



INSTITUT MAKLUMAT DAN ANALISIS PASARAN BURUH
KEMENTERIAN SUMBER MANUSIA

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Future Of Work: An Overview

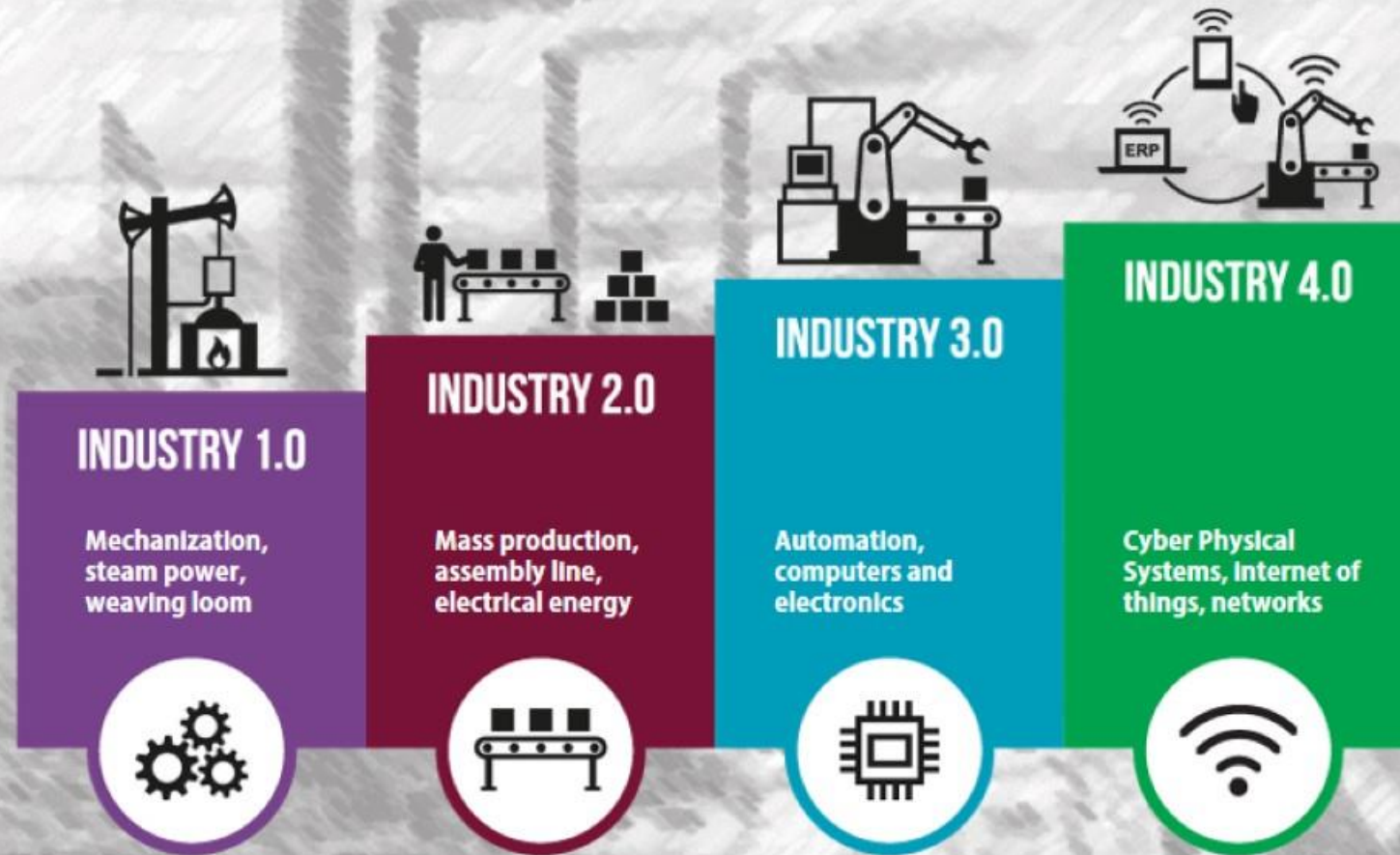
Conference On Future Of Work, Future Skills And
The Launching Of LMI Gateway & Electronic Trade Union Information
System (e-TUIS)

Le Méridien Putrajaya | 23 April 2019

ONCE UPON A TIME...

The Ford Motor Factory,
Highland Park, Detroit,
Michigan, 1914





THE **FOUR** INDUSTRIAL REVOLUTIONS

The world of work has constantly evolved since the 1st IR started circa 1760.

‘Revolution’ denotes abrupt and radical change.

These shifts/disruptions are having transformative impact on the nature of work.

DRIVERS OF CHANGE IN THE WORLD OF WORK

We need to understand how these megatrends will affect work and society in the future and how best to harness them to generate opportunities

Megatrends



Globalization



Demography



Technology

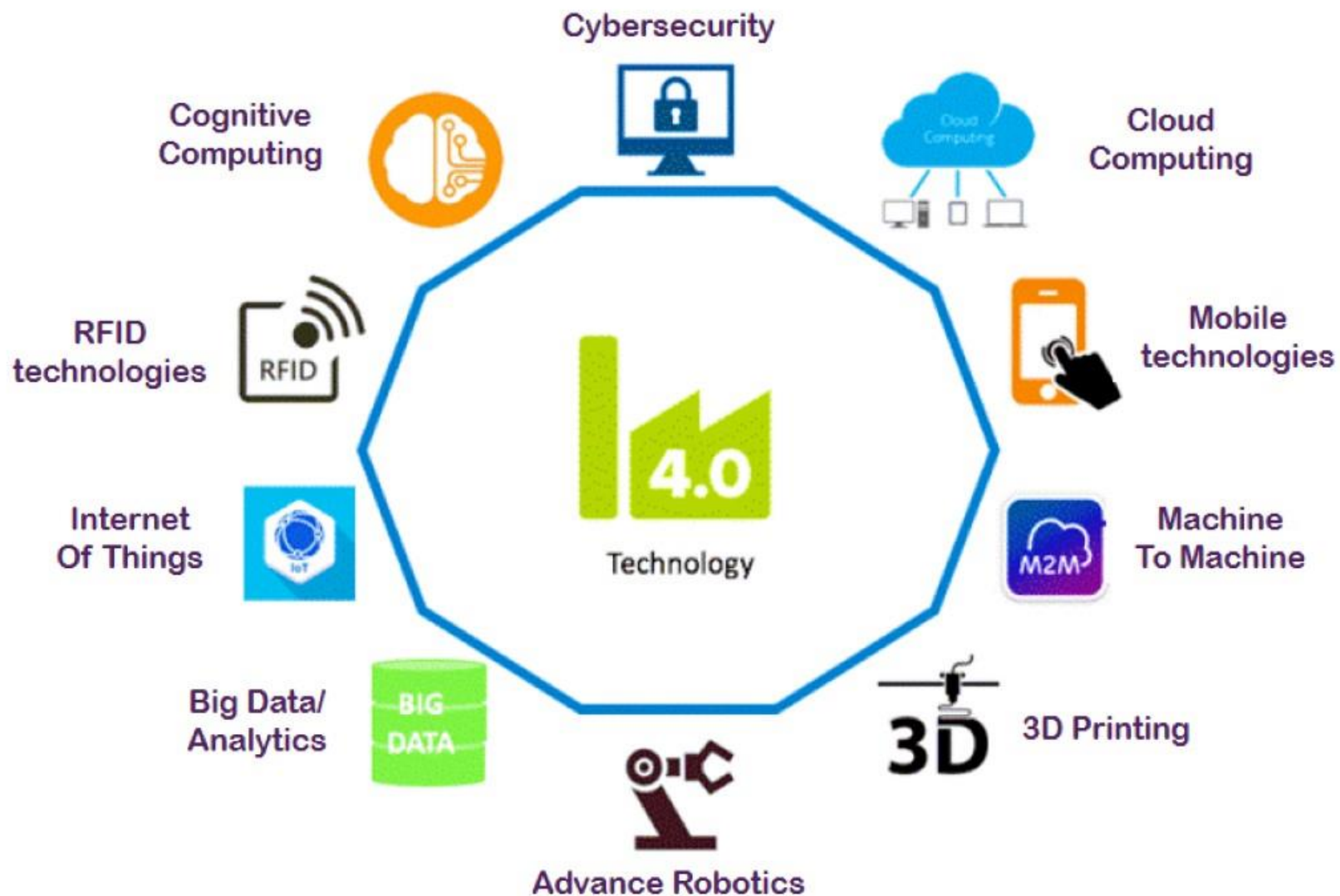


Climate Change

AT THE CUSP OF THE FOURTH INDUSTRIAL REVOLUTION

IR4.0 is upon us and is creating the perfect storm, which will provoke more upheaval of change and transformation than the previous industrial revolution.

Industry 4.0 Technological Pillars



CREATING THE PERFECT STORM...

Why more upheaval of change and transformation than the previous industrial revolutions?



Velocity

Evolving at an exponential rather than linear pace

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Breadth and Depth

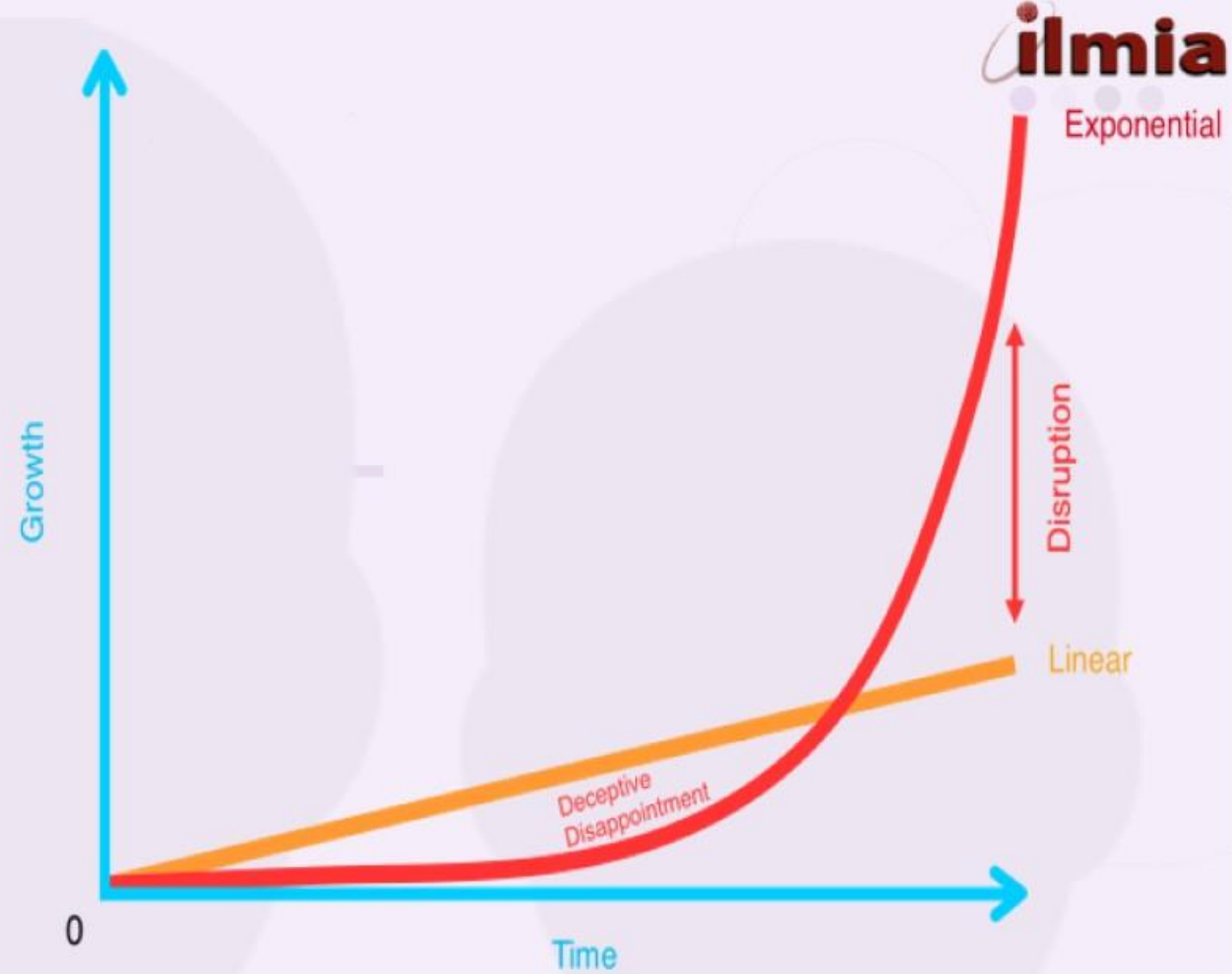
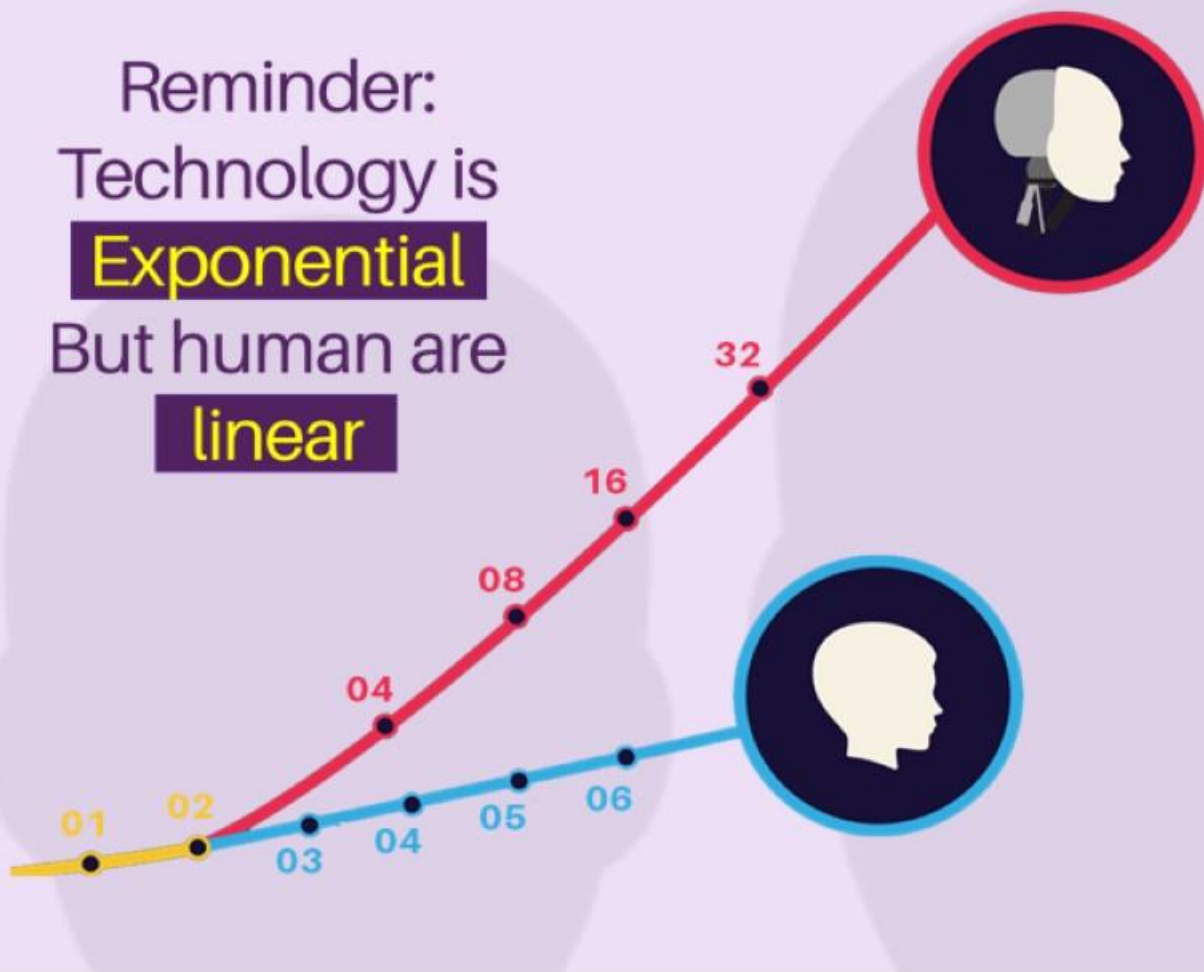
Builds on digital revolution and combines multiple technologies



Systems Impact

Transformation of entire systems, across (and within) countries, companies, industries and society

Reminder:
Technology is
Exponential
But human are
linear



Exponential disruption
has become the new
normal...

The problem with exponential
change innovation is people
We're linear humans in a world of
exponential change



WHAT THE FUTURE HOLDS FOR THE LABOUR MARKET



JOBS OUTLOOK



Positive outlook amid significant jobs disruption

The Jobs Landscape in 2022

emerging
roles,
global
change
by 2022

133
Million

declining
roles,
global
change
by 2022

75
Million

Top 10 Emerging

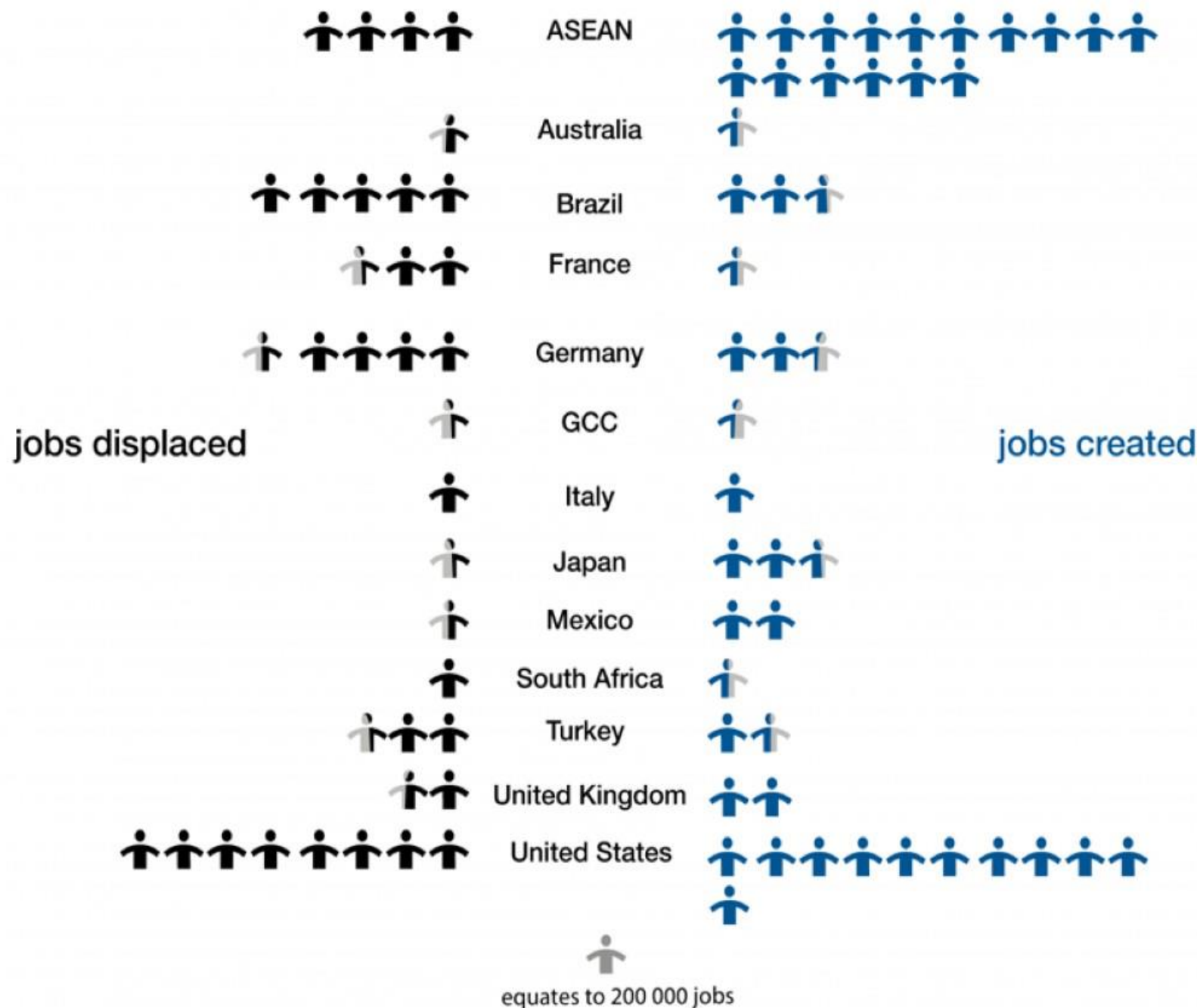
1. Data Analysts and Scientists
2. AI and Machine Learning Specialists
3. General and Operations Managers
4. Software and Applications Developers and Analysts
5. Sales and Marketing Professionals
6. Big Data Specialists
7. Digital Transformation Specialists
8. New Technology Specialists
9. Organisational Development Specialists
10. Information Technology Services

Top 10 Declining

1. Data Entry Clerks
2. Accounting, Bookkeeping and Payroll Clerks
3. Administrative and Executive Secretaries
4. Assembly and Factory Workers
5. Client Information and Customer Service Workers
6. Business Services and Administration Managers
7. Accountants and Auditors
8. Material-Recording and Stock-Keeping Clerks
9. General and Operations Managers
10. Postal Service Clerks

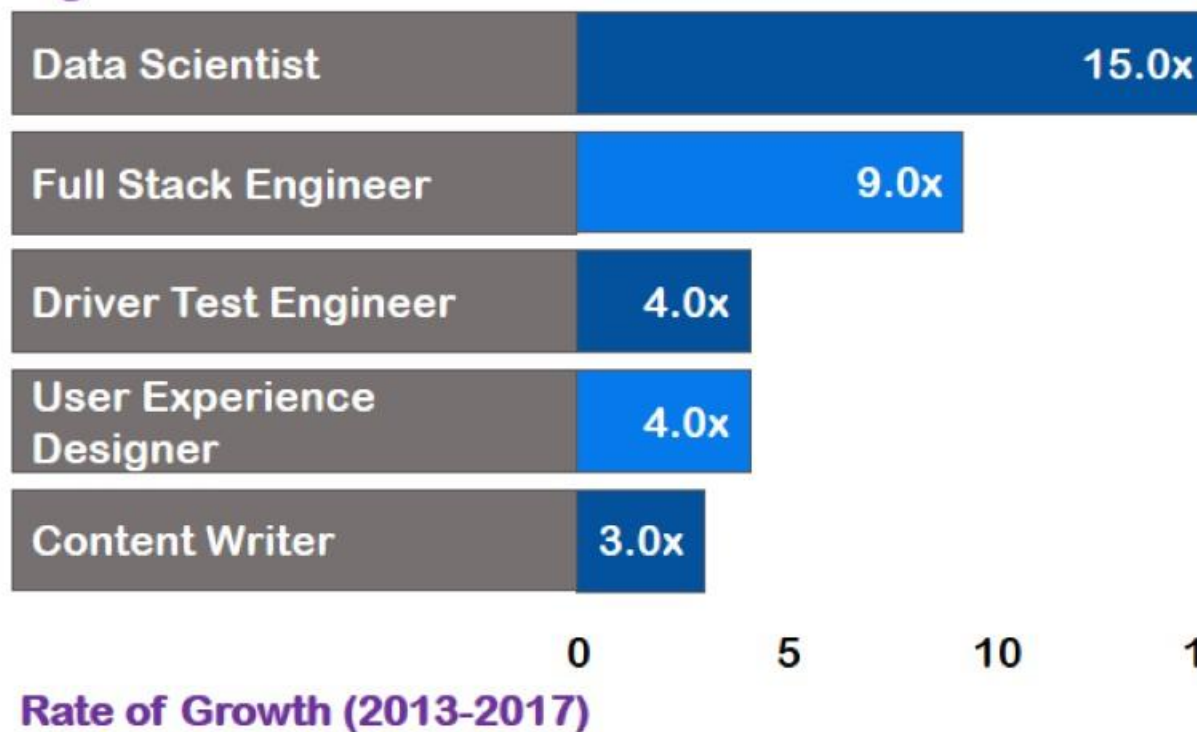
Labour markets disrupted

75 million jobs displaced, 133 million new job roles created



Malaysia: top 5 emerging jobs

The Fastest Growing Roles are Largely Digital in Nature







Source: LinkedIn Emerging Jobs Report 2018.

The many faces of the robot revolution

Automation,
robotization and
digitization:

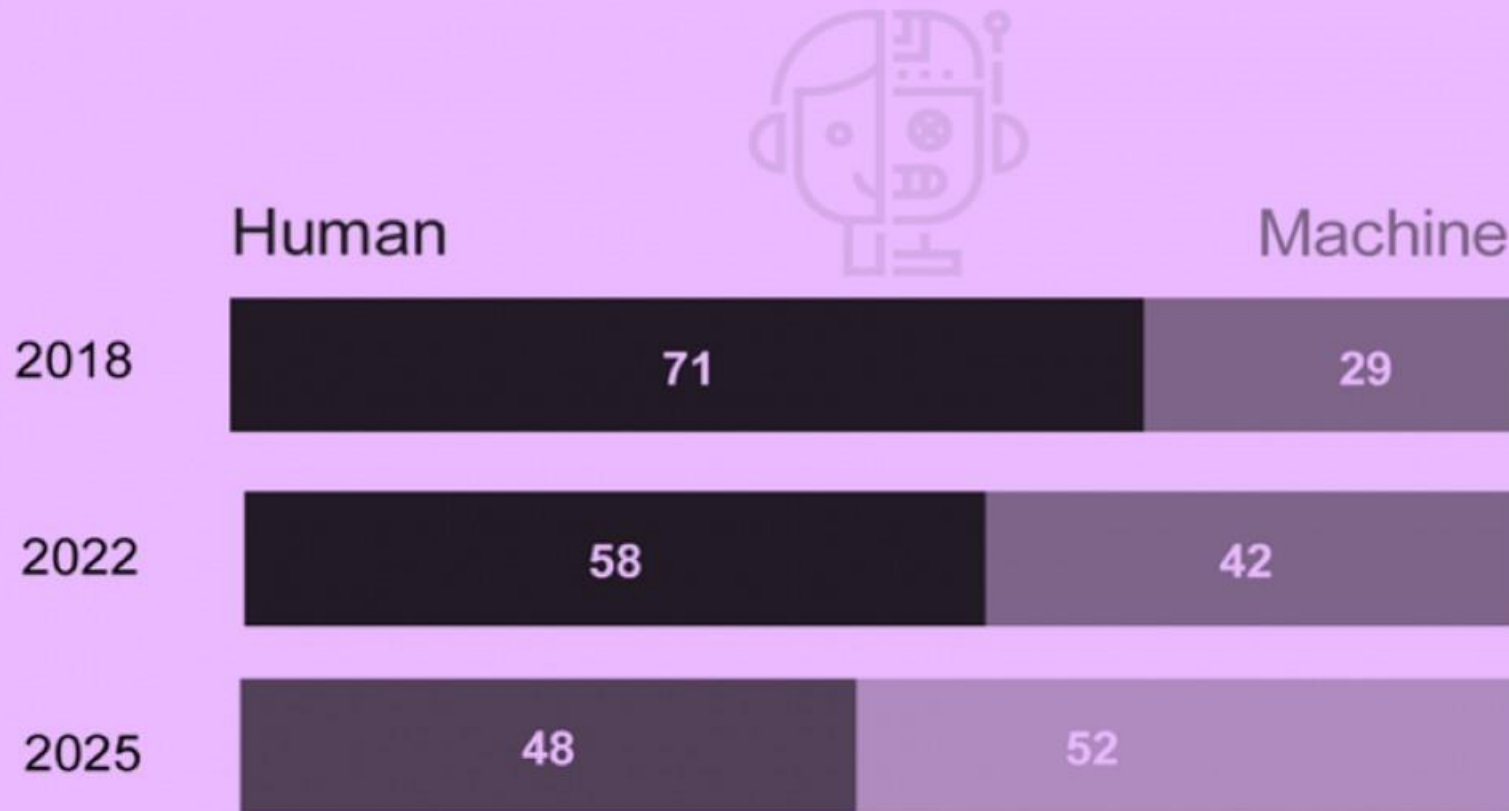
- Will look
different across
different
industries

| |  |  |  |  |
|---|---|---|---|---|
| | Humanoid Robots | Stationary Robots | Aerial and Underwater Robots | Non-humanoid Land Robots |
| Adoption among companies by 2022 | 23% | 37% | 19% | 33% |
| First movers | (35%) Financial Services and Investors | (53%) Automotive, Aerospace, Supply Chain | (52%) Oil and Gas | (42%) Automotive, Aerospace, Supply Chain |

Source: Future Of Jobs Report 2018, World Economic Forum

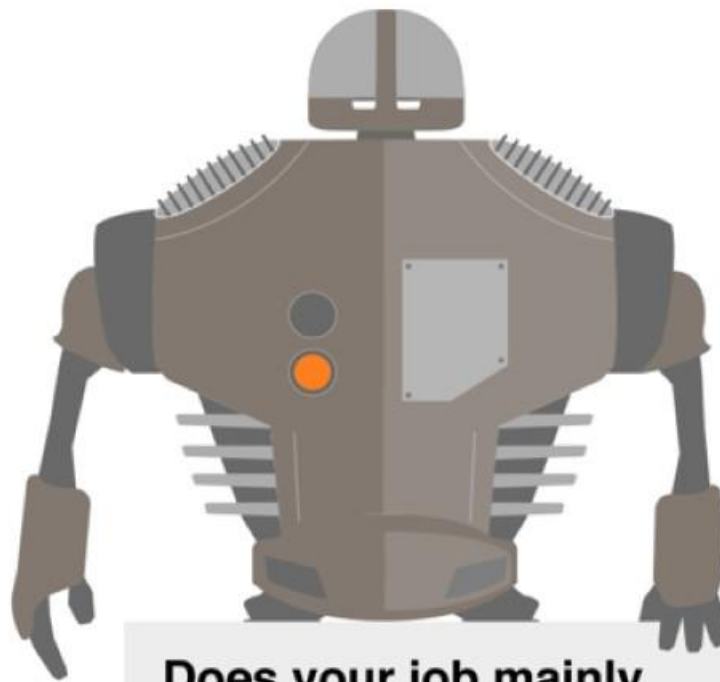
Rate of automation

Division of labour as share of hours spent (%)



- division of labour between humans, machines and algorithms is shifting fast

- Race against the machine... are workers at risk?



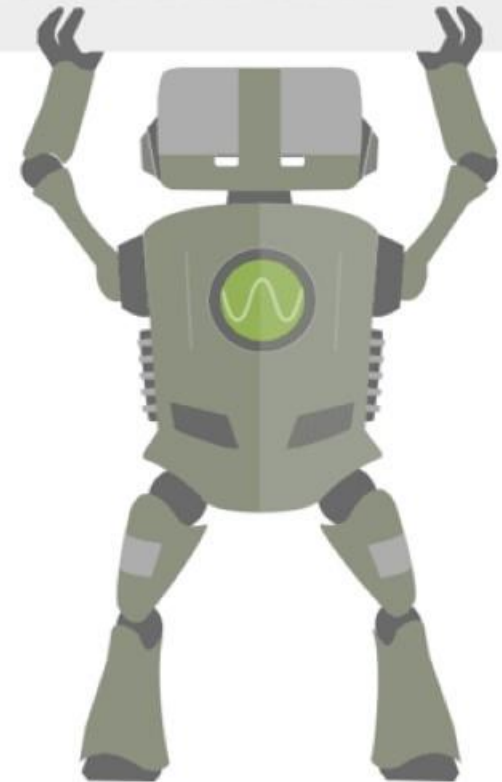
Does your job mainly require you to:

Squeeze into small spaces?
Assemble objects?
Manipulate small objects?

✗ Your job is at higher risk of automation

At work, do you need to:
Negotiate?
Help and assist others?
Come up with original ideas?

✓ Your job is safer from automation



| Organization | Estimates |
|------------------------|--|
| University of Oxford | 47% of workers in America at high risk of jobs replaced by automation |
| PricewaterhouseCoopers | 38% of jobs in America, 30% of jobs in UK, 21% in Japan and 35% in Germany at risk to automation |
| ILO | ASEAN-5: 56% of jobs at risk to automation in next 20 years |
| McKinsey | 60% of all occupations have at least 30% technically automatable activities |
| OECD | OECD average: 9% of jobs at high risk. Low risk of complete automation but an important share (between 50% - 70%) of automatable tasks at risk |
| Roland Berger | Western Europe: 8.3m jobs lost in industry against 10m new jobs created in services by 2035. |
| World Bank | 2/3 of all jobs in developing countries are susceptible to automation. |
| Bruegel | EU countries: between 47% and 54% of jobs are risk of automation. |

**estimates of
'technological
unemployment'**

Malaysian jobs at risk of automation

- Semi-skilled jobs are most affected;
- 90% of all semi-skilled jobs are held by Malaysians.

1) Overall

Low risk – 16%

Mainly managerial occupations across most industries, and high-skill professionals including in science and technology, health and education



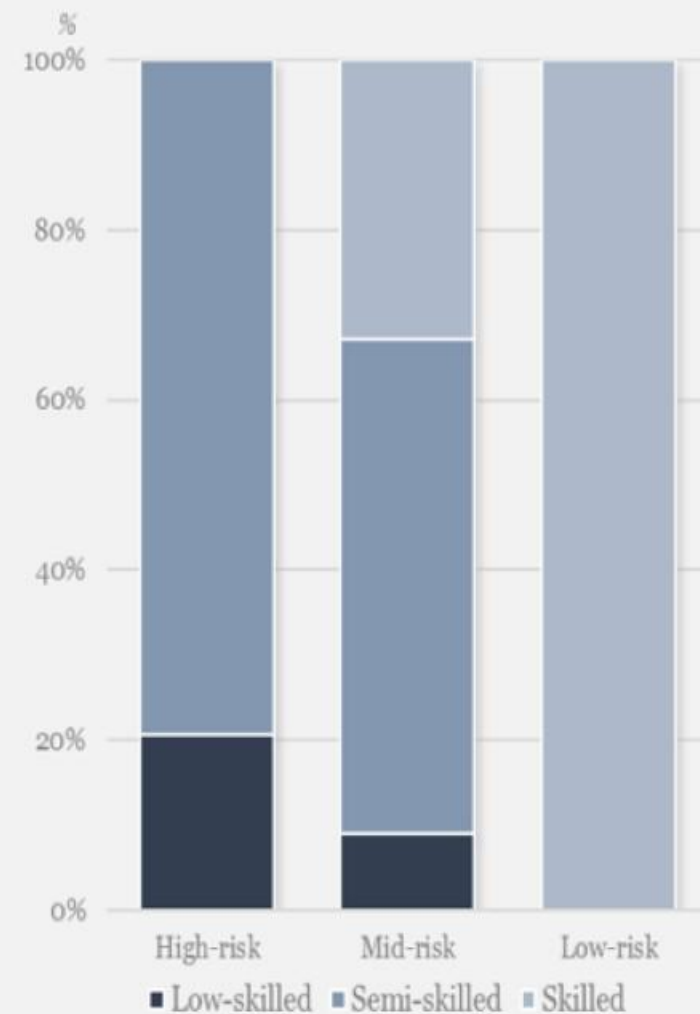
Medium risk – 30%

Ranges from high-skill to low-skill occupations - including technicians and associate professionals (e.g., medical technicians, executive secretaries), personal service workers, E&E and ICT mechanics and repairers, and cleaners and helpers

High risk – 54%

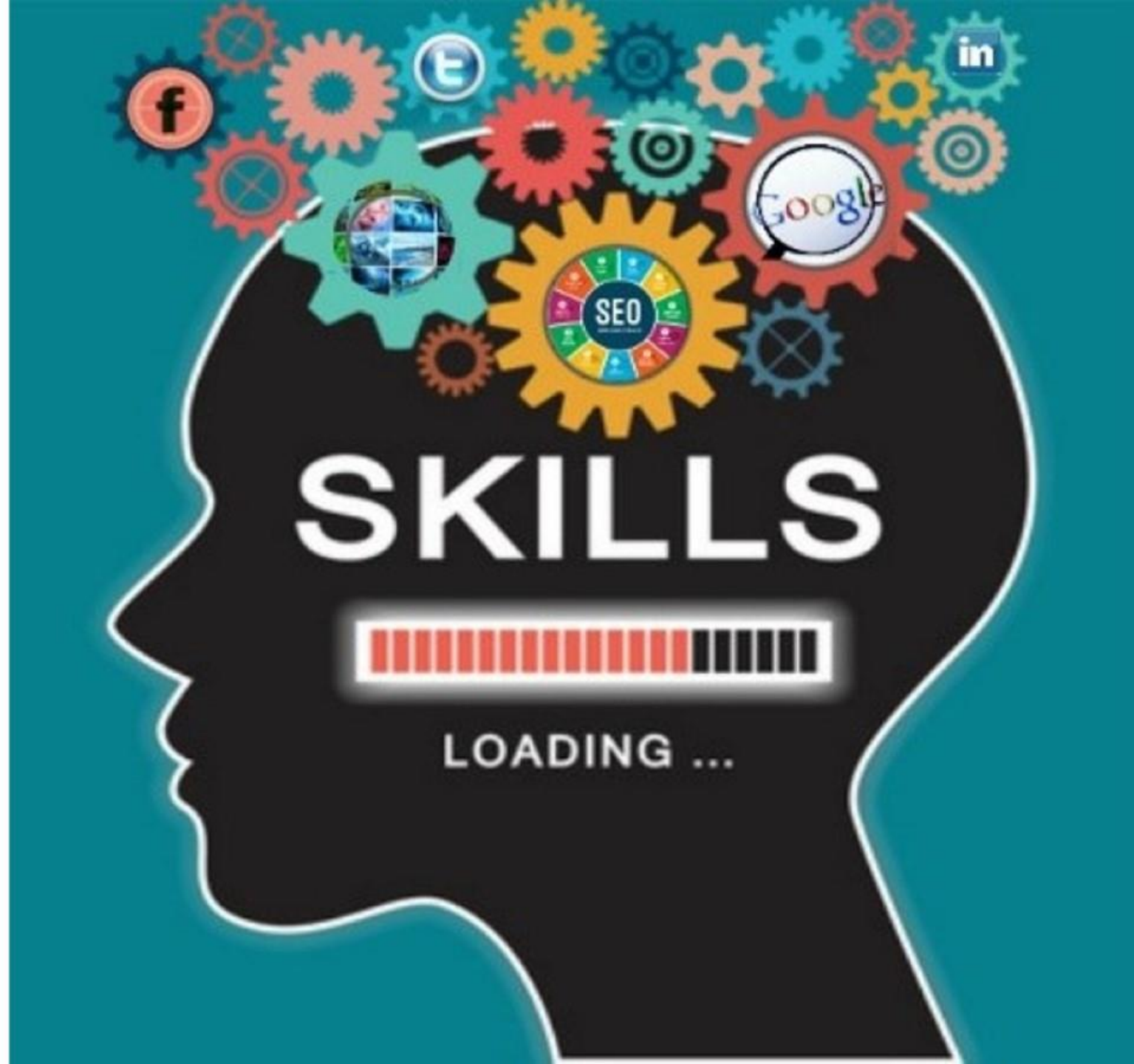
More than 70% of semi-skilled and 80% of low-skilled jobs across all major sectors – including clerical support workers, sales worker, and many semi-skilled and elementary occupations in manufacturing, construction and agriculture

2) Employment at risk by skill-level





SKILLS OUTLOOK



SKILLS OUTLOOK

- new tasks at work are driving demand for new skills

2022 Skills Outlook

Growing

- 1 Analytical thinking and innovation
- 2 Active learning and learning strategies
- 3 Creativity, originality and initiative
- 4 Technology design and programming
- 5 Critical thinking and analysis
- 6 Complex problem-solving
- 7 Leadership and social influence
- 8 Emotional intelligence
- 9 Reasoning, problem-solving and ideation
- 10 Systems analysis and evaluation

Declining

- 1 Manual dexterity, endurance and precision
- 2 Memory, verbal, auditory and spatial abilities
- 3 Management of financial, material resources
- 4 Technology installation and maintenance
- 5 Reading, writing, math and active listening
- 6 Management of personnel
- 7 Quality control and safety awareness
- 8 Coordination and time management
- 9 Visual, auditory and speech abilities
- 10 Technology use, monitoring and control

- We will all need to become lifelong learners

By 2022 everyone will need
an extra

101
days of
learning



IMPLICATION FOR WAGES

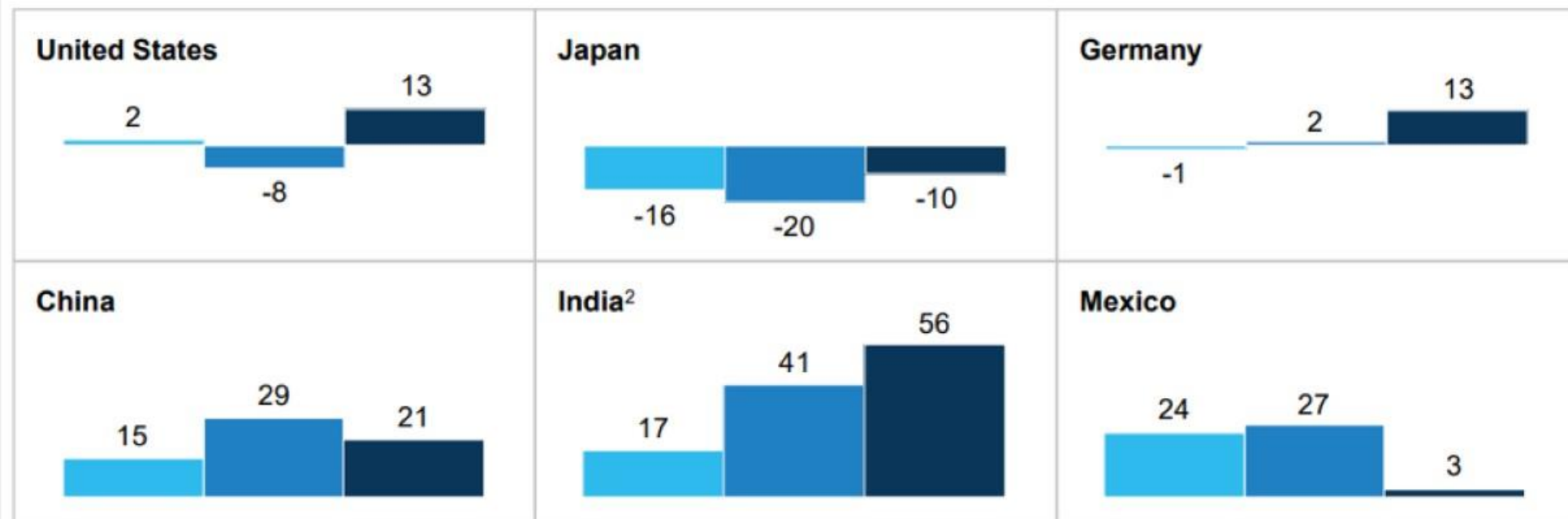


- Income polarization in advance economies, opposite trend in developing economies

Generally, high-wage jobs show the most positive percentage change in advanced economies, while mid-wage jobs fare best in emerging economies

Net job change by tercile, step-up scenario, 2016–30
% \pm change in labor supply due to automation and labor demand catalysts¹

0–30th 31st–70th 71st–99th



¹ Midpoint of earliest and latest automation adoption.

² Low-wage group for India includes all production occupations (~45% of total population).

NOTE: Some occupational data projected into 2016 baseline from latest available 2014 data.

Source: McKinsey Global Institute, 2017.

WHAT'S NEXT?



PRIORITIES STAND OUT FOR DIFFERENT STAKEHOLDERS

GOVERNMENT

- Upgrade education policies to raise education and skills levels of individuals;
- Stimulate job creation;
- Radically scale midcareer training opportunities to make lifelong learning a reality;
- Expand transition support measures for workers;
- Create income support measures consistent with new wage realities; and
- **Modernize data collection on the labour market.**



...PRIORITIES STAND OUT FOR DIFFERENT STAKEHOLDERS

MODERNIZE DATA COLLECTION ON THE LABOUR MARKET:

Government surveys of households and employers are gold standard of national economic data. Nonetheless it is time consuming.

In light of today's dynamically changing world, governments needs to supplement these surveys with real-time data on adoption of technologies, jobs openings, labour market dynamism, skills demand, and how individuals are coping with jobs transitions.

Government statistics agencies to collaborate with online sources of data, including job boards, professional sites such as LinkedIn, and private tech companies, to obtain a more detailed and accurate picture of jobs, skills, wages, and individual mobility and career moves.

...PRIORITIES STAND OUT FOR DIFFERENT STAKEHOLDERS

INDUSTRIES:

- Adapt talent strategy and manage workforce transitions;
- Support the up-skilling of workforce;
- Reposition themselves as learning organizations.



PRIORITIES STAND OUT FOR DIFFERENT STAKEHOLDERS

WORKERS:

- Take personal responsibility for one's own lifelong learning and career development;
- Embrace a 'start-up of you' mentality;
- Prepare for a world of digital job search;
- Consider new ways of working.



...PRIORITIES STAND OUT FOR DIFFERENT STAKEHOLDERS

Ultimately, the core objectives for governments, industries and workers alike are to ensure that tomorrow's jobs are fairly remunerated, entail treatment with respect and decency and provide realistic scope for personal growth, development and fulfilment.



WORDS FOR THOUGHT

“

The challenges created by the fourth industrial revolution appear to be mostly on the supply side – in the world of work and production.

”

Klaus Schwab, Founder and
Executive Chairman, WEF





THANK YOU

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