

**Committee:** United Nations Industrial Development Organization (UNIDO)

**Issue:** Monitoring and mitigating the robotization of industrial production

**Student Officer:** Yasmine Samolada

**Position:** Deputy President

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## PERSONAL INTRODUCTION

Dear Delegates,

My name is Yasmine Samolada, and I am currently an IB2 student in Pierce-The American College of Greece. It is my honor and pleasure to serve as one of the deputy presidents of the United Nations Industrial Development Organization (UNIDO) in this year's ACGMUN.

This is the first MUN conference in which I will be serving as a Student Officer, and I am excited for this experience. MUN has been one of the most interesting and stimulating experiences in my academic life, so far, leading to a passion for it. Moreover, this is a special year since it is the first time the UNIDO committee is introduced in the ACGMUN. It is an agency of great importance in the UN that promotes industrial development in developing countries and countries in transition. It provides technical assistance and helps countries create the conditions for industrial growth and works to increase the competitiveness of developing countries in the global economy. As such, UNIDO is considered an important organization in the international community, and I wait for the discussions and debate that will arise during the conference.

The purpose of this study guide is to familiarize you with the topic and aid in your understanding to form constructive resolutions. Of course, you are highly encouraged to conduct research on your own, to comprehend the topic more thoroughly especially on your delegation's policy and involvement on the issue. The bibliography at the end of the study guide can be a steppingstone in that direction. If any questions or concerns arise during your preparation, please do not hesitate to contact me via email at [g.samolada@acg.edu](mailto:g.samolada@acg.edu) . I look forward to meeting you all!

Kind regards,

Yasmine

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## TOPIC INTRODUCTION

The issue of monitoring and mitigating the robotization of industrial production is immensely important to address. The rapid development of technology has led to a new technological trend accompanied by the increasing use of robots in industry and which is based on disruptive technologies that can have both positive and negative impacts on society and the economy. Monitoring and mitigating the robotization of industrial production refer to the process of monitoring the use of robots in production and taking steps to mitigate any negative impacts that may arise from their use. This can include monitoring the number of jobs that are replaced by robots, the impact on workers who are displaced by robots, and any other unintended consequences of using robots in industrial production. Mitigating the negative impacts of robotization may involve providing support for workers who lose their jobs due to automation, ensuring that robots are used safely and ethically, and developing policies and regulations to govern the use of robots in industry.

On the positive side, robots can increase efficiency, reduce the cost of production, and improve the quality of products. However, the widespread use of robots in industry leads to job displacement and other negative consequences for workers, such as reduced job security and a decline in wages. By monitoring the impacts of robotization and taking steps to mitigate these effects, it is possible to ensure that the benefits of using robots in industry are shared more broadly and that the negative impacts are minimized. This is important for maintaining social stability and ensuring that the benefits of technological progress are distributed fairly.

Responsible development and deployment of robotics and artificial intelligence, including through the establishment of ethical standards and guidelines for the use of these technologies can aid in minimizing these effects. The UN has also called for the monitoring and mitigation of the negative impacts of robotization by including through policies and programs that support workers who may be affected by automation. The aim is to ensure that the benefits of robotics and AI are shared widely and that the negative impacts are minimized, as part of its broader efforts to promote sustainable development and advance the well-being of all people.

Bearing in mind the need to accomplish the UN's Sustainable Development Goals for 2030, UNIDO plays a key role in achieving the Sustainable Development Goal number 9: "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation"<sup>1</sup> that is directly connected to the issue at

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<sup>1</sup>[https://www.undp.org/sustainable-development-goals?utm\\_source=EN&utm\\_medium=GSR&utm\\_content=US\\_UNDP\\_PaidSearch\\_Brand\\_English&utm\\_campaign=CENTRAL&c\\_src=CENTRAL&c\\_src2=GSR&gclid=Cj0KCCQiA2-2eBhCIARIsAGLQ2RICmqN2II\\_9b6S7PX7L4Ql6L9v3m5rp-g00-l7zHG2hn6e0Sr-XoM4aAgXNEALw\\_wcB](https://www.undp.org/sustainable-development-goals?utm_source=EN&utm_medium=GSR&utm_content=US_UNDP_PaidSearch_Brand_English&utm_campaign=CENTRAL&c_src=CENTRAL&c_src2=GSR&gclid=Cj0KCCQiA2-2eBhCIARIsAGLQ2RICmqN2II_9b6S7PX7L4Ql6L9v3m5rp-g00-l7zHG2hn6e0Sr-XoM4aAgXNEALw_wcB)

hand, thus, universal attention should be given to the issue. This issue is deemed as a multifaceted topic and that demands well-rounded and targeted solutions.

## DEFINITION OF KEY TERMS

### Automation

Automation refers to “the process of making an apparatus or a system operate automatically”, with little to no human involvement.<sup>2</sup>

### Robotization

Robotization is defined as “the automation of a process by use of robotic devices”.<sup>3</sup>

### Industrial automation and robotics

“The use of computers, control systems and information technology to handle industrial processes and machinery, replacing manual labor and improving efficiency, speed, quality and performance.”<sup>4</sup>

### Digitalization

“Digitalization is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business”.<sup>5</sup>

### Industrial growth

Industrial growth refers to the development in size of industry, a core economic activity. Capital investment, labor input, financial investment and technological progress are factors that affecting the growth of industrial economy<sup>6</sup>.

### Global Value Chains (GVC)

“A global value chain refers to the full range of activities that have to be complete to bring a product to market. The global value chain involves the preproduction and postproduction processes<sup>7</sup>.”

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<sup>2</sup> "Definition of AUTOMATION." [www.merriam-webster.com/dictionary/automation](http://www.merriam-webster.com/dictionary/automation).

<sup>3</sup> "Definition of 'robotization'." *Collins Dictionary*, [www.collinsdictionary.com/dictionary/english/robotization](http://www.collinsdictionary.com/dictionary/english/robotization).

<sup>4</sup> <https://www.twi-global.com/technical-knowledge/faqs/what-is-industrial-automation-and-robotics>

<sup>5</sup> <https://www.gartner.com/en/information-technology/glossary/digitalization>

<sup>6</sup> "HOW INDUSTRIAL DEVELOPMENT MATTERS TO THE WELL-BEING OF THE POPULATION." *UNIDO | United Nations Industrial Development Organization*, [www.unido.org/sites/default/files/files/2020-02/HOW%20INDUSTRIAL%20DEVELOPMENT%20MATTERS%20TO%20THE%20WELL-BEING%20OF%20THE%20POPULATION%20FIN.pdf](http://www.unido.org/sites/default/files/files/2020-02/HOW%20INDUSTRIAL%20DEVELOPMENT%20MATTERS%20TO%20THE%20WELL-BEING%20OF%20THE%20POPULATION%20FIN.pdf).

<sup>7</sup> "Firms, states, and global production." *Economics & Politics*, [onlinelibrary.wiley.com/doi/abs/10.1111/ecpo.12181](http://onlinelibrary.wiley.com/doi/abs/10.1111/ecpo.12181).

## **BACKGROUND INFORMATION**

### **Industrial Robotic Beginnings**

The history of industrial robotics dates to the 1950s and 1960s, when the first robots were developed for use in manufacturing and assembly operations. The first industrial robots were designed and built by engineers and scientists in the United States and Europe, and they were primarily used in automobile manufacturing and other heavy industries. The early industrial robots were large and expensive, and they required a great deal of setup and maintenance. They were also relatively limited in their capabilities, and they were mainly used for simple tasks such as welding, painting, and material handling.

George Devol is often credited as the inventor of the first industrial robot. He filed for a patent for his "Programmed Article Transfer" device in 1954, which is considered to be the first true industrial robot. The device was designed to automate repetitive tasks in factories and other industrial settings, and it paved the way for the development of more advanced industrial robots in the decades to come. This invention was a major breakthrough in the field of automation and robotics, and it helped to launch the modern era of industrial robots. Today, industrial robots are widely used in a wide range of industries, from automobile manufacturing to electronics and beyond, and they are one of the key technologies driving the Fourth Industrial Revolution. As a result, tiny electric robots with sophisticated controllers, microprocessors, miniature motors, gyros, and servos were created, making them perfect for simple assembly jobs like tightening bolts and nuts. By the late 1970s, robots were able to do arc welding, painting, and material transporting, among other jobs. By allowing trained laborers to focus on more crucial production processes, this greatly raised facility safety and increased staff efficiency.

### **Robotic Technology during the 1980- Laying the Foundation for the Future**

During the 1980s, robotic technology continued to advance and become more widely adopted in industry. One of the key developments of this period was the introduction of the first robots with microprocessor-based controllers, which greatly improved the flexibility and capabilities of these machines. This made it possible to program robots to perform a wider range of tasks, and it also allowed for easier integration with other production systems, such as computers and automated material handling systems.

Another important development during this period was the introduction of robots with advanced sensors and feedback systems, which allowed them to more accurately and precisely perform tasks that required fine control and manipulation.

This was particularly important in applications such as assembly, where robots were used to perform delicate and precise operations, such as screwing or bolting.

Overall, the 1980s was a period of rapid growth and development for the robotic industry, and it laid the foundation for many of the advances that have been made in the field since then.

### **Industrial Robots of Today and Tomorrow**

The use of industrial robots continues to grow and evolve, with more and more companies adopting automation to improve efficiency and competitiveness in their operations. Some of the key trends and developments shaping the present and future of industrial robots are the following:

As technology continues to improve, more and more industries are finding ways to automate their production processes, including the use of industrial robots. Increased automation is particularly evident in sectors such as automotive manufacturing and electronics, where robots are used to perform a wide range of tasks, from assembly to painting and welding.

Moving on, collaborative robots (cobots) are robots that are designed to work safely and effectively alongside human workers. This is an important development as it enables companies to take advantage of the strengths of both humans and robots, improving the overall efficiency of production processes.

Artificial intelligence and machine learning are playing an increasingly important role in the development and use of industrial robots. For example, these technologies are used to develop robots that can learn from experience, adapt to changing conditions, and make decisions on their own.

Finally, the Internet of Things (IoT) is changing the way that industrial robots are designed, built, and used. For example, robots equipped with IoT technology can be remotely monitored and managed, and they can also share data with other machines and systems in real-time.

The percentage of industry that is automated varies greatly depending on the country, industry sector, and other factors. However, some estimates suggest that the overall global rate of automation in industry is relatively low, with only around 10-15% of manufacturing processes currently being performed by robots.

In some countries and industries, the level of automation is much higher. For example, in countries with highly developed manufacturing sectors, such as Japan and Germany, the level of automation is estimated to be around 30-40%. In certain industries, such as the automotive industry, the level of automation can be even higher, with some estimates suggesting that up to 80% of certain production processes are performed by robots.

It's worth noting that the rate of automation is increasing rapidly, and many experts believe that we are at the beginning of a new wave of automation that will see robots playing an even greater role in industry in the coming years. So, while the current percentage of industry that is automated may be relatively low, this is likely to change in the near future as robots become more capable and cost-effective, and as companies look for ways to improve efficiency and competitiveness.

### **Positive Effects**

The increase in industrial robots is accompanied by various positive effects. Firstly, industrial robots are designed to perform specific tasks quickly and accurately, reducing the time and resources required to produce goods. This increased efficiency can help companies to reduce costs, increase productivity, and improve their overall competitiveness. Moving on, industrial robots are capable of producing goods with high levels of precision and consistency, which can result in improved product quality. This is especially important in industries such as electronics, where precision and consistency are critical. Furthermore, by performing dangerous or physically demanding tasks, industrial robots can help to reduce the risk of workplace accidents and injuries to human workers. This is especially important in industries such as construction and mining, where manual labor can be hazardous. Industrial robots can additionally work around the clock without getting tired, which means that they can produce goods at a much faster rate than human workers. This increased output can help companies to meet the growing demands of their customers and to expand their operations. Finally, while industrial robots do replace some human workers, they also create new job opportunities in areas such as engineering, maintenance, and robotics programming. These new jobs can help to stimulate economic growth and to create new opportunities for workers.

### **Negative Effects**

As it is evident, negative effects also accompany increased robots in industry. The most significant negative effect of robots in industry is job displacement, as robots are capable of performing many tasks that were previously performed by human workers. According to a study by the International Federation of Robotics, it's

estimated that robots have displaced around 2 million jobs worldwide. As robots displace human workers, they can contribute to income inequality by reducing the number of good-paying jobs available to workers. This can result in increased poverty and social unrest, especially in communities where jobs are already scarce. Additionally, as robots displace human workers, they can create a skills mismatch, as workers who have lost their jobs may not have the skills needed to perform other tasks that robots cannot perform. This can result in increased unemployment and underemployment, as well as reduced economic growth. Furthermore, the rapid adoption of robots can cause economic disruption, as companies that invest heavily in robots may outperform those that do not, leading to increased competition and potentially, the failure of some businesses. Finally, the use of robots in industry can have psychological effects on workers, including feelings of stress, anxiety, and frustration. Workers may feel that their jobs are at risk, and that their skills are becoming obsolete, which can lead to decreased job satisfaction and motivation.

These negative effects of robots in industry are important to consider, and efforts should be made to mitigate them, for example by investing in worker retraining programs, providing support for affected communities, and implementing policies that help to ensure that the benefits of automation are shared more widely. However, it's worth noting that the overall impact of robots on industry is complex, and that there are many factors that can influence the effects of automation, including the specific industry, the level of economic development, and the regulatory and institutional frameworks in place.

### **Rising of Ethical Concerns and Harm Risk**

Industrial robotization raises a number of ethical concerns. Responsibility for harm is a key issue that arises related to the question of “who should be held responsible if a robot causes harm to a person or property?” There is currently no clear answer to this question, and it remains an open area of debate. Additionally, the use of robots in industry often requires the collection and storage of large amounts of data, which can raise concerns about privacy and the security of personal information. Moving on, there is a risk that robots could perpetuate or amplify existing biases and discrimination in the workplace, particularly if they are trained on biased data sets or if the algorithms used to control their behavior are biased. The widespread adoption of robots in industry could have significant social and economic impacts, including increased income inequality, reduced economic growth, and increased poverty. Finally, there is currently a lack of clear legal and regulatory frameworks for the use of robots in industry, which can make it difficult to ensure that robots are used in an ethical and responsible manner.

These ethical risks of industrial robotization are important to consider, and efforts should be made to mitigate them through the development of clear ethical guidelines, codes of conduct, and regulatory frameworks. Additionally, it's important to engage in ongoing public discourse about the ethical implications of robotics, to ensure that the development and use of robots is guided by a shared understanding of the ethical considerations involved.

### **Measures taken to Monitor robotization**

There are several measures that can be taken to monitor and mitigate the negative effects of increased industrial robotization. Governments can put in place safety regulations to protect workers from harm caused by robots, such as guidelines for the design and use of robots in the workplace. Governments can also establish privacy regulations to protect personal data from misuse or abuse by robots or their operators. Furthermore, employers can implement fair treatment policies to ensure that workers are not treated unfairly or discriminated against as a result of robotization. The establishment of social safety nets, such as unemployment benefits and retraining programs, to provide support to workers who are displaced by robots. It is important to engage in ongoing public discourse about the ethical and social implications of industrial robotization, in order to ensure that robots are used in a way that is in the best interest of society as a whole. Professional organizations, industry groups, and government agencies can additionally develop ethical guidelines and codes of conduct to ensure that robots are used in a responsible and ethical manner. Finally, governments and employers may invest in worker retraining programs to help workers acquire new skills and transition to new jobs as the labor market changes.

### **Case Studies**

The BMW Group, which is a German multinational corporation that produces luxury vehicles and motorcycles is an example of a company that has implemented the use of industrial robots in various stages of the production process, including material handling, welding, and painting. The company has reported that the use of industrial robots has improved the efficiency, speed, and accuracy of the production process, while also reduced costs and increased productivity. Additionally, the use of industrial robots has also helped BMW Group to maintain high standards of quality and safety, which are critical to the success of the company.

Industrial robotization is not always as smooth. An example is General Motors (GM), an American multinational corporation that produces vehicles and vehicle parts. In the early 2000s, GM began to adopt the use of industrial robots in its production processes, including material handling, welding, and painting. As a result, many of the



jobs previously performed by human workers were automated, leading to significant job losses. According to estimates, thousands of workers were displaced by the adoption of industrial robots at GM, which had a significant impact on the local economy. This example highlights the need for careful consideration and monitoring of the impact of industrial robots on employment and the wider economy, as well as the need to develop strategies to mitigate the negative effects of robotization.

## **MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED**

### **Japan**

Japan has been a leader in the use of industrial robots for many years, and it is currently the country with the highest density of industrial robots in the world. Japanese companies such as Fanuc, Yaskawa, and Mitsubishi Electric have been at the forefront of robot technology, and Japan has also been a leader in the development of collaborative robots, which are designed to work alongside humans.

### **Germany**

Germany is another country that has played a key role in the development of industrial robots. German companies such as KUKA, ABB, and Siemens have been major players in the industry, and Germany is also home to a number of leading research institutions and universities that are involved in the development of robot technology.

### **United States of America**

The United States has also played a crucial role in the development and deployment of industrial robots. American companies such as Fanuc, ABB, and FANUC have been major players in the industry, and the US is home to a number of research institutions and universities that are involved in the development of robot technology.

### **South Korea**

South Korea is another country that has played a significant role in the development of industrial robots. Korean companies such as LG, Samsung, and Hyundai have been major players in the industry, and South Korea is home to a number of research institutions and universities that are involved in the development of robot technology.

### **China**

China has become a major player in the global robotics industry in recent years, and it is now the world's largest market for industrial robots. Chinese companies such as Siasun and Guobot are major players in the industry, and China is also home to a

number of research institutions and universities that are involved in the development of robot technology.

### **India**

India is another LEDC that is involved in the development and deployment of industrial robots. Indian companies such as Tata Motors and Bharat Forge are involved in the robotics industry, and India is also home to a number of research institutions and universities that are involved in the development of robot technology.

### **Brazil**

Brazil is also involved in the development and deployment of industrial robots. Brazilian companies such as WEG and Bosch are involved in the robotics industry, and Brazil is also home to a number of research institutions and universities that are involved in the development of robot technology.

### **Mexico**

Mexico is another LEDC that is involved in the development and deployment of industrial robots. Mexican companies such as CELSA and Nematik are involved in the robotics industry, and Mexico is also home to a number of research institutions and universities that are involved in the development of robot technology.

### **International Organization for Standardization (ISO)**

The ISO is an international standards organization that develops and publishes international standards for a wide range of technologies, including robotics. The ISO has developed a number of standards related to industrial robots, including ISO 10218, which covers the safety requirements for industrial robots, and ISO 9283, which covers the performance criteria for robots used in manufacturing. These standards help to ensure the safety and reliability of industrial robots and to ensure that they are used responsibly.

### **United Nations Industrial Development Organization (UNIDO)**

The UNIDO is an agency of the United Nations that promotes industrial development in developing countries and countries in transition. The UNIDO has supported the development and deployment of industrial robots in these countries as a way to promote industrial growth and development. The UNIDO also monitors the impact of robotization on employment and other factors in these countries and works to mitigate any negative impacts that may arise.

### International Federation of Robotics (IFR)

The IFR is an international organization that represents the robotics industry and promotes the use of robots. The IFR conducts research on robot technology and publishes data on the adoption and use of robots in various countries and industries. This information can be used to monitor the impact of robotization on employment and other factors.

### Robotic Industries Association (RIA)

The RIA is a trade association that represents the robotics industry in the United States. The RIA conducts research on robot technology and publishes data on the adoption and use of robots in various industries in the US. This information can be used to monitor the impact of robotization on employment and other factors.

### World Robot Summit (WRS)

The WRS is an international conference and exhibition that focuses on robotics and artificial intelligence (AI). The WRS brings together researchers, industry experts, and other stakeholders to discuss the latest developments in robot technology and to explore the potential applications and impacts of these technologies. This can help to identify any potential negative impacts of robotization and to develop strategies for addressing them.

### TIMELINE OF EVENTS

Date	Description of event
1954	George Devol patents the first industrial robot.
1961	The first industrial robot, called Unimate, is installed in a General Motors factory in New Jersey
Late 1960s and early 1970s	Industrial robots begin to be used in a wider range of industries, including automobile manufacturing, electronics, and food processing.
Late 1970s and early 1980s	The first generation of industrial robots begins to be replaced by more advanced models.
Late 2000s and early 2010s	The deployment of industrial robots continues to increase, driven in part by advances in technology and the increasing globalization of production.

Mid-2010s	Concerns about the impacts of industrial robotization on employment and other aspects of society begin to emerge and calls for greater monitoring and mitigation efforts grow.
Late 2010s and early 2020s	A number of initiatives aimed at monitoring and mitigating the impacts of industrial robotization are launched, including by governments, international organizations, and private sector organizations.

### RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

#### United Nations General Assembly Resolution A/RES/68/62<sup>8</sup>

This resolution, adopted by the UN General Assembly in 2013, recognized the potential of robotics and artificial intelligence (AI) to contribute to economic and social development, and called for the establishment of ethical standards and guidelines for the use of these technologies. The resolution also called for the monitoring and assessment of the impacts of these technologies on employment and other factors, and for the development of policies and programs to address any negative impacts that may arise.

#### United Nations General Assembly Resolution A/RES/70/1<sup>9</sup>

This resolution, adopted by the UN General Assembly in 2015, recognized the importance of the sustainable development goals (SDGs) in addressing global challenges and promoting the well-being of all people. The resolution called for the responsible development and deployment of robotics and AI in order to contribute to the achievement of the SDGs and called for the establishment of ethical standards and guidelines for the use of these technologies.

<sup>8</sup> "Regional confidence-building measures: activities of the United Nations Standing Advisory Committee on Security Questions in Central Africa." *ODS*, documents-dds-ny.un.org/doc/UNDOC/GEN/N13/443/17/PDF/N1344317.pdf?OpenElement.

<sup>9</sup> "A/RES/70/1." *EsubscriptionUi*, undocs.org/Home/Mobile?FinalSymbol=A%2FRES%2F70%2F1&Language=E&DeviceType=Desktop&LangRequested=False.

### **United Nations General Assembly Resolution A/RES/75/61<sup>10</sup>**

This resolution, adopted by the UN General Assembly in 2021, reaffirmed the importance of the responsible development and deployment of robotics and AI in order to contribute to the achievement of the SDGs. The resolution also called for the establishment of ethical standards and guidelines for the use of these technologies, and for the monitoring and assessment of the impacts of these technologies on employment and other factors.

### **United Nations International Conference on Robotics and Artificial Intelligence**

The UN International Conference on Robotics and Artificial Intelligence is an annual conference that brings together experts and stakeholders from around the world to discuss the latest developments in robot technology and to explore the potential applications and impacts of these technologies. The conference is an opportunity to monitor the progress of industrial robotization and to identify any potential negative impacts that may arise.

## **PREVIOUS ATTEMPTS TO SOLVE THE ISSUE**

### **The EU Robotics Strategy**

This strategy, which was adopted in 2016, sets out the EU's vision for the development and deployment of robots and identifies priorities for research, development, and innovation in the field. The strategy also calls for the establishment of ethical standards and guidelines for the use of robots, and for the monitoring of the impacts of these technologies on employment and other factors.

### **The EU Robotics Coordination Action**

This program, which was established in 2012, brings together researchers, industry experts, and other stakeholders from across the EU to coordinate research and development on robotics and AI. The program also conducts research on the impacts of these technologies on employment and other factors and helps to develop strategies for addressing any negative impacts that may arise.

### **The Arab Robotics Network**

This network, which was established in 2018, brings together researchers, industry experts, and other stakeholders from across the Arab League to collaborate on research and development on robotics and AI. The network also conducts research

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<sup>10</sup> "United Nations study on disarmament and non-proliferation education." *ODS*, documents-dds-ny.un.org/doc/UNDOC/GEN/N20/356/45/PDF/N2035645.pdf?OpenElement.

on the impacts of these technologies on employment and other factors and helps to develop strategies for addressing any negative impacts that may arise.

### **The Arab Robotics Forum**

This forum, which was established in 2019, is an annual event that brings together experts and stakeholders from across the Arab League to discuss the latest developments in robot technology and to explore the potential applications and impacts of these technologies. The forum is an opportunity to monitor the progress of industrial robotization in the Arab region and to identify any potential negative impacts that may arise.

## **POSSIBLE SOLUTIONS**

### **Issuing Guidelines and recommendations to Member Nations**

Issuing guidelines and recommendations on the responsible development and deployment of robotics and artificial intelligence (AI) is a crucial step that the UN can take to monitor and mitigate industrial robotization. These guidelines and recommendations aim to promote the ethical use of these technologies and to address any potential negative impacts that may arise from their use.

For example, the guidelines could include recommendations on the design and deployment of robotic and AI systems, with a focus on ensuring that these systems are developed in a way that protects workers' rights and promotes the well-being of people. The guidelines could also provide recommendations on the use of these technologies in the workplace, with a focus on ensuring that they are used in a way that is safe, ethical, and respects workers' rights.

Additionally, the guidelines could address the potential impact of industrial robotization on employment, including recommendations on how to manage job displacement and support workers who may be affected by the deployment of these technologies. The guidelines could also address the need for ongoing monitoring and evaluation of the impact of industrial robotization, in order to ensure that the benefits of these technologies are realized, while minimizing any negative impacts on workers and society as a whole.

### **Supporting Research Initiatives**

Supporting research and development on robotics and AI is a critical step towards better understanding the impact that these technologies will have on society and the economy. This can help to ensure that the development and deployment of these technologies are responsible and ethical, and that any negative impacts are identified and mitigated.

Through funding research projects, the UN can support the development of new technologies and applications, as well as encourage interdisciplinary research that brings together experts from different fields to explore the potential impacts of these technologies. Additionally, convening experts and stakeholders to discuss these issues can help to promote a broader understanding of the potential benefits and risks associated with robotics and AI, and to encourage the development of solutions to address any challenges that may arise.

Finally, promoting the sharing of knowledge and expertise on these topics can help to ensure that the knowledge and insights generated through research and development are widely disseminated and can be used to inform decision-making and policy development. This can help to ensure that the development and deployment of robotics and AI technologies are responsible, ethical, and equitable, and that they contribute to sustainable development.

#### **Collaboration of the UN with NGOs, Government agencies and the Private sector**

The United Nations (UN) recognizes the importance of working with a wide range of organizations to monitor and mitigate the impacts of robotization. By collaborating with government agencies, NGOs, and private sector companies, the UN can tap into the expertise and resources of these organizations to develop policies, programs, and initiatives that address the challenges and opportunities posed by industrial robotization. This collaboration can help to ensure that the responsible use of robotics and artificial intelligence (AI) is promoted, and that any negative impacts of these technologies are mitigated.

For example, the UN could work with government agencies to develop regulations and standards for the deployment of robotics and AI in the workplace. These regulations and standards could cover areas such as worker safety, data privacy, and the protection of human rights. The UN could also work with NGOs and private sector companies to promote the development of technologies that are designed to enhance the productivity of workers, rather than displace them. This could include technologies that augment human capabilities, as well as those that are designed to automate repetitive or dangerous tasks.

In this way, the UN's collaboration with other organizations can help to ensure that the benefits of industrial robotization are realized, while minimizing its negative impacts on society and the economy.

### Promoting International Cooperation

The UN can promote international cooperation on robotics and AI as a way to address the global challenges and opportunities presented by these technologies. By working with member states to develop common approaches to the responsible use of these technologies, the UN will aim to ensure that the benefits of robotization are shared and distributed fairly across the global community. Additionally, the UN may collaborate with international organizations and other stakeholders to address issues related to robotization and its impacts on society and the economy.

This type of international cooperation can help to ensure that the development and deployment of robotics and AI align with broader global goals and objectives, such as sustainable development and human rights. It will also help to promote a more coordinated and effective response to the challenges and opportunities presented by robotization, and to promote the sharing of knowledge and expertise on these topics.

The UN's efforts to promote international cooperation on robotics and AI also help to ensure that these technologies are developed and deployed in a way that takes into account the needs and perspectives of different countries and regions. This helps to promote a more equitable distribution of the benefits of these technologies, and to mitigate any negative impacts that may arise from their use.

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