

KEYNOTE PRESENTATION

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WHAT IS ARTIFICIAL INTELLIGENCE (AI)

Artificial intelligence is a branch of computer science that aims to create intelligent machines. It has become an essential part of the technology industry.

Research associated with artificial intelligence is highly technical and specialized. The core problems of artificial intelligence include programming computers for certain traits such as:

- Knowledge
- Reasoning
- Problem solving
- Perception
- Learning
- Planning
- Ability to manipulate and move objects



BENEFITS OF ARTIFICIAL INTELLIGENCE



Leveraging AI to Achieve Sustainable Development Goals (SDGs)

The question remains “How can the power of AI be Harnessed for Social good, How can it accelerate the SDGs?

There are a growing number of use cases for AI enabling the SDGs, as shown in this presentation



SDG 1: No poverty

AI will provide real-time resource allocation through satellite mapping and data analysis of poverty.

SDG 2: Zero hunger

Agriculture productivity is increased through predicitive analysis from imaging with automated drones and from satellites. Nearly 50% of crops are lost through waste, over consumption and **production inefficiencies**. Livestock production losses are 78%.

SDG 3: Good health and well-being

Preventative healthcare programs and diagnostics are significantly improved through AI leading to new scientific breakthroughs. There are 8 billion mobile devices with smartphone cameras being used to diagnose heart, eye and blood disorders; microphone and motion sensors yielding insights into bone density and osteoporosis – and managing cancer, diabetes and chronic illness remote care.

Accelerating SDGs Cont'

4 QUALITY EDUCATION



5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



SDG 4: Quality education

Virtualized, intelligent mentors and responsive personalized learning is revolutionizing education, and improving participation and outcomes – all powered by AI. Online providers such as **Coursera** have AI-produced granular information for effective learning. **Big data analysis** is improving graduation rates of low-income and first-generation college students by 30%, spotting warning signs before dropout to allow targeted interventions.

SDG 5: Gender equality

By identifying and correcting for gender bias, further automating/augmenting tasks, AI is empowering women for growth and new opportunities.

SDG 6: Clean water and sanitation

The Internet-of-Things (IoT) and sensors feeding into the AI of Everything are predicting sanitation and consumption patterns for improved safe water and sanitation provisioning.

Accelerating SDGs Cont'

7 AFFORDABLE AND CLEAN ENERGY



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



10 REDUCED INEQUALITIES



SDG 7: Affordable and clean energy

Green energy in all its forms is continuously improving for increased output and more efficiency by AI real-time analysis.

SDG 8: Decent work and economic growth

Despite legitimate concerns about automation replacing jobs, AI augmentation and targeted automation with intelligent devices can improve the work environment, increase productivity, and be a significant driver of economic growth.

SDG 9: Industry innovation and infrastructure

New hybrid manufacturing incorporating AI, IoT sensors, and 4D printing is reshaping industries, representing the 'A Triple C', and yielding exponential innovation unprecedented in world history.

SDG 10: Reduced inequalities

Human augmentation using AI-inspired devices both internally and externally provides super senses and knowledge, enhanced physical capabilities, and corrects disabilities yielding a more equal and inclusive society.

Accelerating SDGs Cont'

11 SUSTAINABLE CITIES
AND COMMUNITIES



12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



13 CLIMATE
ACTION



14 LIFE
BELOW WATER



SDG 11: Sustainable cities and communities

The AI of Everything, the digital AI mesh, fed by the ubiquitous IoT, smart devices, and wearables, is already impacting smart cities and helping to create sustainable communities.

SDG 12: Responsible consumption and production

AI is yielding optimal consumption and production levels with vertical green farms, eliminating waste, and vastly improving yields and resource efficiency.

SDG 13: Climate action

Climate change data analysis and climate modeling infused with AI predicts climate-related problems and disasters.

SDG 14: Life below the water

Pattern recognition can track marine-life migration, population levels, and fishing activities to enhance sustainable marine ecosystems and combat illegal fishing.

Accelerating SDGs Cont'

15 LIFE ON LAND



16 PEACE, JUSTICE AND STRONG INSTITUTIONS



17 PARTNERSHIPS FOR THE GOALS



SDG 15: Life on land

Pattern recognition, game theory, and wide applications of computer science can track land-animal migration, population levels, and hunting activities to enhance sustainable land ecosystems and combat illegal poaching.

SDG 16: Peace, justice, and strong institutions

Thoughtful application of AI can reduce discrimination, corruption, and drive broad access to e-government, personalized, and responsive intelligent services. AI can significantly stay ahead of global cyberthreats, the **Cyber Kill Chain**, in a manner not possible before.

SDG 17: Partnerships for goals

Multi-sectoral collaboration is essential for the safe, ethical, and beneficial development of AI. ITU is working with other United Nations agencies, and the **XPRIZE Foundation**, to organize the "**AI for Good Global Summit**" in Geneva, Switzerland, from 7 to 9 June. The summit will bring together governments, industry, academia and civil society to explore the responsible development of human-centric AI in solving humanity's grand challenges, including accelerating the all-important SDGs.

CHALLENGES WITH AI

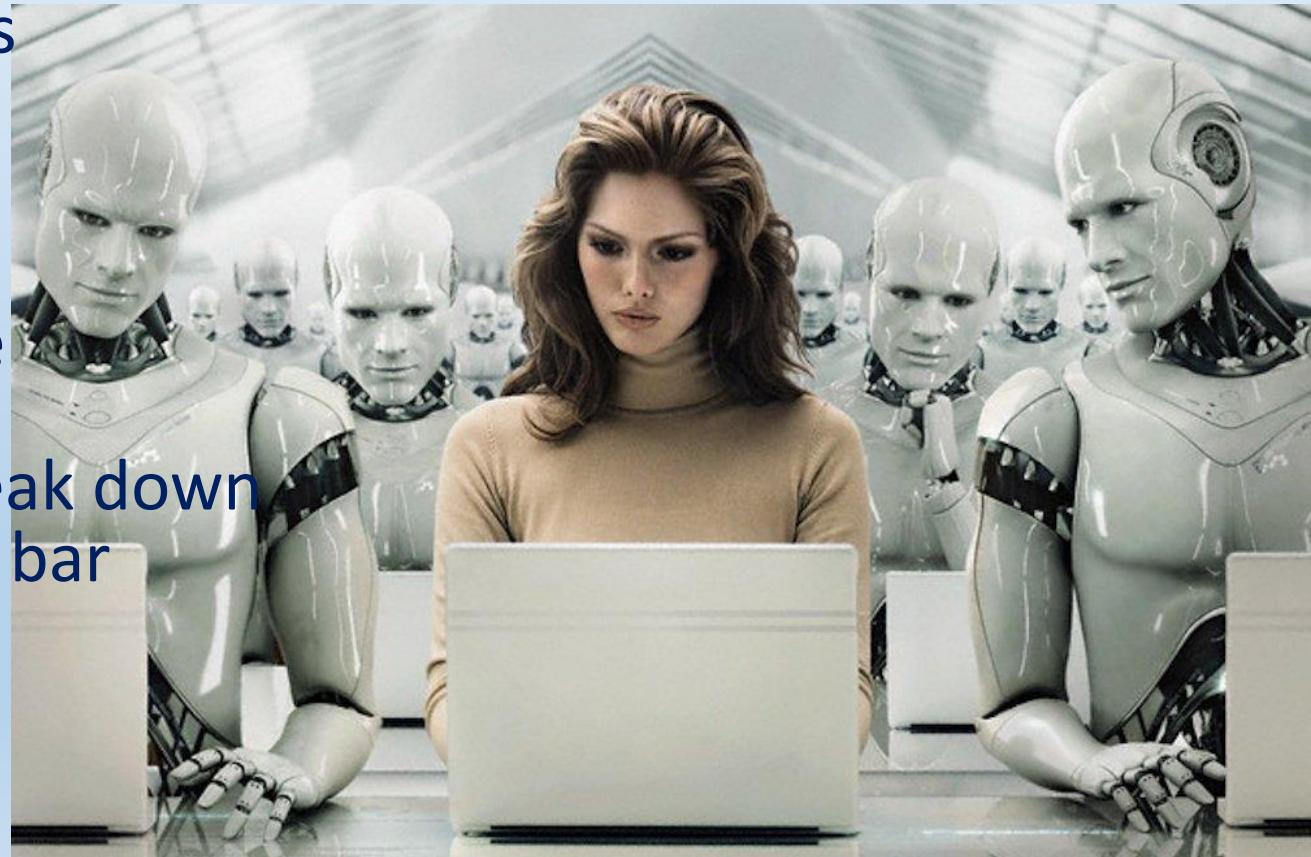
As strong as the potential is for good, however, AI also carries with it some significant challenges. The key issues that AI needs to address are

- Jobs
- Bias
- Responsibility
- Privacy



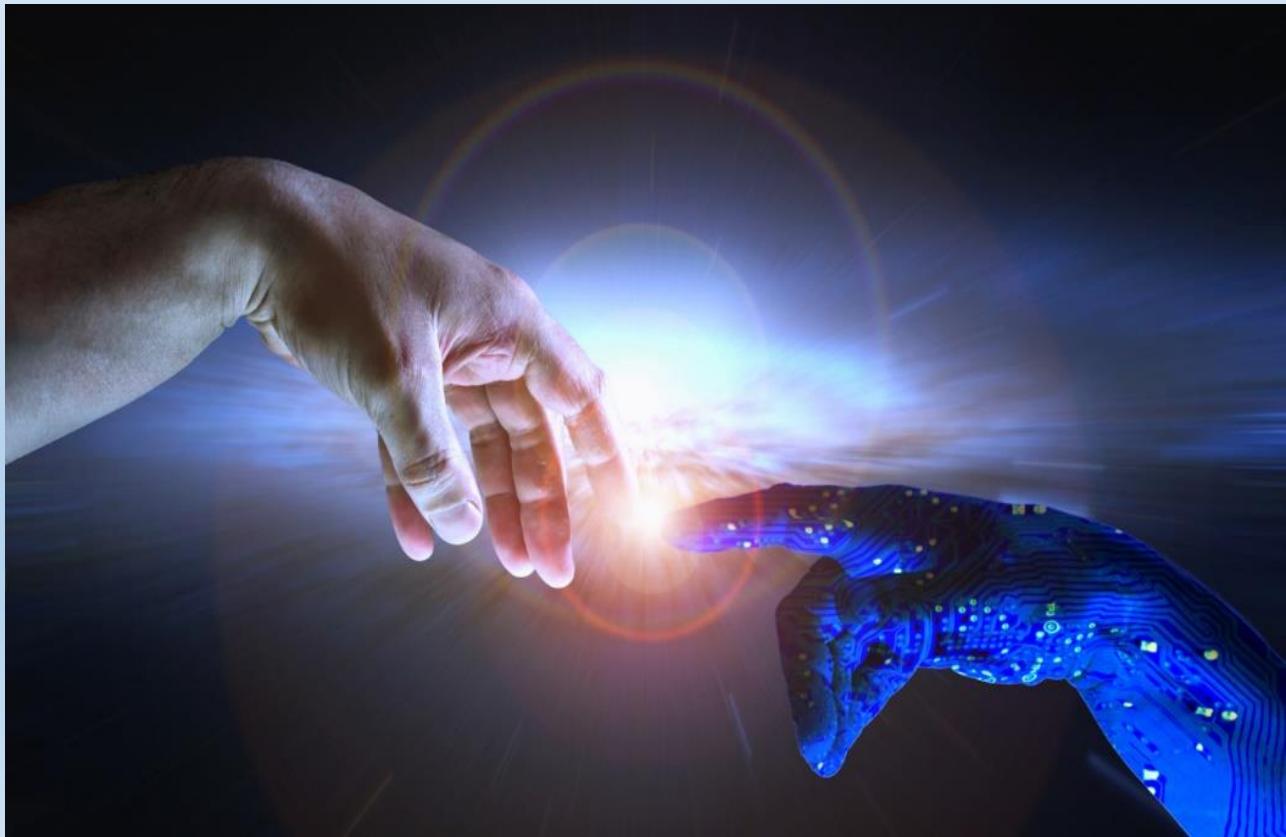
Jobs

- Automation has been eating away at manufacturing jobs for decades.
- The impact of technology on employment is already a challenge with more than 60% of jobs potentially becoming automated in the near term.
- Teaching new tech skills to people who are losing or might lose their jobs to AI in the future can complement the efforts.
- In tandem, tech companies can employ rising trends such as cognitive computing and natural language generation and processing to help break down the complexity of tasks and lower the bar for entry into tech jobs, making them available to more people.



Responsibility

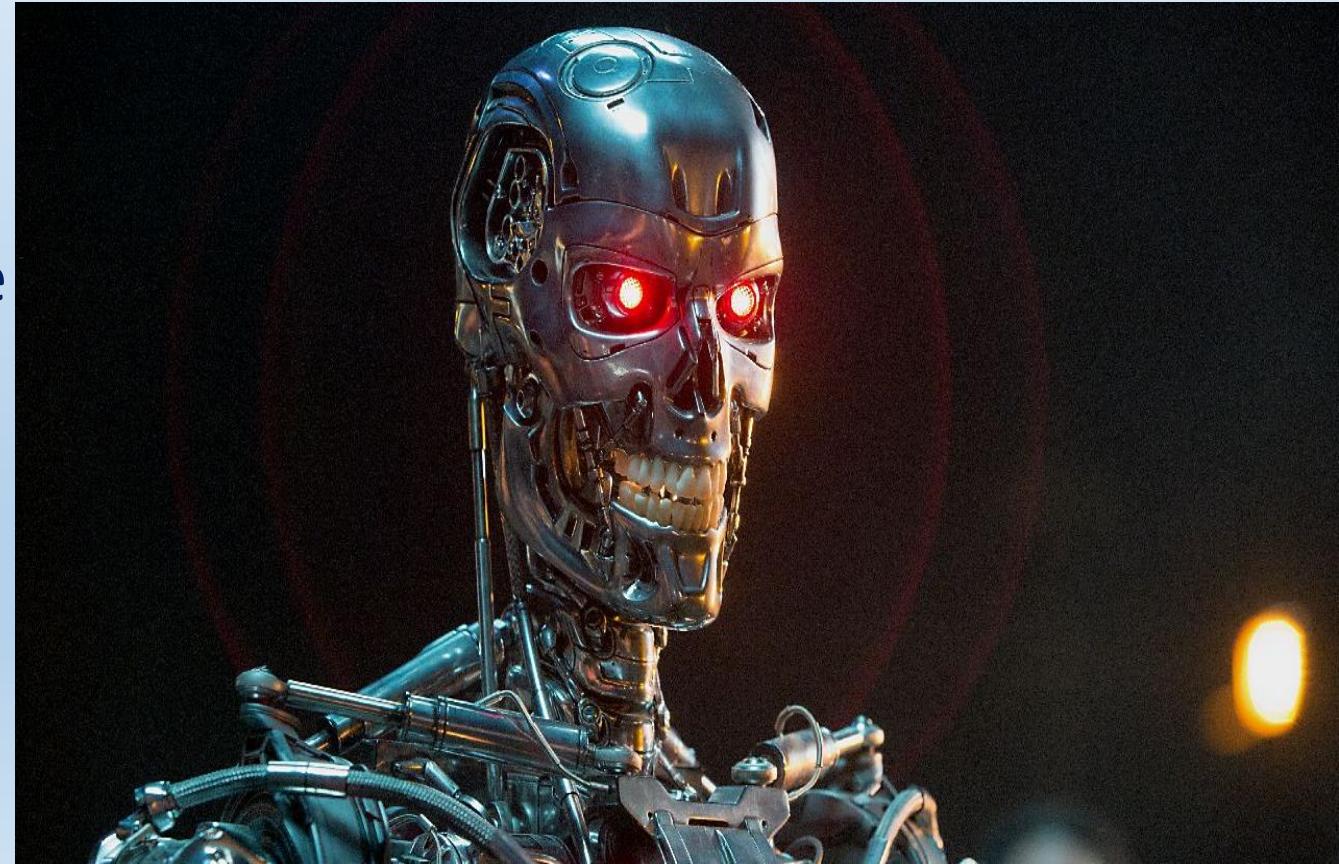
- Who's to blame when a software or hardware malfunctions? Before AI, it was relatively easy to determine whether an incident was the result of the actions of a user, developer or manufacturer.
- But in the era of AI-driven technologies, the lines are not as clear cut.
- This can become an issue when AI algorithms start making critical decisions such as when a self-driving car has to choose between the life of a passenger and a pedestrian.



Bias

A few examples of potential algorithmic bias that have been featured in government reports and news articles include:

- Job hunting web sites: Do these sites send more listings of high paying jobs to men than to women?
- A name-ranking algorithm ended up favoring white-sounding names,
- Advertising algorithms preferred to show high-paying job ads to male visitors.
- Social media sites: What factors go into determining the news items that are served up to users?



Privacy

- AI feeds on data, and companies that center their business around the technology will grow a penchant for collecting user data, with or without the latter's consent, in order to make their services more targeted and efficient.
- In the hunt for more and more data, companies may trek into uncharted territory and cross privacy boundaries.

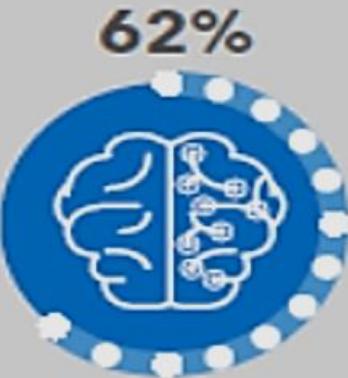


Some Future Predictions for AI

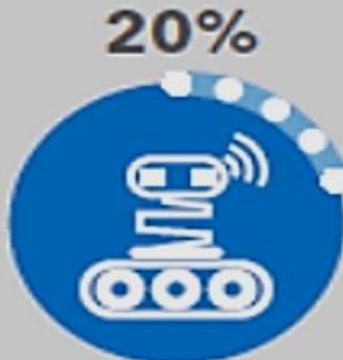
A few predictions

By 2018...

In business and home



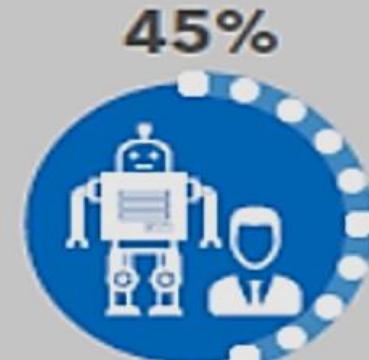
62% of organizations will be using artificial intelligence (AI) technologies



20% of business content will be authored by machines



6 billion connected things will be requesting support

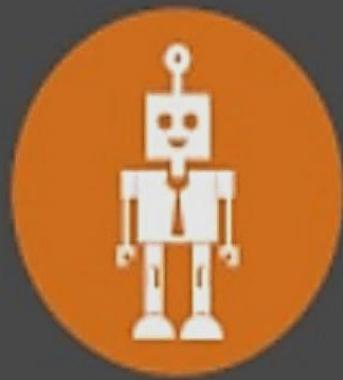


45% of the fastest-growing companies will have fewer employees than instances of smart machines

Predictions in Workplace

In the workplace

3 million



More than **3 million** workers
globally will be supervised by
a "robo-boss"

2 million



2 million employees will be
required to wear health and
fitness tracking devices as a
condition of employment

50%



Global demand for data
scientists will exceed supply by
more than **50%**

Prediction in Healthcare

In health

50%



Physicians will use cognitive solutions to identify the most effective treatment for **50%** of complex cancer patients, resulting in a 10% reduction in mortality and 10% in cost

50%



Surgeons will use computer-assisted or robotic surgery techniques to assist in planning, simulating, and performing **50%** of the most complex surgeries

30%



30% of worldwide healthcare systems will employ real-time cognitive analysis to provide personalized care leveraging patient's clinical data, directly supported by RWE data

Conclusion

- There are benefits and dark sides to every disruptive technology, and AI is no exception to the rule.
- What is important is that we identify the challenges that lay before us and acknowledge our responsibility to make sure that we can take full advantage of the benefits while minimizing the tradeoffs.
- The robots are coming. Let's make sure they come in peace.



THANK YOU!!!



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