

Opportunity and Challenge: The Impact of Emerging Technologies on Employment in Southeast Asia

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Abstract: Innovation is an important driving force for national economic development, and emerging technologies have an important impact on social life. Southeast Asia has an important geographical location, huge development potential, extensive cooperation with neighboring countries, and a broad job market. Emerging technologies have a huge and profound impact on the employment situation here. In the short term, the application of emerging technologies will reduce some job opportunities and increase the costs of human resource, by the way posing certain challenges to social stability; but in the long term, it will inject more vitality into the development of productivity, and optimize and upgrade the job market in Southeast Asia. It could become an important opportunity to promote social progress.

Keywords: Emerging technologies; Southeast Asia; Opportunities; Challenges

Emerging technologies mainly include robotics and artificial intelligence, information technology, nanotechnology, biotechnology, cognitive science, psychological technology, etc. ^[1] The 21st century is a century of rapid development of science and technology. The development of emerging technologies has had a profound and significant impact on all aspects of human society. From the perspective of the development of human society, emerging technologies have a short development time and broad prospects. They are the “young” content of human civilization and the main driving force for social progress. It helps to significantly liberate and improve productivity, create some new forms of employment, and has the potential to bring huge economic benefits; it will also bring great convenience to daily life. But on the other hand, emerging technologies have also replaced many traditional jobs, leading to problems such as increased social unemployment. At the same time, the costs of upgrading and maintaining for devices with emerging technologies are high and product iterations are rapid, which not only places high demands on talent reserves and hardware equipment, but also involves certain risks. The development of science and technology is destined to revolutionize the employment model of human society and trigger a series of changes. Its impact will involve many aspects such as economy, politics, and social thought.

1. Challenges brought by emerging technologies

1.1 One of the challenges: reducing labor positions and increasing employment pressure.

1.1.1 Job losses

One of the great benefits of the development of emerging technologies to society is that it can greatly improve the efficiency of social production. For the manufacturing industry, the use of a large number of automatic robots will significantly increase the company's profits. The impact of this benefit will exist on both high-end manufacturing and low-end manufacturing. Research shows that enterprise technological progress has skill-biased characteristics, which leads to an increase in enterprise demand for high-skilled labor, while the demand for low-skilled labor is relatively reduced. The research and development intensity of enterprises has a significant effect on increasing the demand for high-skilled labor. At the same time, this will result in a considerable number of job losses in the short term. Google, for example, is worth \$370 billion but has only about 55,000 employees—less than one-tenth the size of AT&T's workforce in its heyday (the 1960s).^[2]

For the service industry, automated equipment equipped with emerging technologies can not only replace waiters in providing some simple services to customers, but the services they provide to customers are also more predictable. In the manufacturing field,

the proportion of industrial robots used worldwide has grown rapidly in recent years. Obviously, this will directly have an impact on the existing employment situation in industry and service industries. More and more assembly line workers and ordinary waiters will have their jobs replaced by automatic machinery and equipment, and a considerable number of workers will face layoffs. If reasonable measures of the countries are not taken to regulate this phenomenon, the unemployment crisis will trigger a series of economic and social problems.

1.1.2 Bring employment discrimination.

Employment discrimination has always been an unavoidable problem in societies in various countries. One is gender discrimination in employment. Generally speaking, sometimes women are physically weaker than men and are at a disadvantage in choosing careers that require physical strength. Some women may also be unable to focus on their work due to family factors such as fertility problems and childcare. These unfavorable factors for women's work often result in social discrimination against women's participation in the workforce. After emerging technologies impact traditional manufacturing and service industries, fewer jobs can be provided in these industries, which may intensify social discrimination against women. The second is racial discrimination in employment. Southeast Asia is a multi-ethnic area. Southeast Asian society includes both land and maritime civilizations. There is basically no single nation-state in Southeast Asia, and the existence of multiple ethnic groups will bring about a series of social problems. From an employment perspective, the phenomenon of "labor migration" is very common. Most labor migration in the world is cross-regional, between developed and developing countries (North-South migration), but today labor migration increasingly occurs within regions, and more often in developing countries between countries (South-South). This makes the conflicts of interest arising from the unemployment crisis an inducement to ethnic conflicts.

1.2 Challenge 2: Raising employment thresholds and exacerbating social divisions

1.2.1 It becomes more difficult to find a job

The use of emerging technologies requires workers to have higher labor skills rather than becoming simple manual workers. In the fields of electronic information, artificial intelligence, computer software and other fields, the skills needed are not simple manual working abilities, but learning talents with strong learning ability and the ability to master the ever-changing new technologies. In these emerging technological fields, manual workers were undoubtedly at a disadvantage in the competition with machines, so machines quickly replaced simple manual labor. However, it is unrealistic to achieve 100% machine operation in the production and service industries. A considerable number of intelligent systems still cannot be separated from human control. At the same time, when problems occur in the system, they also rely on human maintenance. The daily maintenance of machinery and equipment is also inseparable from human work. All this means that the future job market will have higher requirements for the work ability of the labor force. Only by receiving more advanced education can employer get a job with a better salary.

1.2.2 Employment costs increasing

The world is always changing. With the development of society, especially the application of emerging technologies, the requirements for workers in Southeast Asia will become higher and higher. This can be discussed at both the individual level and the national level. From a national perspective, it needs to increase investment in talent training, such as academic teaching, vocational training, etc. From a personal perspective, workers need to cultivate a lifelong learning concept and continuously improve their competitiveness in the job market.

With the widespread application of emerging technologies, only by mastering higher skills can we obtain more and better job opportunities, which requires professional and systematic learning. Young people want to improve their competitiveness, and it is necessary for high school graduates to receive higher education to pursue higher degrees and master more skills, so as to have the ability to control emerging technologies. Extending your study period not only means investing in tuition fees, but also means losing the opportunity to work and make money during your study time. The impact of emerging technologies on human capital is not limited to individual workers. For the country and even the entire Southeast Asian society, the rise of emerging technologies has raised higher standards for the entire society's talent training, working environment, equipment investment and other hardware and software construction. This requires increased investment in social construction and will also increase employment costs accordingly.

2. Opportunities brought by emerging technologies

2.1 One of the opportunities: Optimize the industrial structure and create new jobs

Because of the continuous advancement of globalization, the changes that have occurred in the U.S. job market will also occur in Southeast Asia. This means that emerging technologies have reduced the demand for workers in some traditional manufacturing industries, while the demand for workers in industries such as medical care, education, and finance has greatly increased. Compared with traditional manufacturing, these other industries tend to have better economic returns, and their development can benefit citizens

of every Southeast Asian society. This change in the proportion of employees in various industries will stimulate the entire society to adjust and upgrade the industrial structure. This means a more reasonable economic development model, higher economic benefits and better human resources.

In the long run, emerging technologies will optimize the industrial structure and ultimately improve the overall quality of workers in Southeast Asia. Although the popularity of emerging technologies will cause competition between automatic machines and traditional workers and service providers, leading to the reduction of these jobs, it is also important to note the great productivity brought about by emerging technologies. The key driver of economic growth is not the extraordinary profits brought about by technological changes, but the continuous creation of opportunities for further technological development .

2.2 Opportunity Two: Promote economic development and promote common progress

Compared with developed capitalist countries in the West, the major countries in Southeast Asia are relatively backward in technological development, but this also means greater room for development. In fact, the development of emerging technologies has brought positive and significant changes to Southeast Asian countries. The rapid application of emerging technologies combined with reasonable policy adjustments by governments will promote the comprehensive upgrade of the industrial structure in Southeast Asia and promote the common development of the regional economy.

The emergence of a large number of emerging industries has provided new impetus for social development. In the competition in the capital market, the subjective initiative of workers will be fully stimulated. Through the free choice of the market, outdated industries will be gradually eliminated, and new industries will gradually gain the right to speak.

Because of the continuous advancement of globalization, there is reason to believe that the changes that have occurred in the U.S. job market will also occur in Southeast Asia. This means that emerging technologies have reduced the demand for workers in some traditional manufacturing industries, while the demand for workers in industries such as medical care, education, and finance has greatly increased. Compared with traditional manufacturing, these other industries tend to have better economic returns, and their development can benefit citizens of every Southeast Asian society. This change in the proportion of employees in various industries will stimulate the entire society to adjust and upgrade the industrial structure. This means a more reasonable economic development model, higher economic benefits and better human resources.

Conclusion:

Everything has its pros and cons, and emerging technologies not only bring challenges but also create new opportunities. In the short term, the application of emerging technologies in Southeast Asia may reduce labor positions, increase employment pressure, raise employment thresholds, and exacerbate social divisions. It may also lead to deep-seated social problems such as gender discrimination and racial discrimination, and there are certain potential risks. But from a long-term perspective, emerging technologies can optimize the industrial structure and create new jobs. They can promote economic development and promote common progress. The development of science and technology has a huge role in promoting social progress and will definitely bring rare development opportunities to Southeast Asia.

References:

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