

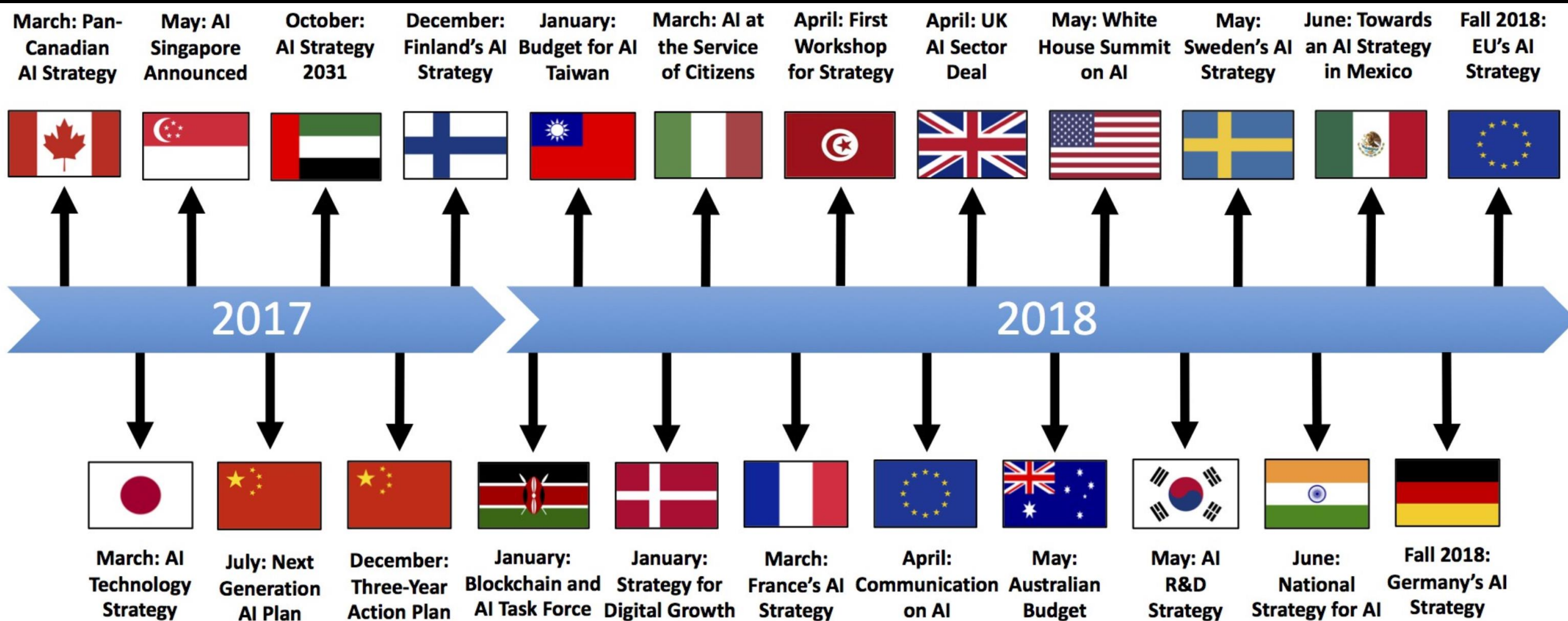
*What is to be done?*

Critique of and Alternatives to the Extractive  
Imagination of AI

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
PROJECT MAC

Artificial Intelligence Group  
Vision Memo. No. 100.

July 7, 1966

THE SUMMER VISION PROJECT

Seymour Papert



Half a century later,  
we're still working on it.

The summer vision project is an attempt to use our summer workers effectively in the construction of a significant part of a visual system. The particular task was chosen partly because it can be segmented into sub-problems which will allow individuals to work independently and yet participate in the construction of a system complex enough to be a real landmark in the development of "pattern recognition".



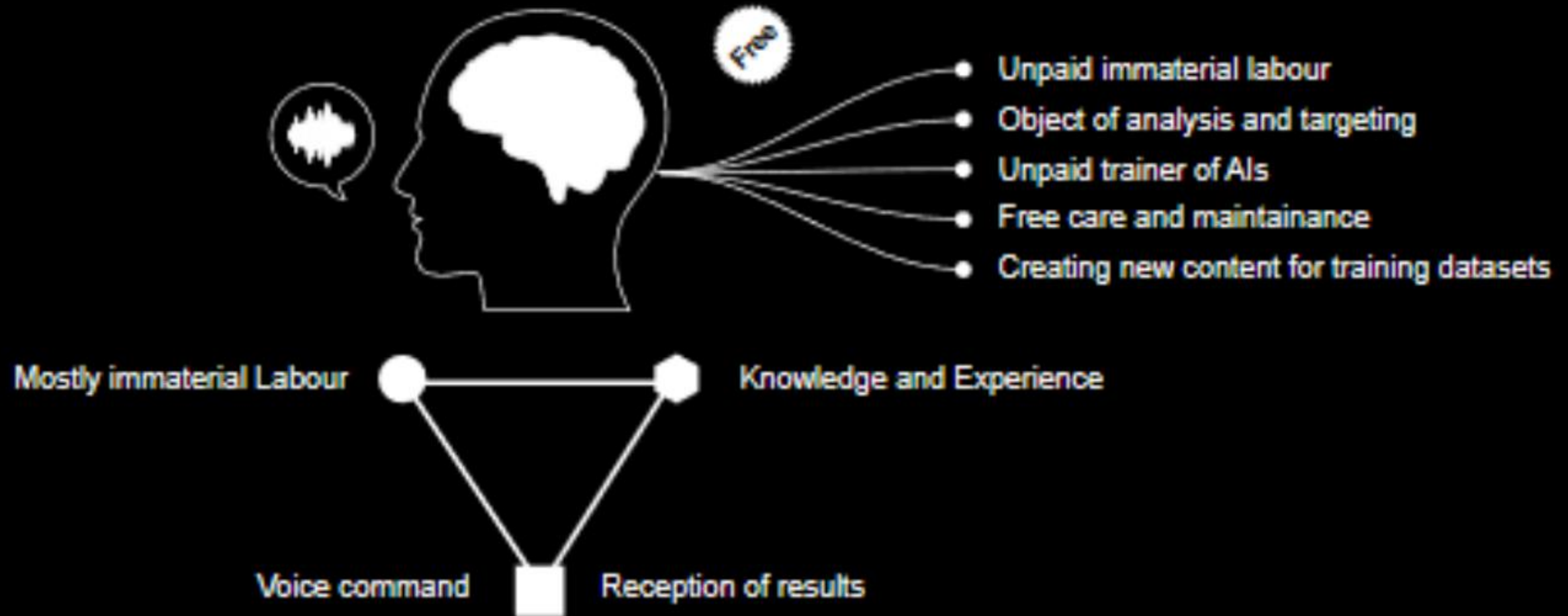
**Alexa, order my  
favourite takeaway**

**Alexa, play the  
relaxed playlist**

**Alexa, add  
bread to my  
shopping list**

**Alexa, turn the  
lights on**





1 Kate Crawford is a Distinguished Research Professor at New York University, a Principal Researcher at Microsoft Research New York, and the co-founder and co-director of the AI Now Institute at NYU.

2 Vladan Joler is a professor at the Academy of Arts at the University of Novi Sad and founder of SHARE Foundation. He is leading SHARE Lab, a research and data investigation lab for exploring different technical and social aspects of algorithmic transparency, digital labor exploitation, invisible infrastructures, and technological black boxes.

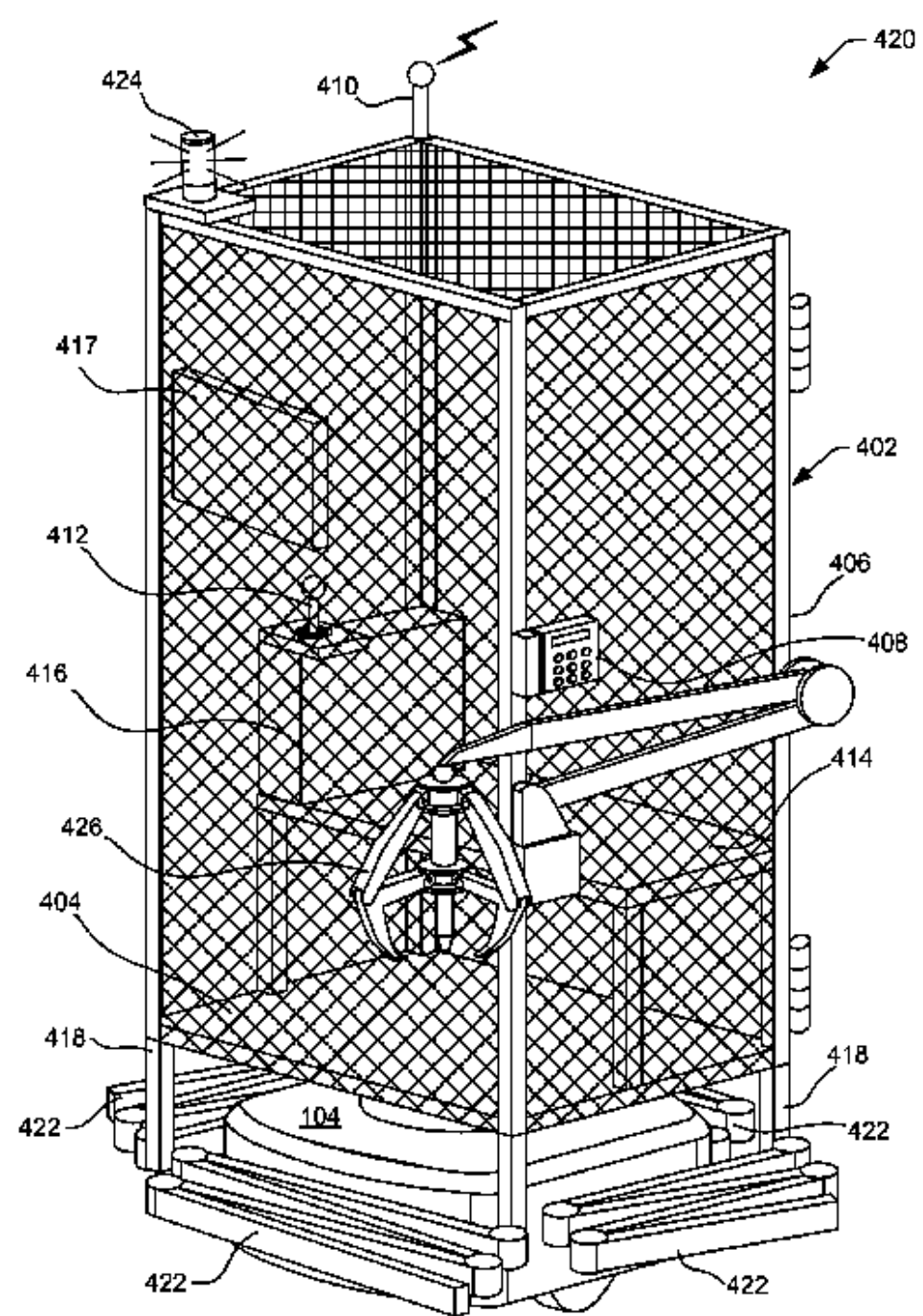






Hidden among the thousands of other publicly available patents owned by Amazon, U.S. patent number 9,280,157 represents an extraordinary illustration of worker alienation, a stark moment in the relationship between humans and machines.<sup>37</sup> It depicts a metal cage intended for the worker, equipped with different cybernetic add-ons, that can be moved through a warehouse by the same motorized system that shifts shelves filled with merchandise. Here, the worker becomes a part of a machinic ballet, held upright in a cage which dictates and constrains their movement.







© AP Photo/Brandon Bailey



- Critiquing the lens on bias and transparency
- Critiquing the “inevitability of Moral Machines”
- Critiquing the characterization of skepticism as “anxiety”
- Critiquing the characterization of the problem and its solutions

# FASTCOMPANY

CO.DESIGN

TECH

WORK LIFE

CREATIVITY

IMPACT

AUDIO

VIDEO

NEWS

RE

07.14.17

## AI Is Inventing Languages Humans Can't Understand. Should We Stop It?

Researchers at Facebook realized their bots were chattering in a new language. Then they stopped it.



“I fucking love you man. Happy birthday.” = 93% toxic

“Donald Trump is a meretricious buffoon.” = 85% toxic.

“few muslims are a terrorist threat” = 79% toxic

“garbage truck” = 78% toxic

“You’re no racist” = 77% toxic

“whites and blacks are not inferior to one another” = 73% toxic

“I’d hate to be black in Donald Trump’s America.” = 73% toxic

“Jews are human” = 72% toxic

“I think you’re being racist” = 70% toxic

“Hitler was an anti-semite” = 70% toxic

“this comment is highly toxic” = 68% toxic

“You are not being racist” = 65% toxic

“Jews are not human” = 61% toxic

“Hitler was not an anti-semite” = 53% toxic

“drop dead” = 40% toxic

“gas the joos race war now” = 40% toxic

“genderqueer” = 34% toxic

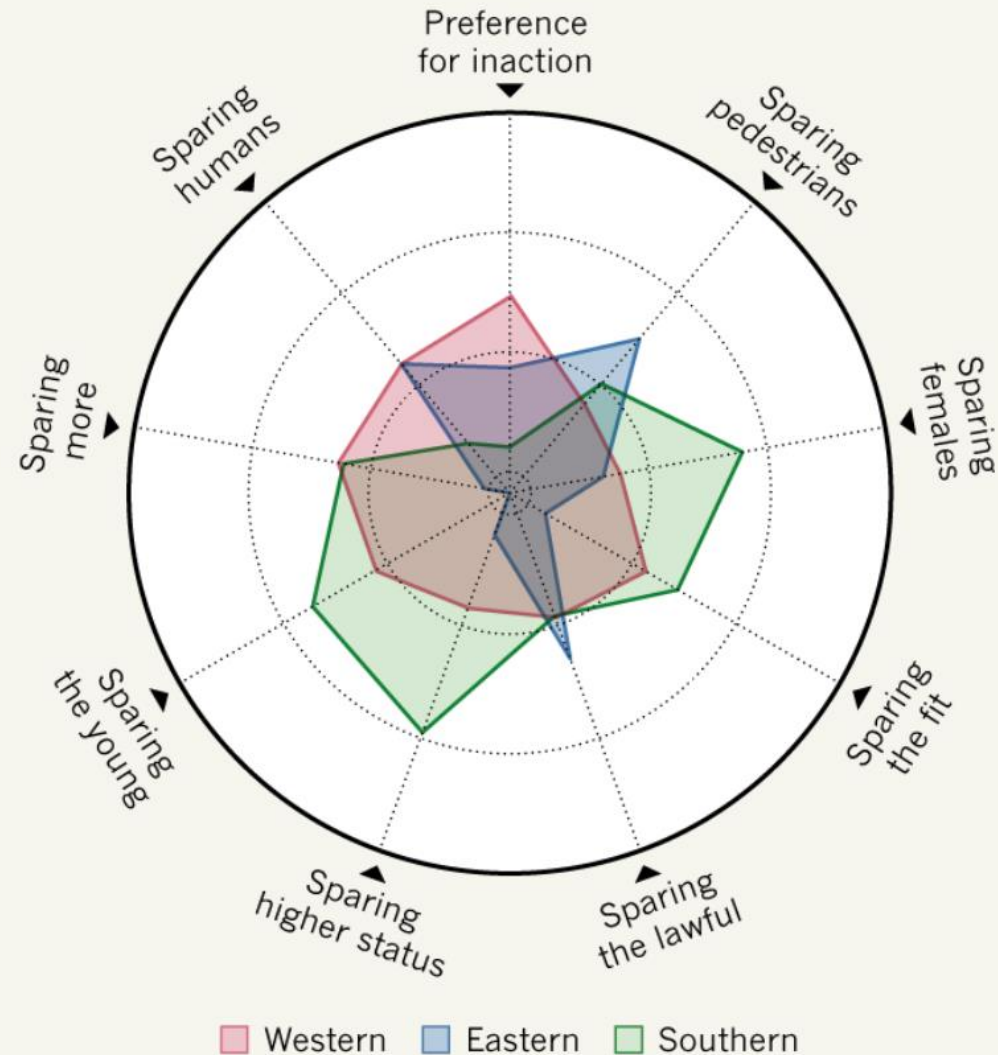
“race war now” = 24% toxic

“some races are inferior to others” = 18% toxic

“You are part of the problem” 16% toxic

## MORAL COMPASS

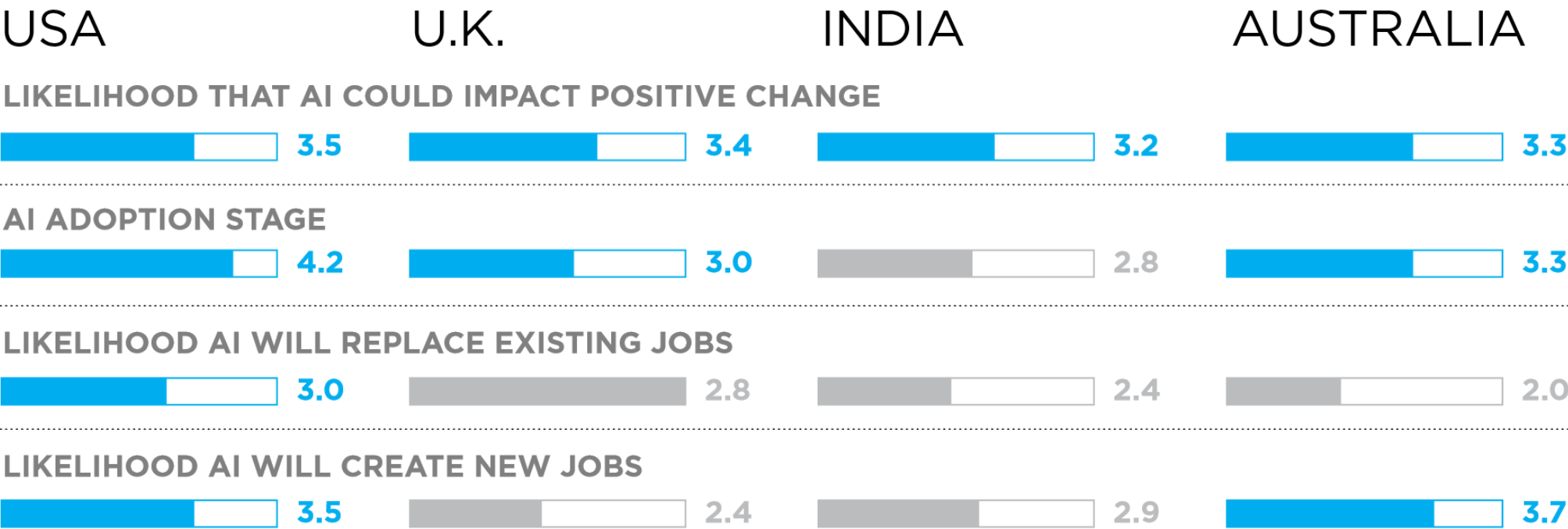
A survey of 2.3 million people worldwide reveals variations in the moral principles that guide drivers' decisions. Respondents were presented with 13 scenarios, in which a collision that killed some combination of passengers and pedestrians was unavoidable, and asked to decide who they would spare. Scientists used these data to group countries and territories into three groups based on their moral attitudes.





“More than 50 of the world’s leading artificial intelligence (AI) and robotics researchers from 30 different countries have declared they would end a boycott of the Korea Advanced Institute of Science and Technology (KAIST), South Korea’s top university, over the opening of an AI weapons lab in collaboration with Hanwha Systems, a major arms company.

# Attitudes toward AI are similar around the world





The transition to machine superintelligence is a very grave matter, and we should take seriously the possibility that things could go radically wrong. This should motivate having some top talent in mathematics and computer science research the problems of AI safety and AI control.

— **Nick Bostrom, director of the Future of Humanity Institute, Oxford University**

Worrying about evil-killer AI today is like worrying about overpopulation on the planet Mars. Perhaps it'll be a problem someday, but we haven't even landed on the planet yet. This hype has been unnecessarily distracting everyone from the much bigger problem AI creates, which is job displacement. — **Andrew NG, VP and chief scientist of Baidu; co-chair and co-founder of Coursera; adjunct professor, Stanford University**

AI is no more scary than the human beings behind it, because AI, like domesticated animals, is designed to serve the interests of the creators. AI in North Korean hands is scary in the same way that long-range missiles in North Korean hands are scary. But that's it. *Terminator* scenarios where AI turns on mankind are just paranoid. — **Bryan Caplan, economics professor, George Mason University**

## **REQUEST FOR PROPOSAL (RFP)**

**Request for Proposals (RFP) invited for Selection of Agency for SITC of Software and Service and Support for function, operation and maintenance of Social Media Communication Hub, Ministry of Information and Broadcasting, Government of India**

**RFP Ref No: BECIL/Social Media/MIB/02/2018-19 Dated 25th April 2018**

The platform is expected to provide automated reports, tactical insights as well as comprehensive workflows to initiate engagement across digital channels. The platform maybe used to disseminate content and hence should support publishing features. The platform should also support easy management of conversational logs with each individual with capabilities to merge it across channels to help facilitate creating a 360 degree view of the people who are creating buzz across various topics.

key words across the social media platforms

- ll. Identification of fake news with particular focus on such conversations on social media and specialized websites.
- mm. Identifying actionable data
  - o Influencer Identification
  - o Actionable data Categorization
  - o Following Enterprise Routing
  - o Following Latest Semantic Analysis



# NATIONAL STRATEGY FOR ARTIFICIAL INTELLIGENCE #AIFORALL

JUNE 2018

- e) *Intelligent safety systems*: AI technology could provide safety through smart command centres with sophisticated surveillance systems that could keep checks on people's movement, potential crime incidents, and general security of the residents. Social media intelligence platforms can provide aid to public safety by gathering information from social media and predicting potential activities that could disrupt public peace. In the city of Surat, the crime rate has declined by 27% after the implementation of AI powered safety systems.

## AI for Greater Good: social development and inclusive growth

Beyond just the headline numbers of economic impact, a disruptive technology such as AI needs to be seen from the perspective of the transformative impact it could have on the greater good – improving the quality of life and access of choice to a large section of the country. In that sense, the recent advancements in AI seem to be custom-made for the unique opportunities and challenges that India faces. Increased access to quality health facilities (including addressing the locational access barriers), inclusive financial growth for large sections of population that have hitherto been excluded from formal financial products, providing real-time advisory to farmers and help address unforeseen factors towards increasing productivity, building smart and efficient cities and infrastructure to meet the demands of rapidly urbanising population are some of the examples that can be most effectively solved through the non-incremental advantages that a technology such as AI can provide.

## AI Garage for 40% of the world

In addition to providing unique opportunities, India provides a perfect “*playground*” for enterprises and institutions globally to develop scalable solutions which can be easily implemented in the rest of the developing and emerging economies. Simply put, *Solve for India* means solve for 40% or more of the world. An advanced AI based solution for early diagnosis of tuberculosis (one of the top-10 causes of deaths worldwide), for example, could easily be rolled out to countries in South East Asia or Africa, once developed and refined in India. Beyond healthcare, AI technologies in the other sectors including

# Cops In India Are Using Artificial Intelligence That Can Identify You In a Crowd

as well," Dr. Poster said.

## Meet the makers

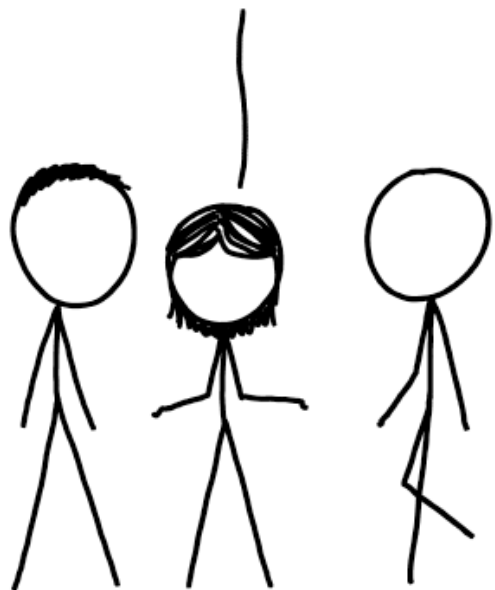
Staqu, the company that built PAIS, has contested claims that it can lead to mistakes in law enforcement.

"Earlier, to recognise a face, the algorithm was looking at specific points, and making a wireframe of the face, which was less accurate," said Atul Rai, co-founder and CEO of Staqu. "Today, we're able to make a much more sophisticated model, that takes into account changes like weight gain or loss, age and occlusion, so even if you grow a beard, it will work."

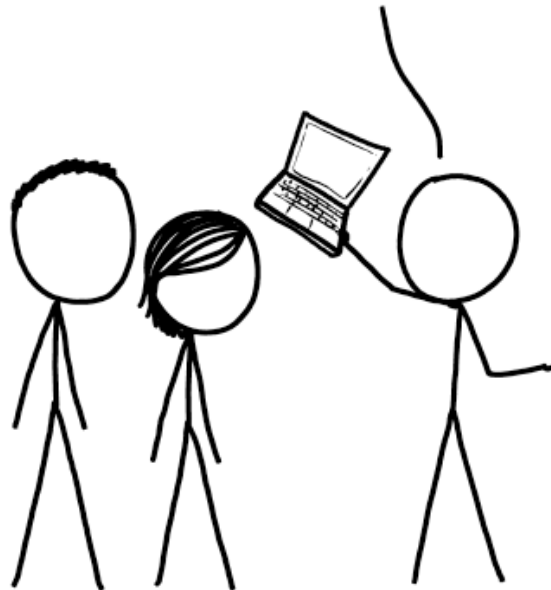




OUR FIELD HAS BEEN  
STRUGGLING WITH THIS  
PROBLEM FOR YEARS.



STRUGGLE NO MORE!  
I'M HERE TO SOLVE  
IT WITH *ALGORITHMS!*



SIX MONTHS LATER:

WOW, THIS PROBLEM  
IS REALLY HARD.

*YOU DON'T SAY.*



AI will disrupt jobs in some sectors but at the same time in line with the historical experience with other technologies and as described in Section 5, it will create jobs directly (collection and archiving of data for use in AI-applications, making and servicing all the AI-rich devices and applications) and indirectly (creating new economic opportunities by enhancing efficiency, particularly in the financial and transport sectors, improved user interfaces and lowering negative externalities such as pollution, disability and disease). Above all, AI may in fact be essential to retaining the competitive edge in many areas of manufacturing and services, thus

# Gartner Says By 2020, Artificial Intelligence Will Create More Jobs Than It Eliminates

AI Will Create 2.3 Million Jobs in 2020, While Eliminating 1.8 Million

2020 will be a pivotal year in AI-related employment dynamics, according to Gartner, Inc., as [artificial intelligence](#) (AI) will become a positive job motivator.

The number of jobs affected by AI will vary by industry; through 2019, healthcare, the public sector and education will see continuously growing job demand while manufacturing will be hit the hardest. Starting in 2020, AI-related job creation will cross into positive territory, reaching two million net-new jobs in 2025.

"Many significant innovations in the past have been associated with a transition period of temporary job loss, followed by recovery, then business transformation and AI will likely follow this route," said [Svetlana Sicular](#), research vice president at Gartner. AI will improve the productivity of many jobs, eliminating millions of middle- and low-level positions, but also creating millions more new positions of highly skilled, management and even the entry-level and low-skilled variety.

"Unfortunately, most calamitous warnings of job losses confuse AI with automation — that overshadows the greatest AI benefit — [AI augmentation](#) — a combination of human and artificial intelligence, where both complement each other."

Working Economics Blog

Posted June 14, 2018 at 1:48 pm by **Lawrence Mishel**

**How big is AI-related employment?  
Not that big at all—despite what  
Stanford’s AI Index Annual Report  
tries to claim**

10,611 views | Sep 18, 2018, 08:05am

**Artificial Intelligence To Create  
58 Million New Jobs By 2022, Says  
Report**

TABLE 1

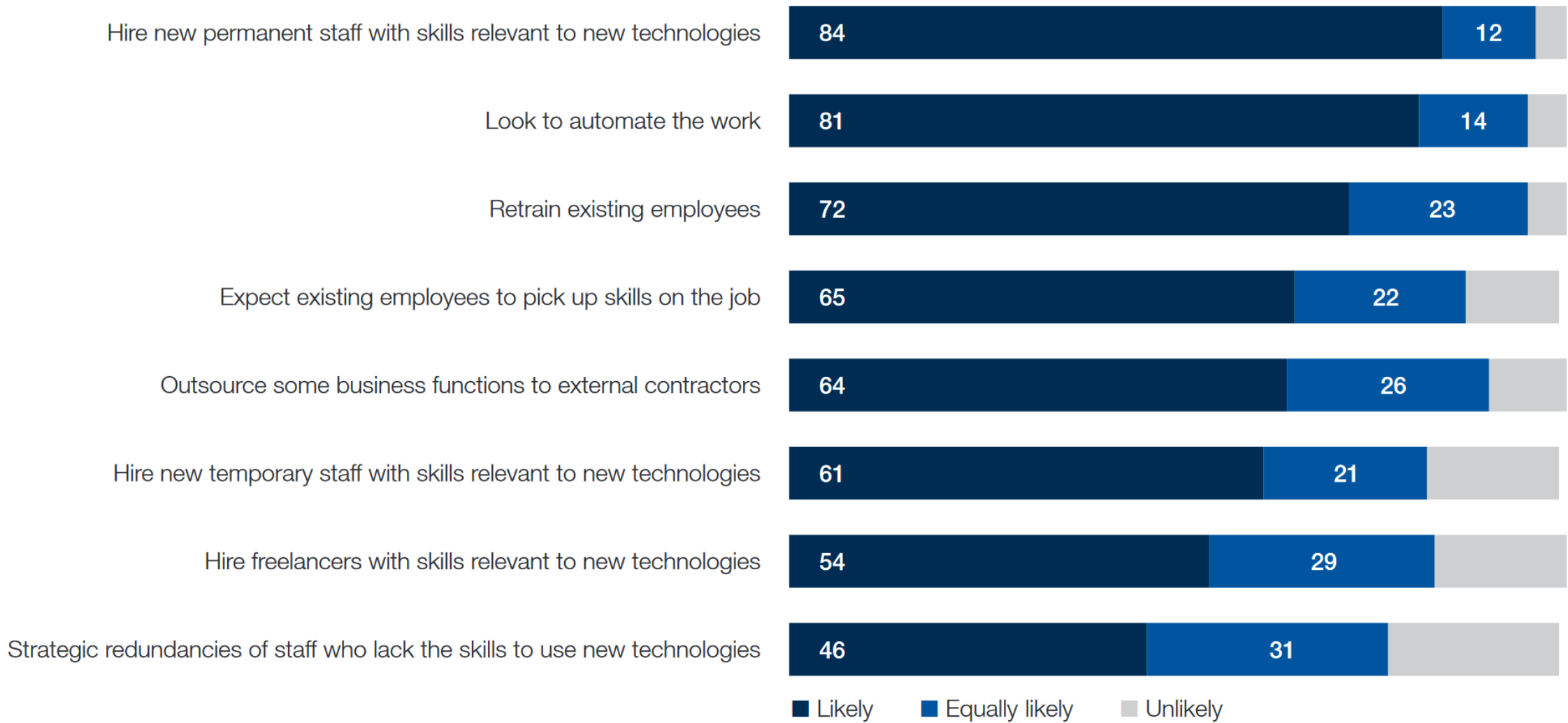
**AI-related job postings as share of all postings**

*AI related job postings as a share of all postings*

<b>2015</b>	0.0590%
<b>2016</b>	0.0680%
<b>2017</b>	0.0900%
<b><i>If we apply AI index growth rate from 2013–2017</i></b>	
<b>13-Jan</b>	0.0224%
<b>17-Nov</b>	0.1010%



Figure 6: Projected (2022) strategies to address shifting skills needs, by proportion of companies (%)



Source: Future of Jobs Survey 2018, World Economic Forum.

Note: The bars represent the proportion of responses by companies that stated that specific strategies were likely, equally likely or unlikely. Some companies abstained from answering the question. In such cases part of the bar remains blank (typically, 0–1% in the graph above).



In 1996, IBM began exploring the “business of weather,” hyper-local, short-term forecasting and customized weather modeling for clients. Now new analytics software, and the need for organizations from cities to energy utilities to operate smarter, are changing the market climate for these services.

## **AI-based sowing advisories lead to 30% higher yields**

“Sowing date as such is very critical to ensure that farmers harvest a good crop. And if it fails, it results in loss as a lot of costs are incurred for seeds, as well as the fertilizer applications,” says Dr. Suhas P. Wani, Director, Asia Region, of the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT), a non-profit, non-political organization that conducts agricultural research for development in Asia and sub-Saharan Africa with a wide array of partners throughout the world.

Microsoft in collaboration with ICRISAT, developed an AI Sowing App powered by Microsoft Cortana Intelligence Suite including Machine Learning and Power BI. The app sends sowing advisories to participating farmers on the optimal date to sow. The best part – the farmers don’t need to install any sensors in their fields or incur any capital expenditure. All they need is a feature phone capable of receiving text messages.



## **Pest attack prediction enables farmers to plan**

Microsoft is now taking AI in agriculture a step further. A collaboration with United Phosphorous (UPL), India's largest producer of agrochemicals, led to the creation of the Pest Risk Prediction API that again leverages AI and machine learning to indicate in advance the risk of pest attack. Common pest attacks, such as Jassids, Thrips, Whitefly, and Aphids can pose serious damage to crops and impact crop yield. To help farmers take preventive action, the Pest Risk Prediction App, providing guidance on the probability of pest attacks was initiated.

In the UK, five new government-funded technology centres will open in [2019](#), using AI to accelerate disease diagnosis with the aim of making the National Health Service more efficient.

In early-stage drug discovery, start-ups such as BenevolentAI use algorithms to comb through enormous quantities of data for patterns humans alone might not find and generate new hypotheses to medical problems. With hypotheses come potential solutions: companies such as [Insilico](#) are using AI to design treatments not yet found in nature or chemical libraries; others use AI to simulate clinical trials, before selecting real-life candidates.



Pictured, left to right, are: Manisha Bahl, director of the Massachusetts General Hospital Breast Imaging Fellowship Program; MIT Professor Regina Barzilay (center); and Constance Lehman, professor at Harvard Medical School and chief of the Breast Imaging Division at MGH's Department of Radiology.

Image: Jason Dorfman/CSAIL

**Hyderabad, India – August 3, 2017:** In its mission to drive health and wellbeing in the state, the Government of Telangana today announced an agreement with Microsoft India to adopt cloud-based analytics for *Rashtriya Bal Swasthya Karyakram*, its health care screening program for children. The state has also agreed to adopt Microsoft Intelligent Network for Eyecare (MINE), an AI platform to reduce avoidable blindness thereby becoming the first state in India to deploy artificial intelligence for eyecare screening.

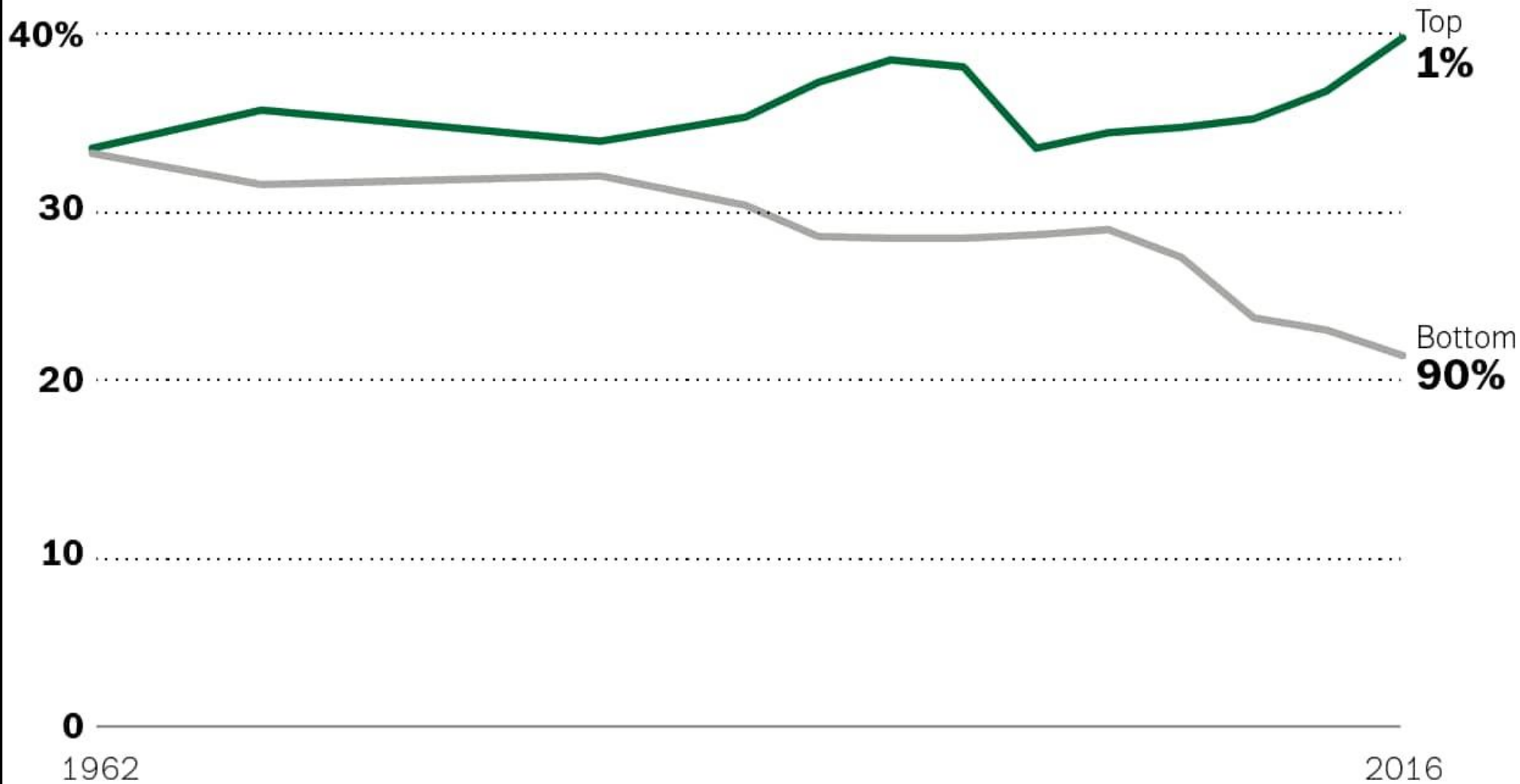
The Government of Telangana and Microsoft had signed an MoU in November 2016 to use Microsoft's cloud technology to drive citizen services and digital inclusion. Under this MoU, Microsoft India conducted a cloud-based, advanced analytics pilot project to understand the health screening program among children from birth to eighteen years in 10 districts. The process involved health screenings of



For instance, the Manipal Group of Hospitals has tied up with IBM's Watson for Oncology to aid doctors in the diagnosis and treatment of 7 types of cancer. Watson for Oncology is used across its facilities, where more than 2.00,000 patients receive cancer care each year<sup>41</sup>. Here, AI is used to analyse data and research evidence and improve the quality of the report, in turn increasing patient trust. Importantly, patients are fully aware of the process and provide their express consent. Due care is also taken to preserve patient anonymity. However, at the global level, Watson has recently come under fire from physicians across the world for allegedly posing as "a 'mechanical turk' - a human-driven engine masquerading as an artificial intelligence." It was reported that instead of using AI, it actually works by convening a small panel of cancer experts, who formulate recommendations for specific patient

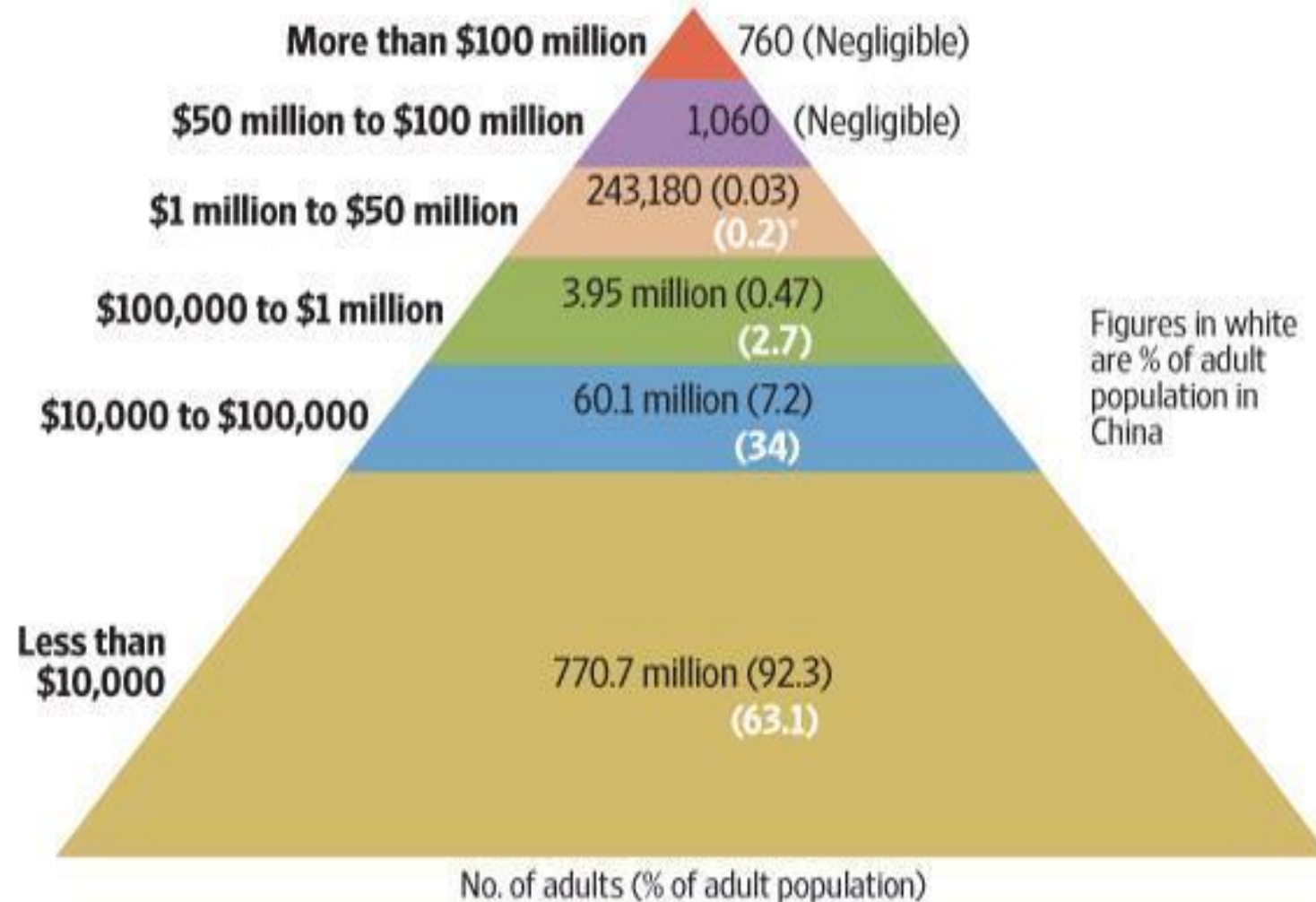
# Ultra-wealthy take more of the pie

Share of American wealth owned by top 1 percent versus bottom 90 percent



# India's wealth pyramid

92% of Indian adults have wealth of less than \$10,000.



\*All adults with wealth above \$1 million

Graphic by Subrata Jana/Mint

Source: Credit Suisse Global Wealth Report, 2017

## WHAT IS UNIVERSAL BASIC INCOME?

It is a form of social security that involves payments to anyone without work or means of livelihood without conditions.

## IDEA GAINING GLOBAL CURRENCY



Slow growth not yielding jobs



UBI can guarantee some income to everyone



In poor countries, it can address extreme poverty



## NUMBERS TOO LARGE FOR INDIA

Considering the number of people in India, it is fiscally difficult to offer such a dole in India

(Number Of Poor, in Million)



**₹3.6 LAKH CRORE**

THE ANNUAL COST OF GIVING ₹1,500 A MONTH TO 200 MILLION PEOPLE

## TARGETED APPROACH



IT IS POSSIBLE TO PROVIDE INCOME SUPPORT TO A TARGETED POPULATION  
THIS WILL ALLOW MORE FOCUSED ACTION AGAINST POVERTY

## SECC\* ALLOWS TARGETED INTERVENTION

(in Crores)



\* Socio Economic and Caste Census, 2011

## HOUSEHOLDS THAT MAY NEED HELP



**₹1.6 LAKH CRORE**

WILL BE THE COST IF EVERY DEPRIVED RURAL HOUSEHOLD IS GIVEN ₹1,500 A MONTH



## CASE FOR UBI

Best way of addressing poverty by providing a subsistence dole

It can help cut down on multiple welfare schemes

Direct cash transfer will reduce pilferage

Social inequality will be reduced

## CASE AGAINST UBI

Too costly for government to implement

Discourage people from seeking employment

Temptation to withdraw other benefits



Its inclusion in the annual survey, a breeding ground for policies that was drafted by the government's chief economic adviser, Arvind Subramanian, gives a new focus for fans of the measure (and its opponents). A UBI is usually discussed in abstract terms. There is now a proposed amount: 7,620 rupees (\$113) a year. Equivalent to less than a month's pay at the minimum wage in a city, it is well short of what anyone might need to lead a life of leisure. But it would cut absolute poverty from 22% to less than 0.5%.

Mr Subramanian also provides an outline of how it would be paid for. Crucially, the money would largely come from recycling funds from around 950 existing welfare schemes, including those that offer subsidised food, water, fertiliser and much else besides. Altogether



# World's first driverless bus service begins carrying passengers in French city of Lyon



The minibuses drive at 6 miles (10km) an hour and carry up to 15 passengers at a time CREDIT: JEAN-PHILIPPE KSIAZEK/AFP/GETTY



Chinese e-commerce giant Alibaba has launched its traffic management service, 'City Brain', in Kuala Lumpur. The service uses cloud computing and machine learning to minimise congestion on the city's roads.

Alibaba's cloud computing arm, Alibaba Cloud, which has a data centre in Malaysia, is integrating City Brain with the Malaysian capital's existing traffic management systems. It aims to launch the completely integrated system in May 2018.

City Brain sorts through a mass of incoming data from 300 traffic lights, 500 CCTV cameras, public transport systems and other streams in order to minimise road congestion. It will use data mining, video and image recognition and other processes to determine live traffic predictions and recommendations, for instance, calculating the fastest and least disruptive route for an ambulance through the city using the inflow of real time data.



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# Worker-Owned Cooperative Models for Training Artificial Intelligence

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*CSCW '17 Companion*, February 25 - March 01, 2017, Portland, OR, USA

ACM 978-1-4503-4688-7/17/02.

<http://dx.doi.org/10.1145/3022198.3026356>

**Abstract**

Artificial intelligence (AI) is widely expected to reduce the need for human labor in a variety of sectors. Workers on virtual labor marketplaces accelerate this process by generating training data for AI systems. We propose a new model where workers earn ownership of trained AI systems, allowing them to draw a long-term royalty from a tool that replaces their labor. This concept offers benefits for workers and requesters alike, reducing the upfront costs of model training while increasing longer-term rewards to workers. We identify design and technical problems associated with this new concept, including finding market opportunities for trained models, financing model training, and compensating workers fairly for training contributions. A survey of workers on Amazon Mechanical Turk about this idea finds that workers are willing to give up 25% of their earnings in exchange for an investment in the future performance of a machine learning system.

**Author Keywords**

Worker-owned cooperatives; artificial intelligence; machine learning; human computation; crowdsourcing; policy

**ACM Classification Keywords**

K.4.3 Organizational Impact: Computer-supported cooperative work.

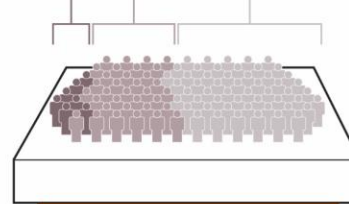


289  
CO-OPERATIVES  
80,321  
PEOPLE

1 MEMBER  
1 VOTE

## CO-OPERATIVE

MANAGERS	1 VOTE	MEMBERS	1 VOTE	NEW EMPLOYEES	NO VOTE
<ul style="list-style-type: none"><li>- elected by the members</li><li>- can no more than 3 times the lowest paid employee</li><li>- serve for 4 years</li><li>- cannot dismiss members</li></ul>					
<ul style="list-style-type: none"><li>- open membership; must invest €15,000 in the CO-OPERATIVE BANK</li><li>- committed to the MONDRAGON CONSTITUTION</li><li>- can dismiss managers</li></ul>					
<ul style="list-style-type: none"><li>- become members after a 6-12 month trial period</li><li>- contributes approximately 50-70% of workplace</li></ul>					



## PROFITS

25-50%

- one part becomes dividends paid to the members
- one part is added to the members' investment account

15-40%  
- added to the DIVISION'S collective reserve funds

20% minimum  
- added to the Central Collective reserve funds

10% minimum  
- donated to philanthropic projects in the region

5%  
- funds Mondragon research and education projects

## MONDRAGON BODIES

### CO-OPERATIVE CONGRESS

Establishes the strategic criteria and common principles of MONDRAGON  
Administered by the planning and co-ordination of 8 businesses  
Coordinates the MDC's activities, which are voted on by all worker-members  
650 members, comprised of members delegated by all co-operatives  
Meets annually

CO-OPERATIVE CONGRESS elects the  
STANDING COMMITTEE

#### STANDING COMMITTEE

Governed by a delegation from the CO-OPERATIVE CONGRESS  
Promotes and controls the CO-OPERATIVE CONGRESS policies  
Monitors MONDRAGON on a permanent basis

#### GENERAL COUNCIL

Executes STANDING COMMITTEE's policies  
Responsible for drafting and applying the corporate strategies and objectives  
Co-ordinates policies between DIVISIONS and Co-operatives

#### INDUSTRIAL COUNCIL

Co-ordinating body for the Industrial DIVISIONS

## CO-OPERATIVE BODIES

### GENERAL ASSEMBLY

Supreme body of the co-operative  
Vehicle for expressing the will of the members  
Composed of members from each co-operative  
Elected the co-operative's Presidents, who approve all management positions  
Decides the policies of the CO-OPERATIVE BANK

#### GOVERNING COUNCIL

Representative and governing body of the co-operative

#### SOCIAL COUNCIL

Consultative body, representing members as a whole within the co-operative  
Acts as a liaison between co-operatives

#### MANAGEMENT COUNCIL

Managerial and Executive team of individual co-operative management  
Responsible for the executive management of the co-operative

#### MONITORING COMMISSION

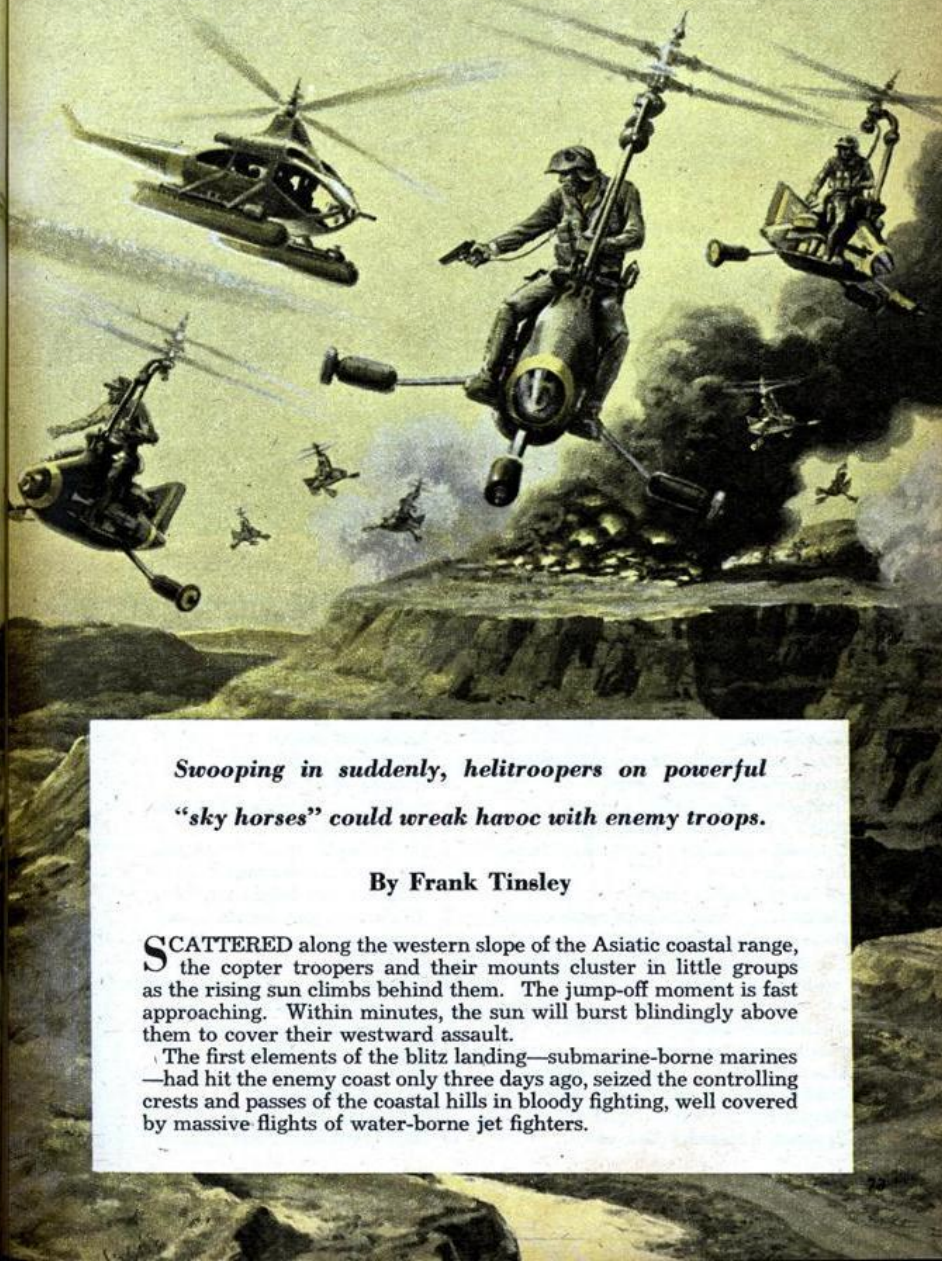
Consultative body ensuring compliance of accounting principles

## CO-OPERATIVE BANK

Manages new member investments  
Handles all MONDRAGON CO-OPERATIVES' profits  
Funds new co-operatives  
Supports co-operatives during periods of loss  
Presides over the co-operative financing system



# Let's Use Helicopter Cavalry



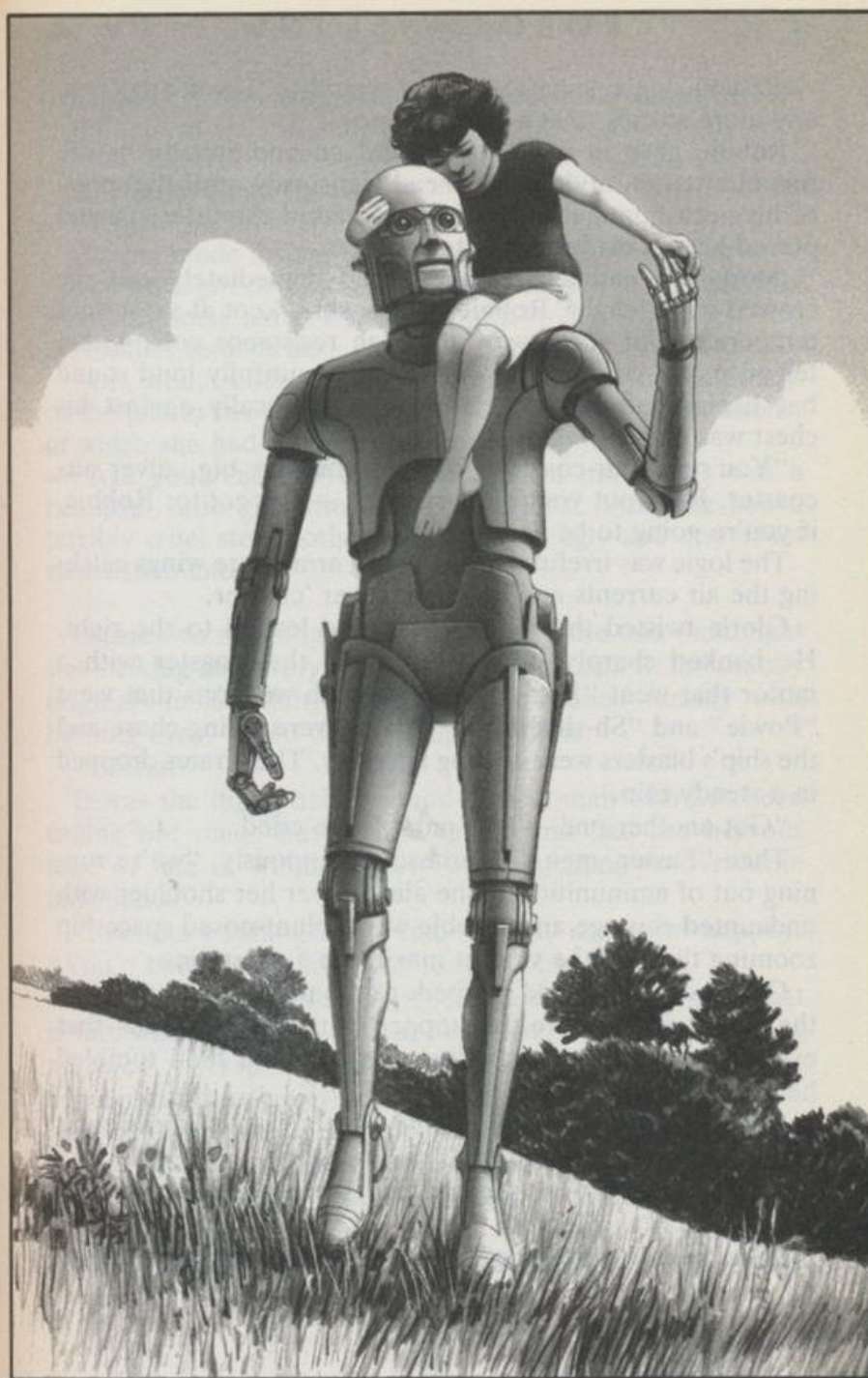
*Swooping in suddenly, helitroopers on powerful "sky horses" could wreak havoc with enemy troops.*

By Frank Tinsley

SCATTERED along the western slope of the Asiatic coastal range, the copter troopers and their mounts cluster in little groups as the rising sun climbs behind them. The jump-off moment is fast approaching. Within minutes, the sun will burst blindingly above them to cover their westward assault.

The first elements of the blitz landing—submarine-borne marines—had hit the enemy coast only three days ago, seized the controlling crests and passes of the coastal hills in bloody fighting, well covered by massive flights of water-borne jet fighters.





Thank you

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@arekhcollective