Southern China International MUN

Official Backgound Guide

United Nations Commission on Science and Technology for Development: On measures to regulate implications of AI technology in the labor market while ensuring employment stability.

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1. Description of the Issue

1.1 History of the Issue

AI first emerged in the mid-20th century. At the 1956 Dartmouth Conference, it was conceptualized as machines simulating human intelligence. However, its noticeable impact on employment began with the rise of computing in the 1970s and 1980s, where early automation displaced routine manufacturing jobs, akin to the Industrial Revolution's mechanization effects[1]. By the 1990s, AI applications in data processing and expert systems started affecting white-collar roles, though limited by computational power and AI "winters" of reduced funding. [2]

The 2010s marked a significant shift with advancements in machine learning and big data, allowing AI to handle complex tasks such as image recognition and natural language processing. This era has strengthened the usage of AI in sectors including finance and healthcare but also raising concerns and worries over job displacement. For example, between 2013 and 2023, AI contributed to a 25% reduction in U.S. retail sales jobs, dropping from 7.5% to 5.7% of the market.

However, the displacement effects have not been uniformed across economies. The Organization for Economic Co-operation and Development (OECD) documented in its 2019 Employment Outlook that approximately 14% of jobs across member countries faced high automation risk, with an additional 32% likely to experience substantial transformation. Especially the manufacturing sectors in developed economies encountered the earliest impacts, with robots and computer numerical systems replacing assembly line workers throughout the 1980s and 1990s. The International Labor Organization (ILO) estimates that between 1990 and 2010, automation contributed to the loss of approximately 1.3 million manufacturing jobs in the United States alone, though these losses were partially offset by job creation in service sectors.

[1] https://www.cbia.com/news/featured/ai-labor-what-history-tells-us/
[2] https://www.econstor.eu/bitstream/10419/205178/1/Garcia-Murillo-MacInnes.pdf

The financial sector is another example. According to research by the World Economic Forum, between 2000 and 2020, major banks reduced teller positions by approximately 40% as automated teller machines (ATMs) and the expansion of the use of online banking. However, this same period has also shown growth in financial advisory and analytical positions, demonstrating the dual nature of technological displacement and creation.

A huge turning point occurred in 2012 with the development of deep learning techniques, particularly convolutional neural networks (CNN) that achieved an exceptional performance in image recognition. This technological innovation expanded AI applications beyond routine tasks into cognitive areas previously considered could be done only by humans. By 2016, AI systems began outperforming humans in specific tasks including medical image diagnosis, language translation, and strategic game playing. These capabilities suggested that white-collar professional work that was long assumed immune to automation faced substantial disruption.

The 2020 COVID-19 pandemic accelerated AI adoption across industries. The United Nations Conference on Trade and Development (UNCTAD) reported that businesses rapidly implemented automation and remote work technologies, with global AI investment reaching $77.5 billion in 2021, up from $36 billion in 2019. This acceleration negatively affected customer facing workers, with contactless service systems replacing human interaction in retail, hospitality, and food services. The ILO estimated that the pandemic-related automation surge reduced approximately 8.8% of global working hours in 2020, which is equivalent to 255 million full-time jobs, with recovery remaining uneven.

Most recently, the emergence of generative AI systems in 2022-2023, especially large language models capable of producing human quality text, code, and creative content, has created an uncertainty regarding work stability. Goldman Sachs Research projected in 2023 that generative AI could expose 300 million full-time jobs globally to automation, affecting approximately 2/3 of current occupations in the United States and Europe.

1.2 Recent Developments

Since 2020, several major developments have intensified the urgency of regulatory responses. The release of systems, such as GPT-3, GPT-4, DALL-E, and Midjourney, has demonstrated AI’s capabilities in creative and analytical tasks, which are previously considered distinctly as a human skill. Workforce applied AI’s analytical capabilities, as a 2023 study by MIT and the Wharton School found that consultants using GPT-4 completed tasks 25% faster with 40% higher quality ratings – a substantial productivity gains. Platform economy companies increasingly deploy AI systems to manage workers without human supervision. The ILO's 2023 World Employment and Social Outlook reported that 71% of digital platform workers experience AI-based management, often with limited transparency regarding performance evaluation. In terms of regulation, the European Union advanced the AI Act through legislative processes. Adopted in final form in March 2024, the Act classifies AI systems by risk level, imposing strict requirements on "high-risk" applications including employment. The Act mandates transparency, human oversight, and conformity assessments for AI systems used in hiring and performance evaluation. Violations carry fines up to €35 million or 7% of global revenue.

The Technology and Innovation Report 2023 from UNCTAD has documented widening gaps between developed and developing nat
ions in AI capacity. While the United States, China, and the European Union account for over 85% of AI patents and investments, most of the developing countries lack both basic AI infrastructures and regulatory frameworks. For instance, Bangladesh's garment sector, employing 4 million workers, faces existential threats from automated sewing technologies, while the country has minimal capacity for workforce transition support.

Around AI governance, in 2023, the Writers Guild of America and the Screen Actors Guild conducted strikes, partially triggered by concerns over AI use in content creation. On the other hand, recent research suggests the growth of polarization in the labor market. The OECD documented increasing wage gaps between high-skilled workers, who complement AI systems, and low and middle skilled workers, who face automation of their task.

In 2023, the United Nations Secretary-General established a High-level Advisory Body on Artificial Intelligence (HLAB-AI) to analyze AI governance challenges. In addition, UNESCO's 2021 Recommendation on the Ethics of Artificial Intelligence, adopted by 193 member states, provides normative guidance emphasizing human rights and accountability. However, practical policy implementation remains unclear, as existing UN and UNESCO frameworks rely on non-binding guidance, face fragmented mandates and limited national capacity, and lack robust enforcement mechanisms to ensure compliance in practice.

Key Terms

Artificial Intelligence (AI) - The application of computer systems able to perform tasks or produce output normally requiring human intelligence, especially by applying machine learning techniques to large collections of data, including learning from experience, recognizing patterns, making decisions, and understanding natural language.

Automation - Automation is the use of machines, software, or technical systems to perform tasks that would otherwise require human labor. In labor-market debates, it usually refers to technology that can substitute for or significantly reduce the amount of human work needed for routine or predictable activities. Automation can be physical (robots performing manual tasks) or cognitive (software performing analytical tasks).

Algorithmic Management - Algorithmic management is the use of computer-programmed procedures and algorithms to coordinate, monitor, and control work and workers, often replacing traditional human supervisors.

Job Displacement - Job displacement is the loss of a job when a worker’s position is eliminated, often because technology, trade, or restructuring makes that role unnecessary for the employer. In the AI context, it refers to workers being replaced or no longer needed because AI systems or automation now perform their tasks.

Job Polarization - Job polarization is the “hollowing out” of middle-wage jobs, where employment grows mainly in high-wage and low-wage occupations while declining in mid-wage, routine roles. Technological change, including ICT, robotics, and AI, is a key

driver because it tends to automate routine middle-skill tasks while complementing high-skill and some low-skill service work.

Platform Economy/ Gig Economy – The platform economy or gig economy refers to a labor market characterized by the prevalence of short-term contracts or freelance work as opposed to permanent jobs.

Digital Divide – Digital Divide refers to the gulf between those who have ready access to computers and the internet, and those who do not. In the field of AI and labor, it highlights how unequal access to connectivity, data, and digital skills can limit workers' and nations' ability to take advantage of new technologies and may widen existing inequalities.

2. Emphasis on the Discourse

2.1 Stance of Developed Countries

Developed countries are characterized by a , advanced economies and accelerating technological progress, Key players include North America, Western Europe, Israel, Japan, South Korea, Australia, and New Zealand. These nations prioritize AI for economic competitiveness and national security.Moreover, in Europe,countries advocate for technological sovereignty and balance innovation with labor rights. The EU is leading in AI regulation with its AI Act and robust protections, contrasting with the U.S. focus on innovation with less regulation. Concerns about AI-driven job displacement, especially in middle-skill roles, are increasing, fueling economic insecurity and social anxiety that can influence political dynamics and strengthen support for populist movements skeptical of globalization and automation. In East Asia, Japan and South Korea increasingly frame AI as a crucial response to demographic challenges, such as very low birth rates, rapid population aging, and shrinking labor pools, that threaten long-term productivity and the sustainability of welfare systems, promoting AI and automation to maintain output, support eldercare, and address labor shortages while acknowledging that these strategies still carry risks of workforce displacement and require active reskilling and social protection measures.

2.2 Stance of Developing Countries

Developing countries are characterized by lower quality of life, weaker economic development, and limited technological capacity, with notable examples in parts of Eastern Europe, Sub-Saharan Africa, South Asia, Southeast Asia, Latin America, and the Middle East. Many of these nations depend on labor cost advantages for industrialization, but face risks from AI-driven automation, premature deindustrialization, and limit of growth potential. Regulatory challenges arise due to insufficient technical expertise and minimal legislation, leaving informal workers vulnerable to displacement. A significant brain drain accelerates development challenges, with skilled professionals emigrating to developed countries. Nations like China and India showcase varying approaches to leveraging AI for economic advancement while maintaining a focus on development needs and technology sovereignty. Overall, developing countries prioritize technology transfer, capacity building, financial resources, and policies that align with their development goals, including poverty alleviation.

3. Possible Solutions

3.1 In favor of Developed Countries

With the technological capabilities and financial resources that developed nations possess, it is crucial for these countries to take leadership in addressing AI labor market challenges. Developed countries have the privilege of possessing adequate capital and institutional capacity that can be utilized comprehensive AI governance. As such, developed countries can help by focusing on efforts to establish universal lifelong learning systems. Examples include Singapore's SkillsFuture system, providing all citizens with training credits and personalized career guidance, is a good model.

Another possible way developed countries can help with addressing fiscal pressures is by implementing progressive automation taxation. Proposals include robot taxes assessing firms based on human labor displaced, algorithmic management fees charged to companies using AI systems for workforce management, and AI productivity levies capturing productivity gains for public investment.

3.2 In favor of Developing Countries

Developing countries face challenges in implementing comprehensive AI governance due to financial and institutional limitations. Despite the challenge, developing countries can adopt strategic interventions such as regional cooperation, leveraging frameworks from organizations like the African Union and ASEAN to establish shared standards. Platforms for South-South learning can facilitate knowledge exchange, while joint procurement can enhance bargaining power. Targeted skill development focusing on digital literacy, creativity, emotional intelligence, and adaptability is recommended over broad reskilling. Developing nations can utilize mobile technology to create training applications and platforms for remote work. Additionally, these countries should demand technology transfer from developed nations, ensuring equitable data sharing and capacity building efforts. Coordination in regulating global digital platforms and enhancing algorithmic transparency is critical for social protection and labor law compliance.

4. Keep in Mind the Following

When researching your country's stance on this topic, make sure to properly investigate the current level of AI capability and deployment. Research the extent to which your country is directly involved in AI technology development, and the extent of responsibility they should hold for managing labor market consequences. Consider your country's motives for promoting or regulating AI, or their motives for the actions they have taken in the past. Some questions to guide you through your research are the following:

1. *What is your country's current level of AI capability and deployment? Is your country an AI leader, emerging player, or primarily an AI consumer?*
2. *What is your country's labor market structure and vulnerability to AI disruption? Which sectors dominate employment and what percentage of jobs face automation risk?*

3. *What existing policies does your country implement regarding AI and employment? Does your country have a national AI strategy, relevant labor regulations, or data protection laws?*
4. *What is your country's geopolitical and economic interests regarding AI regulation? How does your country balance innovation promotion with social protection?*
5. *What domestic political pressures shape your country's position? How strong are labor unions, technology industry influence, and public concerns about automation?*
6. *What is your country's relationship with international organizations? What is your level of engagement with the ILO, UNESCO, UNCTAD, and regional organizations?*

5. Evaluation

The implications of AI on labor markets are a multifaceted challenge, balancing innovation with stability. The integration of AI into global labor markets has been creating widespread disruption, threatening worker livelihoods, and economic stability. While developed nations drive AI advancement, developing countries risk exclusion, underscoring the need for equitable regulations. This topic demands collaborative solutions in CSTD to ensure employment stability amid technological progress, requiring delegates to adopt flexible, evidence-based stances.

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