

# The Use of Artificial Intelligence in Economic Development and Its Potential Impact

## 1. Committee Introduction –ECOSOC

United Nations Economic and Social Council (ECOSOC) is one of the six main organs of the United Nations, which focuses on economic, social, cultural, educational, health, environmental, and human-right issues. This organization provides members a platform for international dialogue and cooperation with a view to promoting international development and achieving sustainable development.

Official website:

<https://www.un.org/ecosoc/en/>

## 2. Topic Introduction

The fourth industrial revolution is happening, and one of its main focuses is the use of artificial intelligence. At Davos 2018, discussion about artificial intelligence and both its benefits and impacts was in the spotlight. Experts have pointed out that artificial intelligence can improve all aspects of our industries including healthcare, education, farming and manufacturing.

Take IBM Watson, a product of IBM, as an example, it can read, analyze and learn automatically, which allows it to complete work such as making web search more intelligent, enhancing customer care and helping company owners make decisions.

However, researchers also predict that artificial intelligence will definitely cause potential impacts such as job loss, which worsens the issue of unemployment. On the other hand, if an AI device is involved in an accident, who is to blame? The liability issue can become another problem of concern.

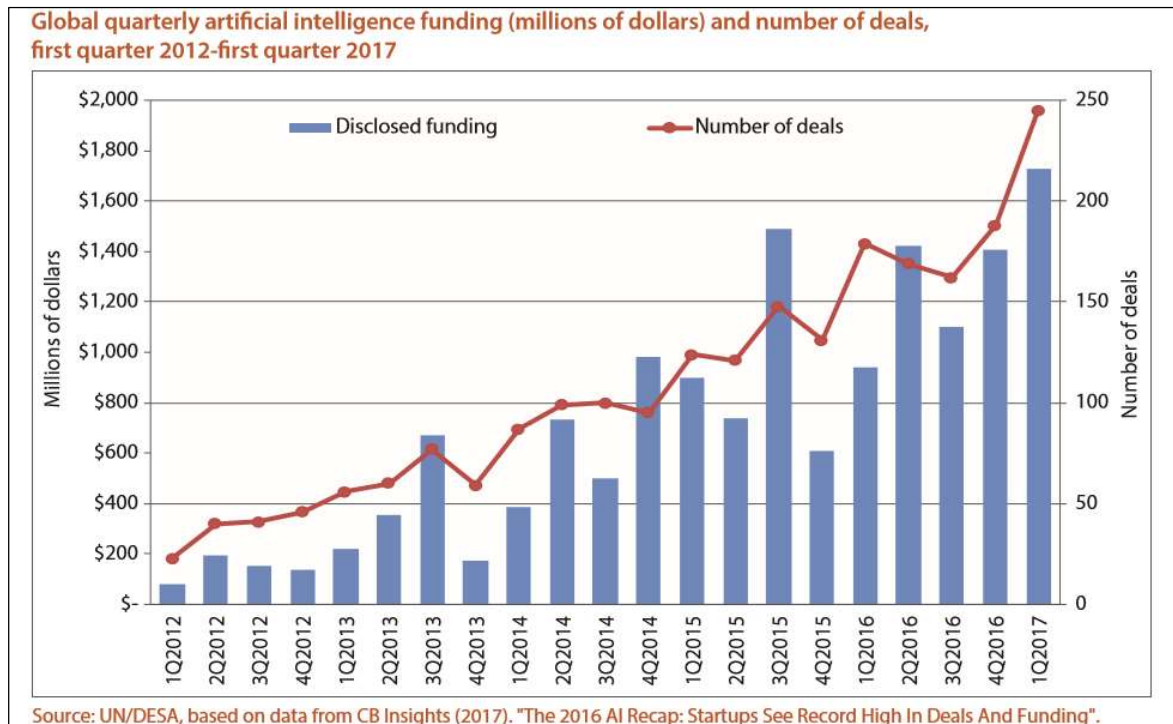
How can artificial intelligence be used in enhancing economic development? How will it shape our future industries? What measures should we take to avoid the potential impacts it may bring? Finding answers to these questions would be the goal of this committee.

## 3. The Definition of Artificial Intelligence

The term artificial intelligence is coined at the Dartmouth Conference in 1956, where people discussed what would eventually become the field of Artificial Intelligence (AI). Early research of AI explored topics like problem solving and symbolic methods. Nowadays, thanks to increased data volumes, advanced algorithms and improvements in computer power and storage, AI becomes what we see today.

The definition of AI in Oxford dictionary is “The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.” Merriam-Webster defined AI as “a branch of computer science dealing

with the simulation of intelligent behavior in computers.” In other words, artificial intelligence is the capability of machine imitating intelligent human behavior.



(Source: [https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017\\_Aug\\_Frontier-Issues-1.pdf](https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017_Aug_Frontier-Issues-1.pdf) )

#### 4. The Use of Artificial Intelligence in Industries (Current Situation and Foreseeable Future Prospects)

##### (1) Agriculture and Aquaculture

The agriculture industry is faced with issues such as climate changes and food security concerns, which makes applying innovative production techniques more urgent. Companies are developing autonomous robots to accomplish essential tasks such as harvesting more efficiently than human laborers; artificial intelligence can also be used to monitor crop and soil condition by analyzing previous data, and even predict possible environmental impact such as climate change to reduce economic loss.

Aquaculture is confronted with problems as well, for example: draining marine resources and food safety. Umitron, a company based in Singapore and Japan, develops computerized optimal aquaculture by applying technologies such as IoT (Internet of Things) and AI, and builds a user and eco-friendly data platform to improve farm efficiency and reduce environmental risks. This can improve the safety, sustainability and stable supplies of aquatic resources.

##### (2) Manufacturing Sector

Artificial intelligence has already been applied to manufacturing and successfully achieved higher efficiency and quality of production. Fanuc, a

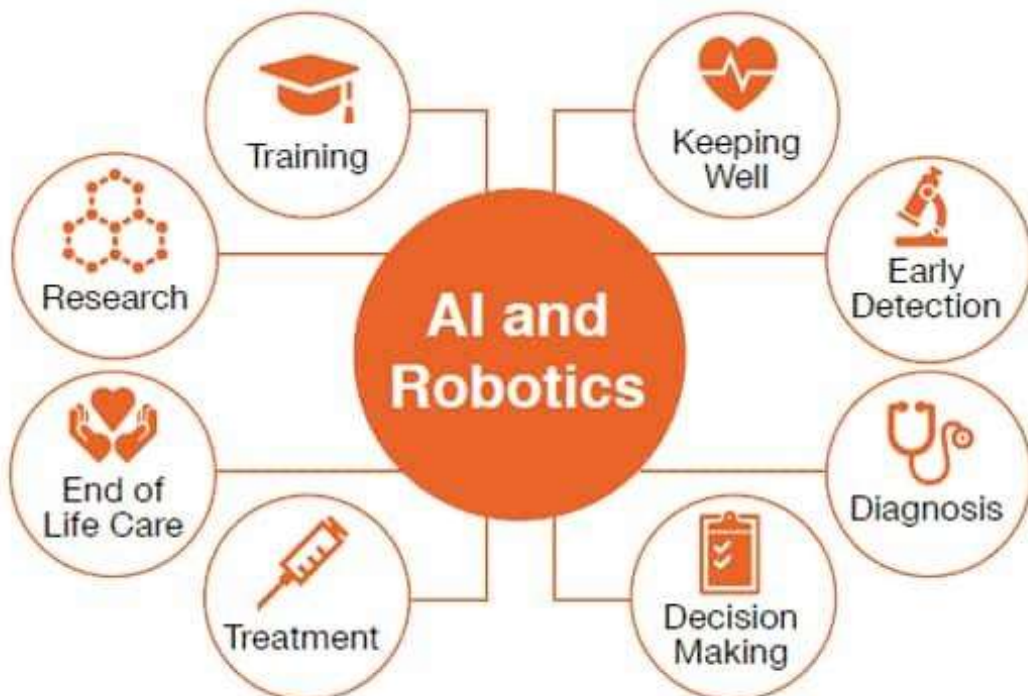
company which promotes automation of factories, produces robots that not only performs monotonous mechanical tasks but inspect and optimize themselves. Landing.ai, a startup at Silicon Valley, develops computer vision tools that detects microscopic defects well beyond human capability, which improves product quality .

The advanced automation can open up different possibilities in the future. For example, customization is rare and expensive in manufacturing. However, with the support of artificial intelligence, manufacturers may lower the cost of customization in order to provide diverse goods and services.

### (3) Healthcare

Artificial Intelligence is already being used in early detection and diagnosis of diseases such as cancer and cardiac diseases. An AI system developed by a team from Germany, France and the US can detect skin cancer more accurately than a team of dermatologists by approximately 8%; Ultromics, a software developed at Oxford University, is able to boost the accuracy of echocardiograms to 90%, which can provide patients with proper treatments as soon as possible, while avoiding unnecessary ones.

As the world population ages significantly, healthcare services for the final phase of human life now become indispensable. AI is expected to improve end-of-life-care by helping people remain independent for longer, reducing the need of hospitalization and accompanying the elderly so that they can constantly be involved in social interactions.



(Source: <https://www.pwc.com/gx/en/industries/healthcare/publications/ai-robotics-new-health/transforming-healthcare.html> )

#### (4) Education

AI has already been applied to several teaching tools such as automatic grading system that is able to make standardized comments and chatbots that can answer basic questions. This frees up time for tutors and allows them to put more effort in preparing better lectures and building emotional connection with students, which are difficult for robots to take place.

On the other hand, companies such as Content Technologies and Carnegie Learning are developing intelligent instruction design and digital platforms that provide personalized lessons and feedbacks for each student. This gives students worldwide access to differentiated learning. As the technology matures, it might be able to detect students' reaction and adjust the teaching materials.

### 5. Potential Risks

#### (1) Job Loss and Unemployment Stress

Increasing unemployment is a common concern of applying AI. During the development of technologies, lots of jobs have been eliminated, transformed, and created due to technological feasibility and economic, legal, regulatory or socio-political factors. In other words, there is not only loss of jobs but also opportunities.

Numerous analyses indicate that higher-skilled workers may benefit from AI's advantages, including a high degree of flexibility, creativity, and strong problem-solving and interpersonal skills. However, the low- and medium-skilled worker may face pressure of being replaced. Workers without adaptability are not able to seize the opportunities and may lose their livelihood.

#### (2) Income Inequality

The use of AI may increase income inequality. The technology which increases overall productivity brings rises to income and consumption of per capita. However, the trend doesn't contribute to all people's wealth and carefree lives. The technology owners may take the advantages of AI and, conversely, laborers who do routine jobs and are equipped with lower skills may get wage cuts and even face the risk of job loss (mentioned in 5.1). The problem of uneven distribution might keep expanding and cause social conflicts between technology owners and workers.

#### (3) Responsibility for Wrong Decisions or Operations of AI

When AI's decisions or operations go wrong, who should take the responsibility? In March 2018, a Uber self-driving car killed a pedestrian in Tempe, Arizona, the United States of America, which drew people's attention to the most classic problem of driverless cars again--who is to blame in a fatal motor vehicle crash when a driverless car is involved? The legal liability of this kind of car accidents is still under debate. Plus, take healthcare industry for example, the rules related to solving medical

negligence need to be established. There are immense legal and regulatory issues which have to be dealt with.

## 6. Preventive Action

### (1) United Nations

United Nations Interregional Crime and Justice Research Institute (UNICRI) has established the Centre for Artificial Intelligence and Robotics in Netherlands. Second-guessing each possible threat and monitoring the development of AI are tasks of the centre.

## 7. Questions to Consider

- (1) How can AI enhance economic growth in agriculture, aquaculture, manufacturing, healthcare, education?
- (2) How can countries avoid negative impacts of applying AI? Both job loss and unemployment stress and income inequality may cause social instability and conflicts. In search of sustainable development, people's welfare is not negligible. Try to come up with solutions to deal with unemployment and income inequality. Besides, think of possible solutions to the dispute of responsibility for wrong decisions and operations of AI.

## 8. Important Documents and Sources of Information

- (1) The impact of the technological revolution on labour markets and income distribution (UN Department of Economic and Social Affairs)  
[https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017\\_Aug\\_Frontier-Issues-1.pdf](https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017_Aug_Frontier-Issues-1.pdf)
- (2) The Chinese Institute for Science and Technology Policy's AI Development Report (Chinese Version) 中国人工智能发展报告  
<http://stdaily.com/index/kejixinwen/2018-07/13/689842/files/f3004c04e7de4b988fc0b63decedfae4.pdf>
- (3) What is Artificial Intelligence  
[https://www.sas.com/en\\_nz/insights/analytics/what-is-artificial-intelligence.html#history](https://www.sas.com/en_nz/insights/analytics/what-is-artificial-intelligence.html#history)
- (4) Agriculture and Aquaculture  
<https://www.techemergence.com/ai-agriculture-present-applications-impact>  
<https://techstartups.com/2018/09/12/umitron-launches-data-service-aquaculture-insurance-leveraging-iot-satellite-remote-sensing-us11-08-million-early-stage-funding/>
- (5) Manufacturing Section  
<https://www.forbes.com/sites/insights-intelai/2018/07/17/how-ai-builds-a-better-manufacturing-process/>
- (6) Healthcare  
<https://www.pwc.com/gx/en/industries/healthcare/publications/ai-robotics-new-health/transforming-healthcare.html>
- (7) Education  
<https://www.thetechadvocate.org/7-roles-for-artificial-intelligence-in-education/>