring of the workforce demand from a technical point of view. Avoiding unemployment can be achieved through rehabilitate workforce skills to comply with the new demand since the coming era is for highly-skilled workers. The educational and training systems are not adequately preparing people for work in the future, and the same situation for the political and economic institutions which are poorly equipped to handle these hard choices.