

MEGATRENDS AND THE WORLD IN 2030

INSPIRING A NEW NARRATIVE OF PROGRESS FOR THE NATION'S DEFENCE INDUSTRY

Mohd Nasir Md Ibrahim
imnmas@might.org.my



SOCIAL
DRIVEN TRENDS



TECHNOLOGY
DRIVEN TRENDS



ECONOMY
DRIVEN TRENDS



ENVIRONMENT
DRIVEN TRENDS



POLITICAL
DRIVEN TRENDS

With the vast globalisation happening at break-neck speed, one only has to look around to see that the growth of innovation is relentless, disruption is accelerating, and work-life expectations have become sky-high. This infographic is about identifying, making sense and making use of these rapidly changing megatrends to help us make better informed, more strategic choices, shape markets to our advantage, and create a brighter future not just for our nation's defence industry but our people too.



SOCIAL DRIVEN TRENDS

How Changes in Society Can Impact Defence and Defence Related Industry



The world in 2030 REDEFINING HEALTH

'The society will redefine health and focus on the **value of wellbeing**; new approaches to wellbeing are embedded at individual, organisational and community level.'

The **wellbeing market**: preventative health, self-improvement coaching, organisational and educational programmes, fitness, diet, health and beauty, travel and real estate

The **combined value of Wellbeing** possibilities could reach

USD 7 Trillion
within a few years.

The **global genomics market** is projected to reach **USD 35.7 Billion by 2024** (USD 18.9 Billion in 2019)

The **healthcare wearables market**, including health trackers and remote monitoring devices, is set to reach

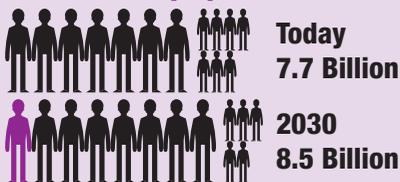
USD 60 Billion by 2023.

The **self-improvement coaching market** is forecast to reach

USD 13.2 Billion by 2022 (USD 9.9 Million in 2016)

The growth of human population is unprecedented...

World population



And the world's active military manpower..



The military now requires an open & agile workforce...

Current (industrial-age) talent model

Linear progression from intake to exit



Manage talent via speciality and seniority



*Military occupation speciality code

Future talent model



Open workforce

- More flexible career paths
- Contact with civilian population to get access to the skills and talent the military needs

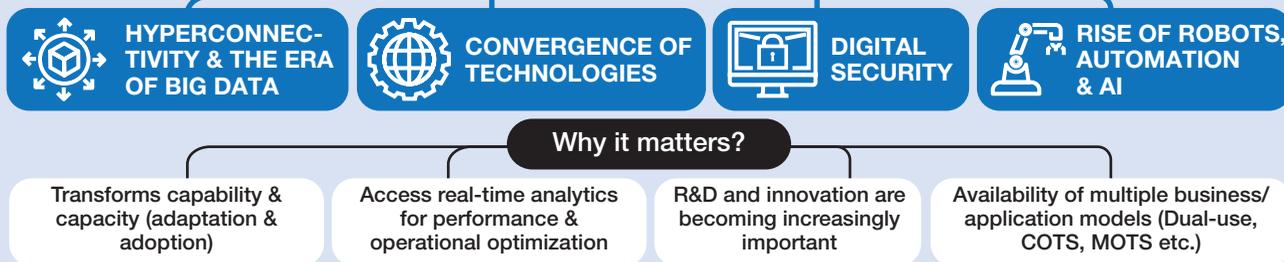
Agile workforce

Individualised talent management to use the full potential of every service member and employee



TECHNOLOGY DRIVEN TRENDS

How Changes in Technology Impact Defence and Defence Related Industry



The world in 2030 LIVING IN A CONNECTED WORLD

<p>Big data revenue is set to exceed USD 90 billion by 2025 double the figures reported for 2018.</p> <p>'It's all about hyperconnected devices, data and people; data will further improve the capacity of AI-based systems to optimise processes and services and disrupt business models across a range of sectors'</p> <p>The connected world market: personalised healthcare and finance, mobility, energy efficiency and new business models will emerge, using real-time, purpose-built platforms</p>	<p>The global autonomous vehicle market is projected to grow to USD 556.67 billion by 2026</p>	<p>The estimated economic impact of the IoT is estimated at USD 11.1 trillion per year in 2025</p> <p>As computing power and storage become cheaper and more efficient, and 5G technology is rolled out, future rises in connectivity will be driven more by devices than people</p>	<p>There will be an estimated 3.5 billion IoT connections by 2023, up from 1 billion in 2018. Currently, there are twice as many connected devices as people</p>
--	--	--	---

Current and Emerging Applications in Aerospace and Defence 4.0

CURRENT APPLICATIONS	TECHNOLOGY	EMERGING APPLICATIONS
Prototyping, tooling, and functional end-use parts manufacturing	ADDITIVE MANUFACTURING	Combining new types of novel materials to improve aerospace parts and accessories
Monitoring real-time aircraft health; identifying system/component failure in advance; making intelligent scheduling and forecasting models	ADVANCED ANALYTICS	Developing large-scale digitisation of plane maintenance data and schedules; creating synergies across business and functional areas by enabling the "connected plane"
Using robotics in aircraft manufacturing for more efficient production, with fewer errors and quality issues	ADVANCED ROBOTICS AND COGNITIVE AUTOMATION	Simplifying simulations of aircraft, weapons, and satellite performance, avoiding time-consuming analysis and test of algorithms, software, and hardware
Applying AI to robotics, automatic programming of tasks and processes in industrial settings, and enabling predictive maintenance	ARTIFICIAL INTELLIGENCE	Leveraging AI and computer vision technologies to augment advanced safety features in aircraft; incorporating advanced AI into drones; and replacing human copilots in new, autonomous aircraft
Enabling greater transparency of information between different parties; improving just-in-time logistics; reducing erroneous orders; improving inventory turnover	BLOCKCHAIN	Improving tracking in supply chains and procurement using a shared database with supplier and partners; improving validation of supplier performance and reputation; and time-stamping records to reduce fraud and improve supply chain security
Replacing assembly manuals with smart-glasses display, which substantially reduces wiring production time	DIGITAL REALITY (AR/VR/ MIXED REALITY)	Using VR to optimise and design factories, and simulate an entire factory or warehouse to train workers to use equipment more safely and efficiently
Monitoring aircraft engine health and optimising engine performance based on data collected from sensors	INTERNET OF THINGS	Managing material costs and demand fluctuations by analysing big data, enabling integrated smart connected assets and operations, and eventually, an autonomous production environment



ECONOMY DRIVEN TRENDS

How Changes in Economy Can Impact Defence and Defence Related Industry



The world in 2030 AVOIDING OWNERSHIP

The **desire to “experience”**, rather than to consume, personalisation, experience tourism and virtual reality are available, becoming more sophisticated and affordable; all products to become services, shifting from ownership to **usership**’

The **‘avoiding ownership’** market: financial services, travel and tourism, consumer goods and information and communication technologies

The **global digital content market** is expected to reach

USD 237.3 billion by 2024, up from USD 143 billion in 2019

The **global sports tourism market** is projected to reach

USD 2.9 billion by 2028, up from USD 1.4 billion in 2018

The **global chatbot market for banking and financial Services** was valued at USD 357 million in 2017, and is projected to reach **USD 2.1 billion by 2024**

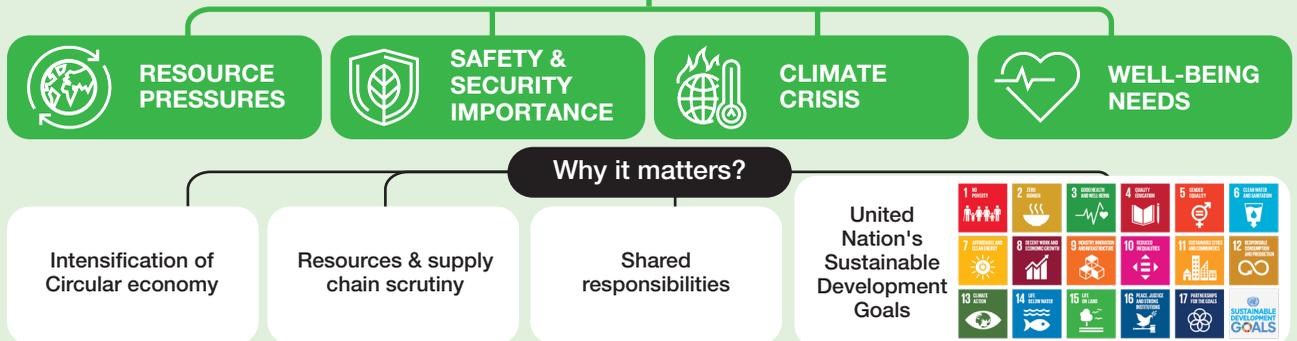
The **3D printing sector** is expected to be worth over **USD 28 billion by 2024**.

Customer experience management solutions will reach USD 14.5 billion in 2024



ENVIRONMENT DRIVEN TRENDS

How Changes in Environment Can Impact Defence and Defence Related Industry



The world in 2030 OPTIMISATION OF NATURAL RESOURCES

‘**Public awareness** of the need to **reduce environmental impact is growing**; open up new possibilities across value chains based on optimising the use of resources and reducing waste.’

The **‘natural resources’** market: recycling and upcycling will become more mainstream as new technological solutions become available

The **European Commission is planning to invest EUR 1 trillion into sustainability** related projects under the European Green Deal by 2030.

The **global fashion industry** could unlock **USD 150 billion of net new revenue through tackling waste** and encouraging resale of used products at scale.

Global revenue from smart water networks is projected to grow from USD 2.6 billion in 2016 to **USD 7.2 billion in 2025**

40% of steel production is made from scrap and the **size of the metals recycling market** is projected to grow from USD 277 billion in 2015 to **USD 406 billion by 2020**, at an estimated CAGR of 8%





POLITICAL DRIVEN TRENDS

How Changes in Political Can Impact Defence and Defence Related Industry



The world in 2030 CONNECTING CITIZEN

‘Governments are able to manage change through strong leadership, superior teams and a clear and compelling vision; leading towards **citizen-centric service delivery, long term planning, flexible and proactive government.**’

The “connect to citizen” market: digitalisation, e-government, wearable device, IoT & AI, virtual reality and connected devices

85% of citizens expect government to deliver the same, if not **better, services** as the private sector.

The **number of Internet of Things-connected devices** will likely reach **25 billion by 2021**

By 2020, 5 billion personal data records are projected to be stolen globally, up from 2.8 billion in 2017. This puts business, government, and people at risk and reshapes the digital divide

Data informed interactions per person grow - expected to multiply more than **300 percent by 2025;** agencies become more adept at capitalising on their data in new ways to better serve their customers and workforce

“

In the thick of a fourth industrial revolution, which will become known as the digital revolution, some technology driven trends that will majorly impact the defence and defence related industries include advanced automation and robotics, Artificial Intelligence (AI) and machine learning, sensor technology and the Internet of Things (IoT).

”

