

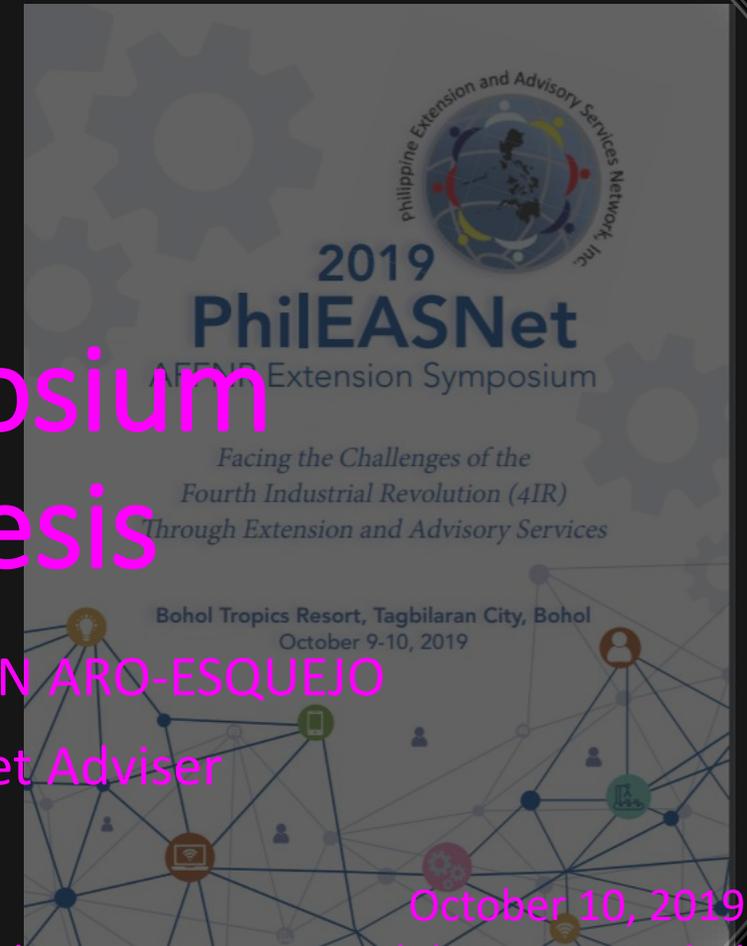
Symposium Synthesis

By DR. EVELYN ARO-ESQUEJO

PhilEASNet Adviser

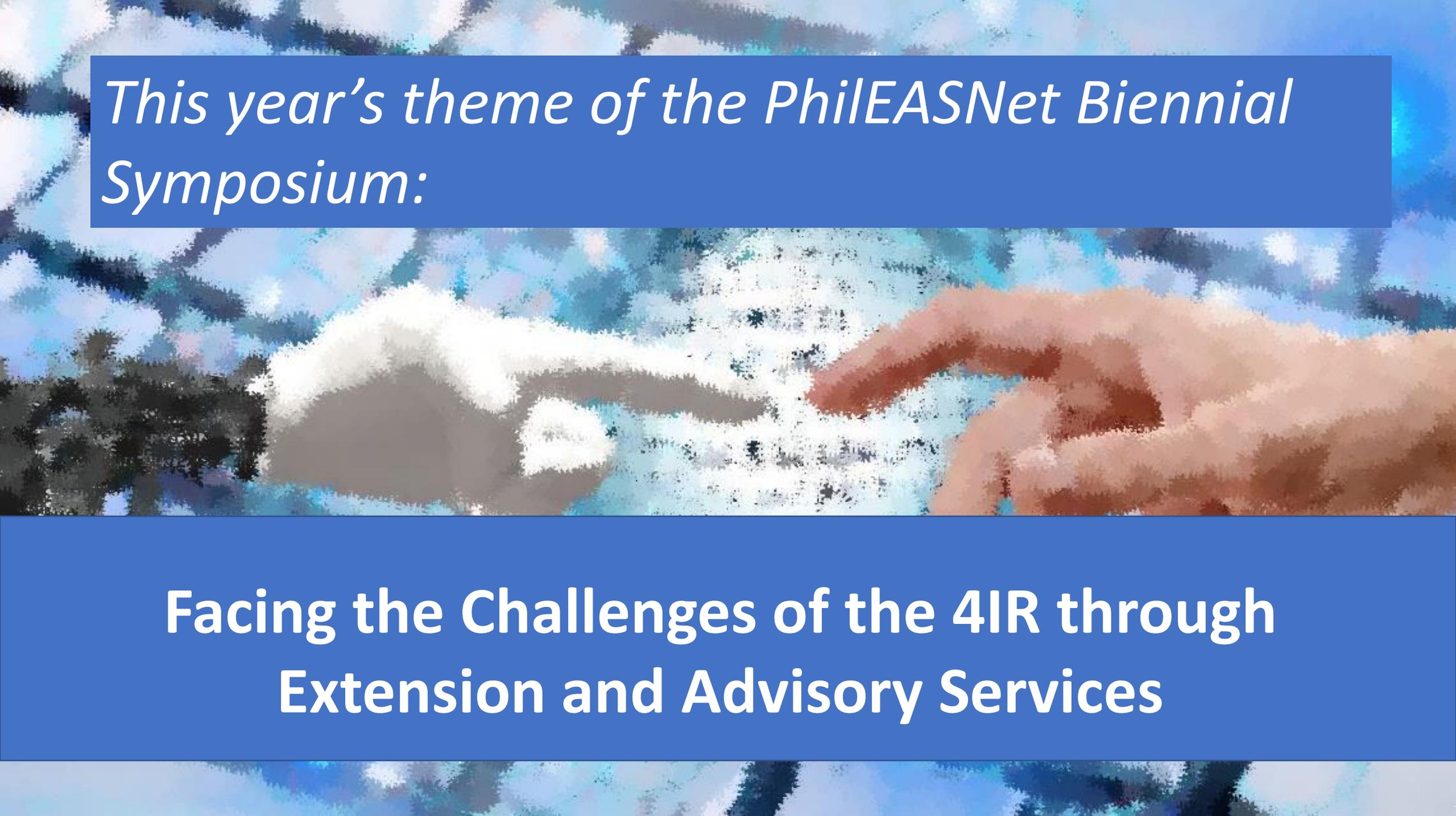
October 10, 2019

Bohol Tropics Resort, Tagbilaran City, Bohol





*What's
Up?*



This year's theme of the PhilEASNet Biennial Symposium:

**Facing the Challenges of the 4IR through
Extension and Advisory Services**

In their Welcome Messages



- 4IR is not a prediction of the future, but a **call to action** (Klaus Martin Schwab, World Economic Forum)
- As extension professionals, we have to be prepared and equipped to ensure that the 4IR will inspire us **to create solutions** for the AFFNR.
- We need to **step forward** and **adapt well . . .** and win the challenge
(Dr. Karen Barroga, PhilEASNet Pres/PhilRice as read by Dr. Eric Palacpac, VPres/PCC)

In their Welcome Messages



- The theme highlights the importance of adopting 4IR with new technologies taking great impact not only in **production processes but also labor** in the AFFNR, Mayor John Gessnel Yap
- Gov. Arthur C. Yap: With 4IR, **should we care?** Yes, we should because at the end of the day, we must serve our stakeholders. We must prepare the farmers for the disruption of 4IR. We must use the benefits of 4IR to address the damages to the farmers. **You are our country's best, the brightest . . . You are needed where you are.**

Keynote 1: “Soil-Water-Crop-Man Interconnectivity to Achieve Meaningful Ag-Industrial Revolution 4.0”

DR. GLENN B. GREGORIO

Director, SEARCA



- Avail of 4IR technologies **today and tomorrow** – know it by heart otherwise, we go back to 1.0 or 2.0.
- Change the **mindset of farmers** – for agri 4.0 to make a paramount shift from being production centric to **market centric** (agribusiness, product diversification, and value adding)
- Science based innovation should be – more research, connectivity **between research and farmers** through extension, for **adaptability and sustainability.**

Keynote 2: “Generating, Acquiring, and Imparting Knowledge in the Era of the Fourth Industrial Revolution”

DR. ANICETO C. ORBETA, JR.

Senior Research Fellow, PIDS



- 4IR/FIRe/Ag 4.0 - **man and machines** interacting with each other; about the IoT, robotics, big data, cloud computing and rapid changes affecting us.
- **Opportunities and risks** in the labor market, in knowledge management
- **Challenge:** Never pit ourselves against the robot - machines will be doing better; do not fight the robot, but use it; **Continue to learn, unlearn and relearn** several times.

Highlights of the Discussion and Open Forum

Ms. Antonieta J. Arceo, ATI:

- 4IR is here, some still part of 2.0 and others starting with **automation (3.0)**
- **Be smarter extension agents** - a greater passion to **decrease the digital divide**
 - **Human capital development** - link of technology and farmers.
 - **Greater collaboration and partnership** – tapping the private sector's CSR e.g the Digital Farmers' Program (with Smart Communications)



Highlights of the Discussion and Open Forum

Dr. Larry Pamugas, PA of Bohol

- Every national program should consider local conditions.
- Focus on statistics



- **3 APPS:** farm management, rice variety catalogue system and weeds photo recognition
- **Developed IoT devices:** water quality monitoring for fish production, air quality monitoring for pigpen, automated drip irrigation, rice paddy monitoring, fish feeder, seed warehouse and micro-climate monitoring
- **Rice Intelligence Information System** for executive planning
- **Robotics and drones**

Highlights of Conversations on 4IR Applications

ON RICE: MR. NEHEMIAH L.
CABALLONG, ICT Specialist,
Information Systems Division, PhilRice



- **ON LIVESTOCK: MR. ANER YACOBI,
SEA Regional Manager, Allflex**

- How farmers can generate more income through proper management of their farms using **smart data solutions**
- **Livestock monitoring** using tags to monitor behavior, reproduction, heat and reproduction

ON VEGETABLES: MR. DEXTER L. DIFUNTORUM

Downstream Marketing Manager,
East-West Seed ROH

- Where we are headed - from the usual **time and tested** long processes to digitizing collection of data using **smart tool applications**, no more extraction of reports but using the **powers of the dashboard**
- Reducing **turn around time (TAT)**

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- Lawin Forest and Biodiversity Protection System
 - *Patrol planning with the cellphone to monitor threats, places and distance*
 - *Data management - dashboard*

ON FORESTRY: FOR. CHRIS JOHN PAULO N. FELIPE, Technical Assistant, Lawin Unit-Forest Management Bureau

Subtheme 1 – Knowledge Management

- Online portal with decision and prediction support system
- Technology transfer from international research institutions to NARES
- Knowledge utilization of bamboo technologies
- Organic agriculture advocacy
- Repercussions of SUGIBALAK to the aged people
- Competencies, organizational commitment and job performance of AEWs
- Training needs of selected Sangguniang Kabataan (SK) Officials
- Al sa Barangay as an extension strategy

Subtheme 2: Novel Capacity- Building Initiatives

- CFNR Forestry extension initiatives
- Pedagogical content knowledge in action
- Role of participatory arts and songs in promoting environmental conservation and protection
- Adoption of uVote as voter education initiative
- Farming adaptation to climate change
- Extension program for pedicab drivers and families
- Cleaner and Greener Dinalupihan
- Agricultural camps to promote agriculture
- Private sector provision of EAS
- Headstart program 2018

Subtheme 3: Trailblazing Extension Interventions

- Enhancing AE in conflict-vulnerable areas
- Capacity enhancement through seed multiplication and dissemination
- Assessment of ATI Learning Site towards Agri-Tourism development
- Building rice-based enterprise
- Establishment of community S&T based farm on rice-fish farming
- Developing sustainable organic livelihoods
- Oyster mushroom and food nutrition system
- Transforming rice based farming community into agripneurship
- Aqua based food products development for livelihood and resource sustainability

Subtheme 4: Developing Sustainable Community Livelihoods

- Bahay pagbabago
- Assessment of the impact of numeracy class on basic forest mensuration
- Exceptional extension practices (TUP)
- Service learning in the academe through community engagement
- Micro enterprise community development and livelihood training for 4Ps
- Multi-stakeholder approach on skills training program

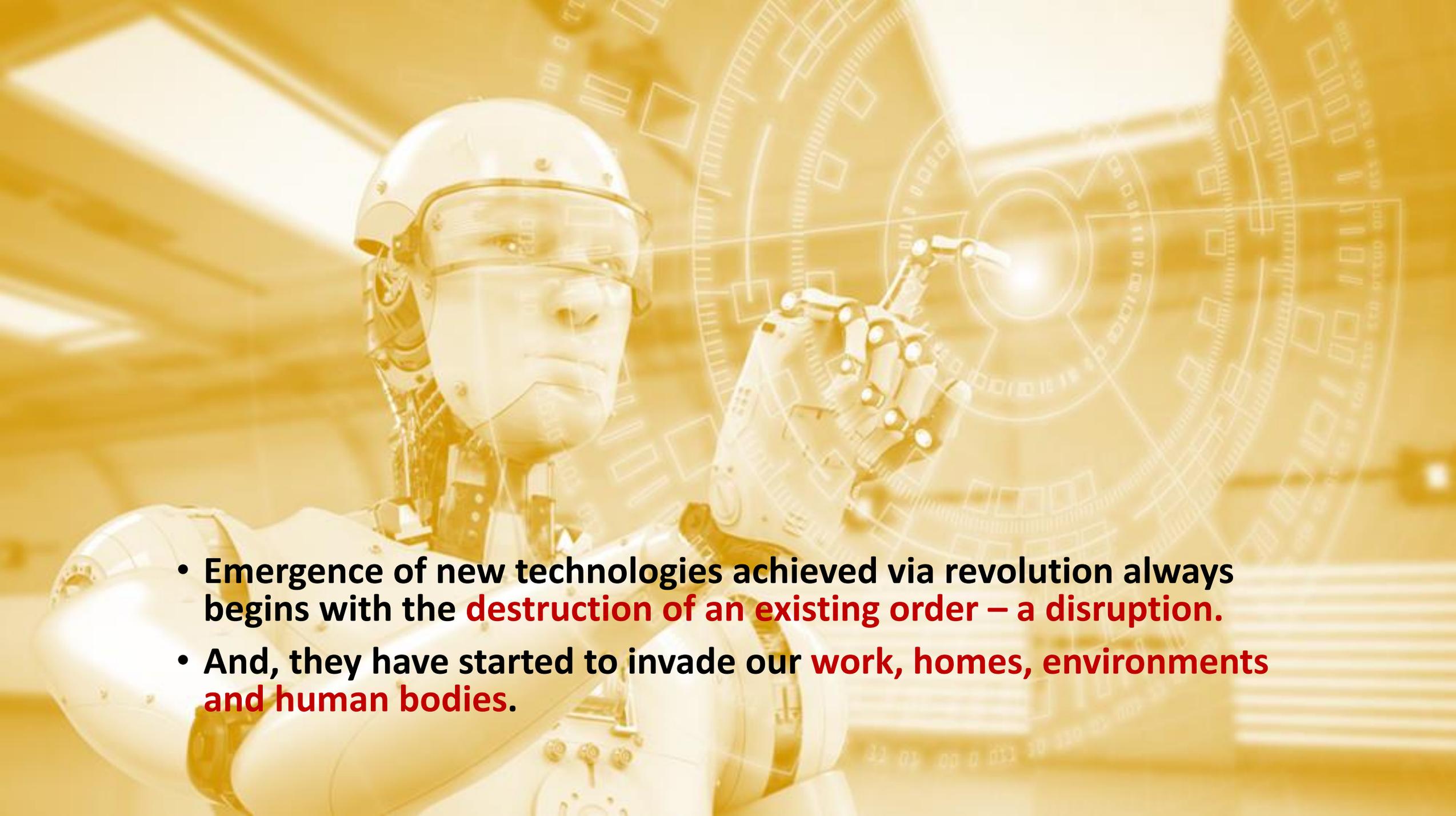
Subtheme 5: Extension & Public Service of HEI

- Determining the cause and effect of low income
- Promoting sustainable community-based coffee processing enterprise models
- Collaborative barangay based development and economic mainstreaming
- Briquettes on fire: forest wastes into fuel
- The eco-bag journey
- Influence of PPKM towards the community beneficiaries

The 4IR

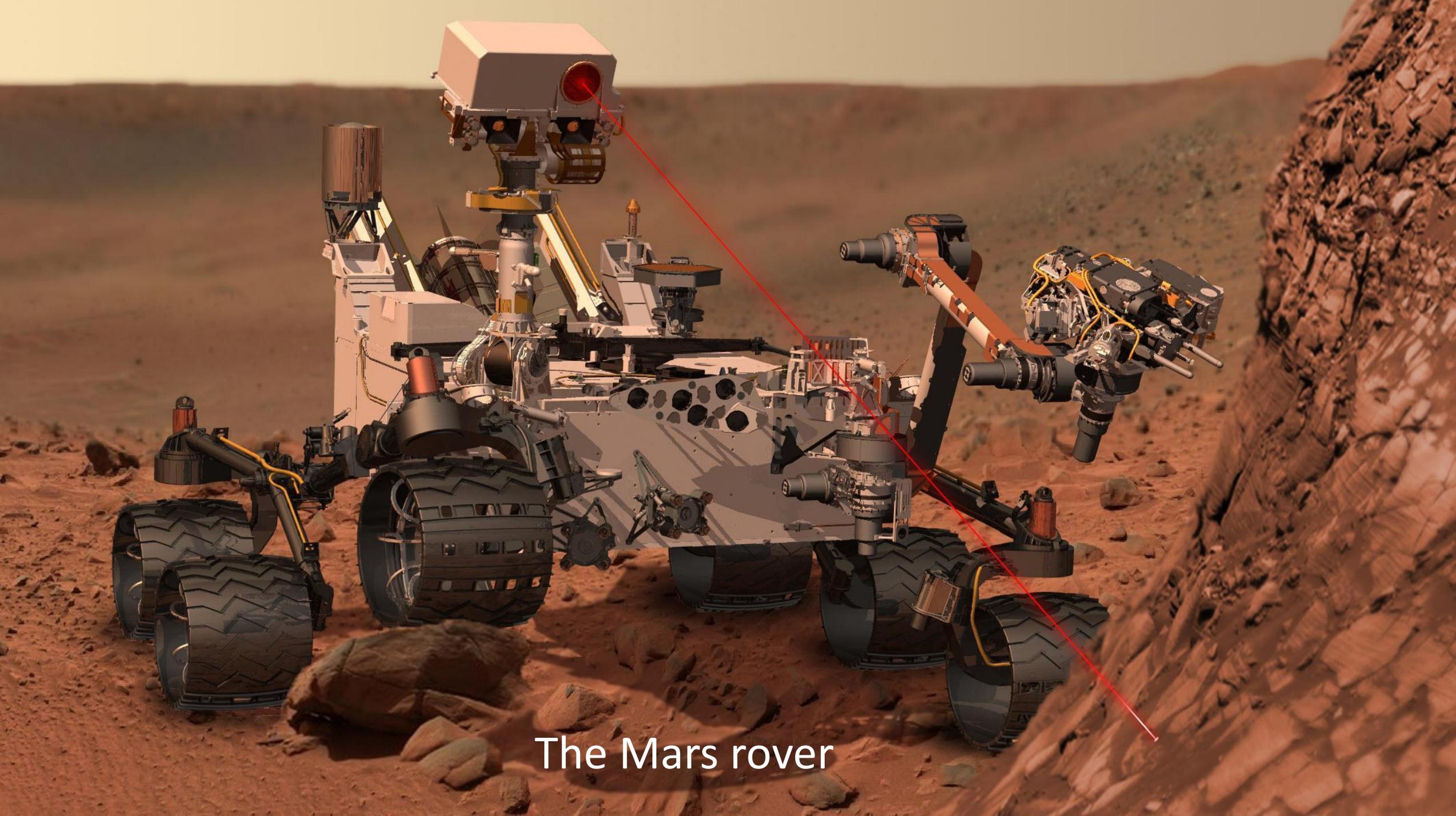
4th Industrial Revolution

- It used to be just **science-fiction**. Now, they are in our midst – artificial intelligence, nanotechnology, quantum computing, blockchain, biotechnology and robotics.
- An industrial revolution characterized by advancements in technology that humanity **applies to improve the process of production**.
- But in reality, it means so much more.

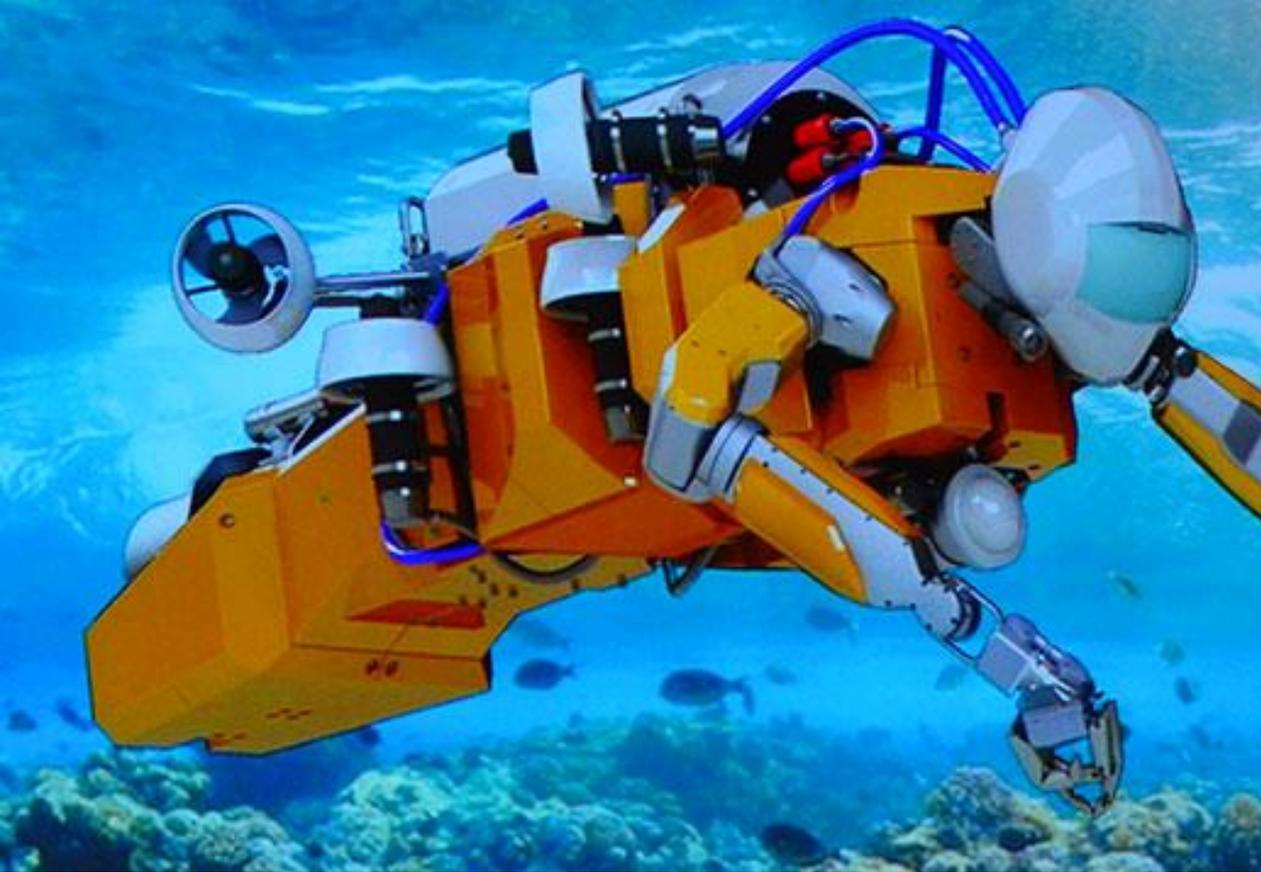
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- Emergence of new technologies achieved via revolution always begins with the **destruction of an existing order – a disruption.**
 - And, they have started to invade our **work, homes, environments and human bodies.**

- Now, we are witnesses to companies quickly **commercializing** these products for our use in the near future.
- *Continue making their way into the doctor's offices and hospitals – **outperforming them in diagnosing medical images, or doing surgery.***





The Mars rover



Humanoid diving robot exploring the undersea . . .

Robot inspecting a sunken frigate . . .





- Google has evolved to quickly spit out answers to all kinds of problems and giving directions, or even finishing our search expression as we type.



- Autonomous vehicles or self driving vehicles are plying the routes with lesser incidence of accidents

A large industrial factory floor filled with numerous orange robotic arms working on a production line. The robots are arranged in a long row, and their arms are extended over a white car body. The background shows a complex industrial structure with various pipes, cables, and machinery.

*Industrial robots,
estimated to be about 3
million by 2020 by World
Economic Forum, are
replacing labor in
industries*



... and in agriculture



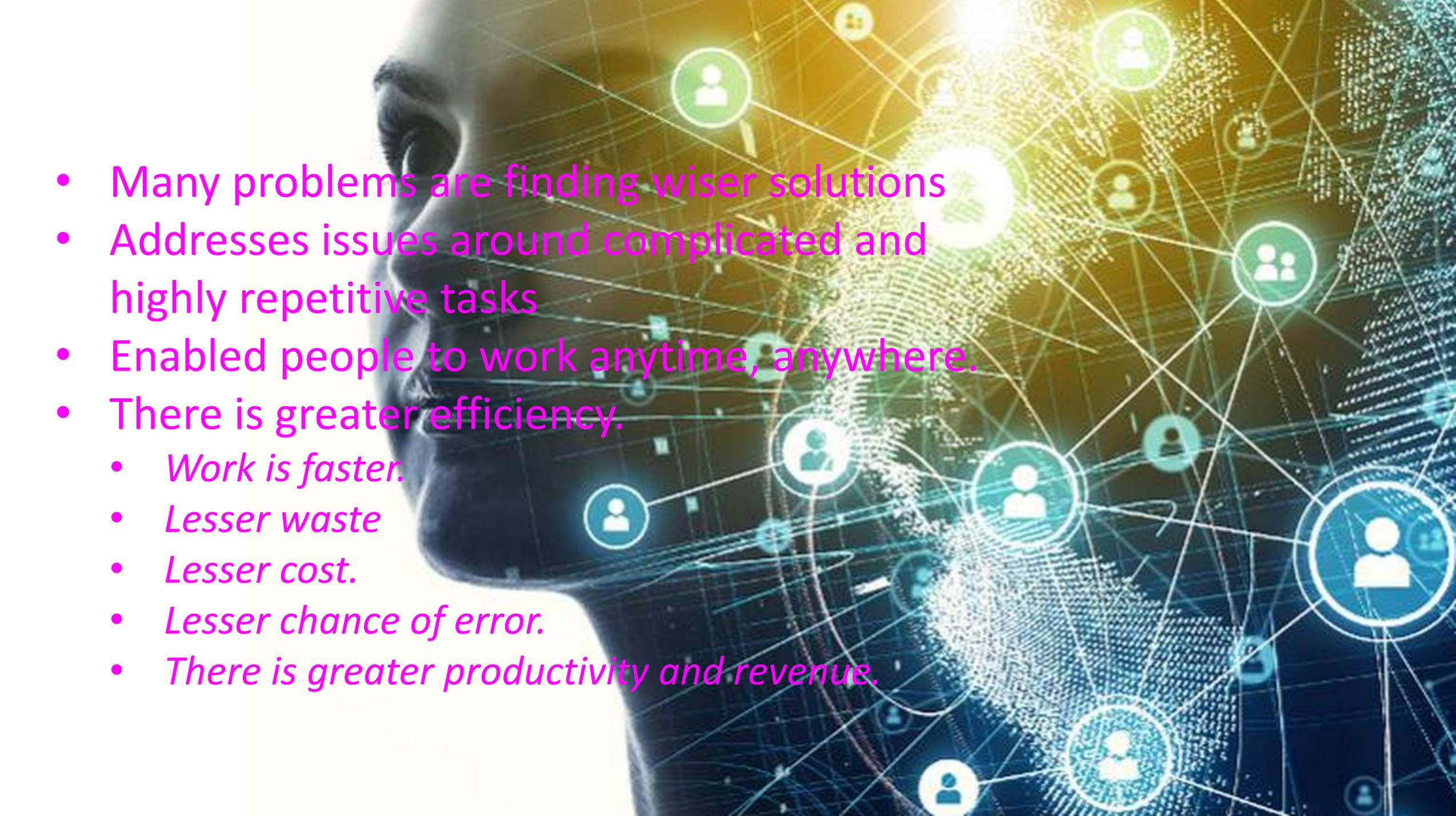


Robo-restos are on the rise . . .





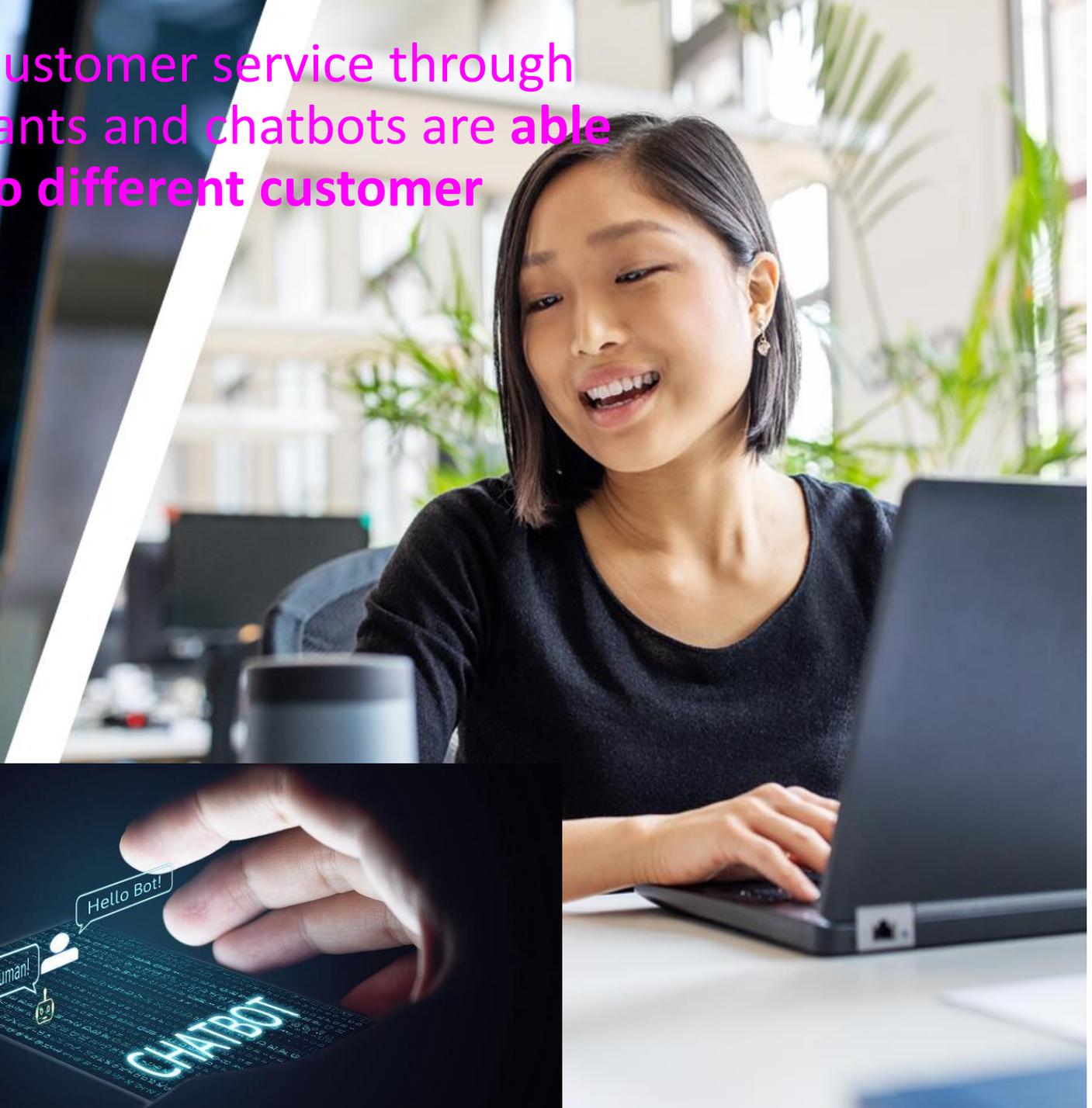
So, what?

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- Many problems are finding wiser solutions
 - Addresses issues around complicated and highly repetitive tasks
 - Enabled people to work anytime, anywhere.
 - There is greater efficiency.
 - *Work is faster.*
 - *Lesser waste*
 - *Lesser cost.*
 - *Lesser chance of error.*
 - *There is greater productivity and revenue.*



... autonomous “robocop”-style robots, equipped with microphones, speakers, cameras, laser scanners and sensors, **provide greater protection and security**

- Automated customer service through virtual assistants and chatbots are able to respond to different customer demands



- **More food.**
- **Safer food.**
- **More resistant to pests and diseases.**

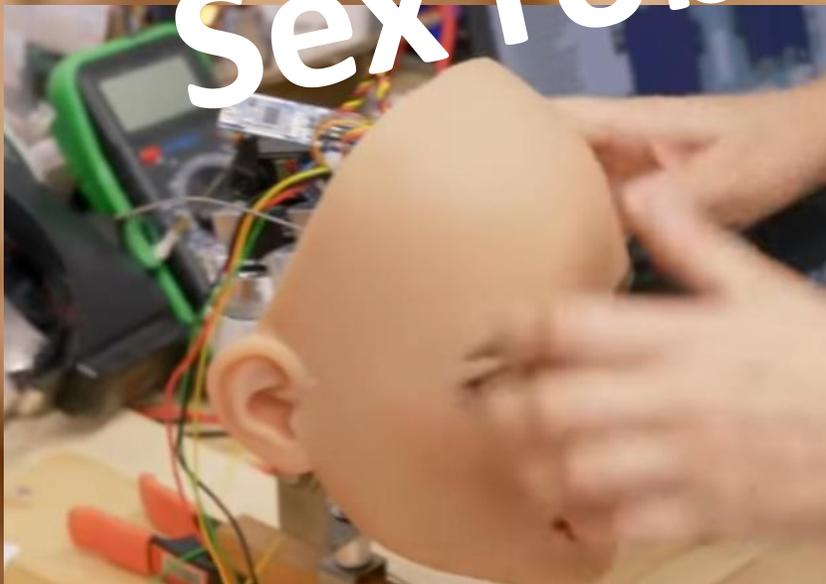
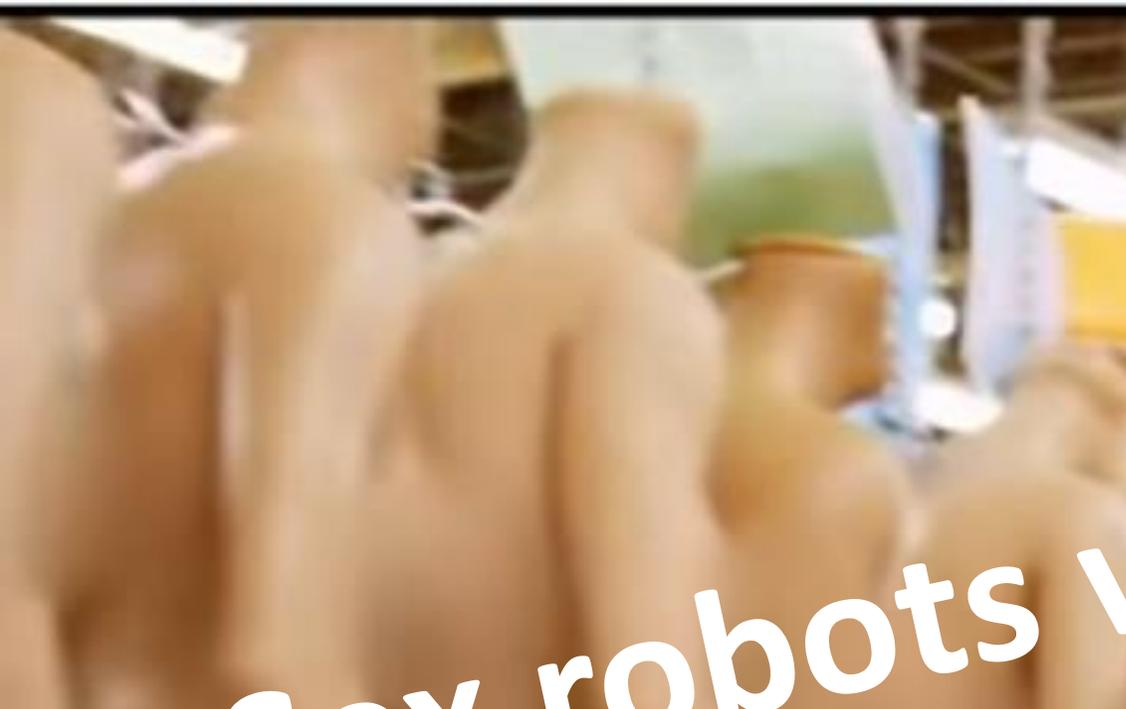




The other side of the story: Cybercrime

- Hacking
- Phishing
- Cyberstalking
- Online identity theft
- Online child abuse
- Ransomware attack
- Internet fraud

Sex robots with AI for sale





There will be unstoppable shifts in workforce demands. The first three industrial revolutions resulted in job loss, 4IR will also cause jobs to become **extinct or on its way to extinction**. As a matter of fact, you would be hard pressed to think of a job that cannot be taken over by technology.





Then,
what?

Potential Opportunities

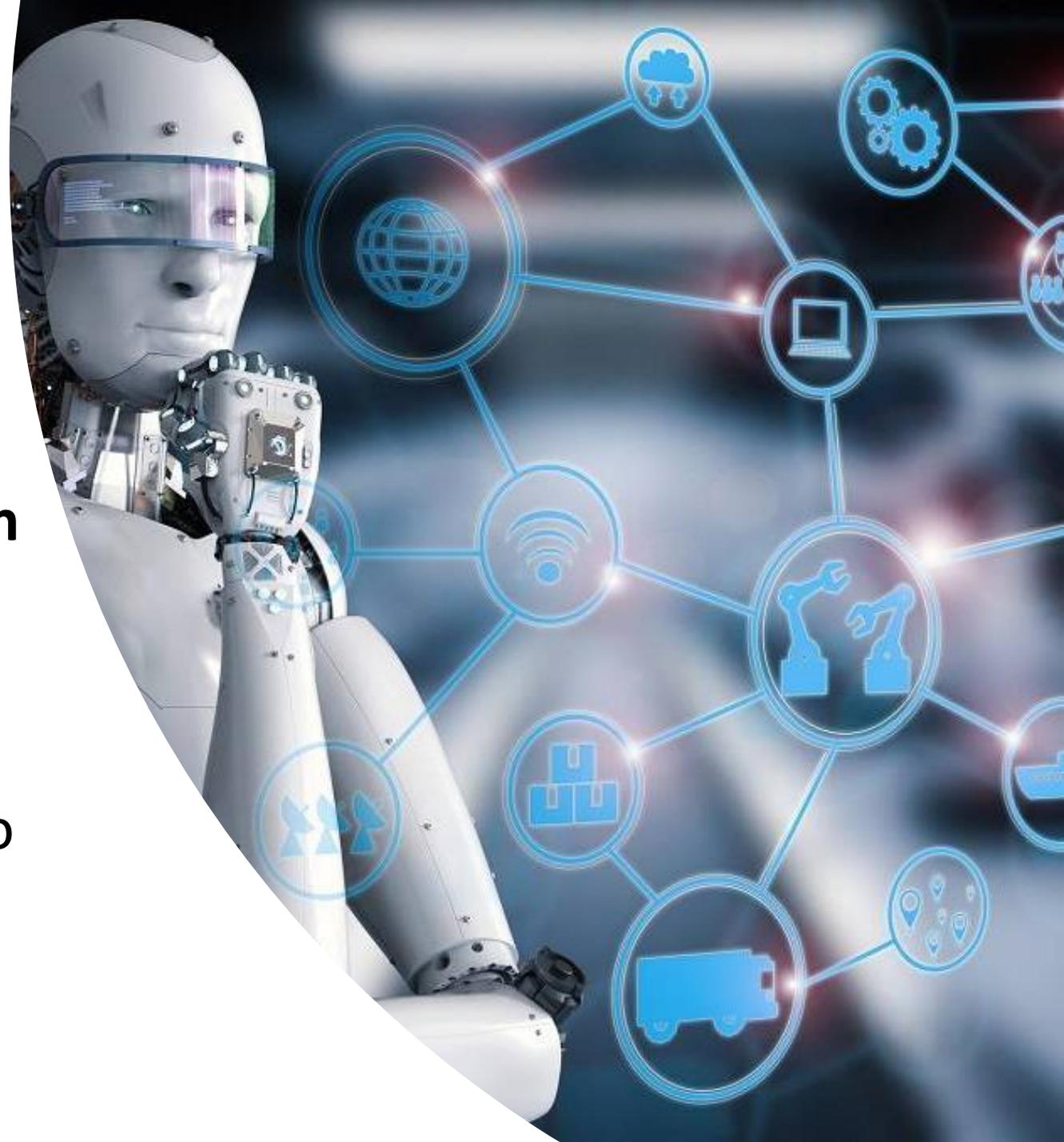
The background features a dark, textured surface with a grid of glowing hexagonal icons. Each hexagon contains a different symbol, such as a lightbulb, a gear, a pie chart, a person, a network diagram, and a hand holding a pen. The icons are rendered in bright colors like cyan, magenta, and yellow, creating a futuristic and technological aesthetic.

- AI skills has grown 4.5 times since 2013. With 4IR, that percentage will rise as the world's most innovative companies invest more in AI applications.

- 
- A white humanoid robot is shown from the waist down, wearing white sneakers. The robot is standing on a light-colored floor. The background is a plain, light-colored wall. The robot's legs are visible, and it appears to be in a standing position. The overall scene is brightly lit, and the robot's design is sleek and modern.
- Tech-savvy companies continue to build AI applications to help organizations **boost revenue, augment business productivity and innovate business operations.**
 - Need for a **new mindset , new actions.**

Our Challenges

- Are we teaching our farmers, fisherfolk and upland dwellers skills for **jobs that already begin to penetrate our sector today**?
- Are we teaching our young for the **jobs of the future**?
- Are our extension researches and projects relevant enough to meet the needs of our stakeholders



- What **roadmap** do we ought to pursue collectively as we embark on a period of technological advancement and workforce transformation in the AFFNR sector?





THINK ABOUT IT!

- Will it be business as usual?
- It is all about **CREATIVITY AND INNOVATION** – We cannot continue to work like our ancestors worked (Aner Yacobi)
- We must address the challenges of our farmers (Gov. Arthur Yap)



• SHALL WE BECOME LEADERS OR MERE FOLLOWERS?