

Artificial or human intelligence: Which will drive future innovation?

1 Warmer

Put these technological developments in order from 1 (most likely to happen soon) to 6 (least likely to happen soon).

- a. electric aircraft
- b. colonisation of the Moon
- c. drone mail deliveries
- d. cashless economies
- e. 3-D printed furniture
- f. 100% synthetic food

2 Key words and expressions

Find the words or phrases in the article that match the definitions below. Use the paragraph numbers to help you.

1. to suddenly move in a different direction (1) _____
2. the things that you decide you have to do to succeed in achieving a goal (2)
(two words) _____
3. of the basic ordinary type, with no special features (2) _____
4. a private start-up business with a value of over \$1 billion (4) _____
5. about to do or achieve something after preparing for it (4) _____
6. to happen at a faster rate (5) _____
7. a feeling that something is true or will happen, although you do not know any definite facts about it
(8) _____
8. to start to use something (9) _____
9. a written statement showing the value of a company at a particular time (10)
(two words) _____
10. to increase the size, amount or value of something (11) _____
11. anything that prevents progress or makes it difficult for someone to achieve something
(11) _____
12. the possibility to develop or achieve something in the future (12) _____

Bold business ideas: Where is tech taking us?

Smart companies will use innovation to augment rather than replace human intelligence

BY LEO JOHNSON

- 1 For the first 250 metres it all goes well. I am in Singapore, in the back of a prototype driverless car, gazing at the other side of the road. Then our car decides to veer slowly into the path of the oncoming rubbish truck.
- 2 Our emergency driver lunges for the wheel, yanks us back to safety, then tells me the game plan. This isn't a vanilla driverless car, he explains, it is a do-it-yourself driverless car, made with off-the-shelf technology, and the goal is to get it on the road as fast as possible.
- 3 But the car, which works a treat for the rest of the day, is only step one. Step two is to fully automate Singapore's economy. Step three is to put all citizens on universal basic incomes. Step four is to use facial recognition technologies to close off the city to unwanted foreign migrants. It is a straight line, in other words, from the technological to the economic to the social, then the political.
- 4 If the 2010s were the decade of the unicorn — the mythical beast of the \$1bn tech start-up — the 2020s appear poised for a unicorn stampede. With Timandra Harkness, the co-presenter of our BBC Radio 4 show FutureProofing, I have spent the past three years scanning the horizon for what is coming in terms of disruptive technologies. The cupboard isn't bare: eggless synthetic biology scrambled eggs, stem cell rejuvenation, weaponised nanobots, the colonisation of Mars, passenger-bearing mega-drones and brain-to-brain communication systems.
- 5 Across disparate fields, from artificial intelligence to robotics, from 3D printing to nanotechnology, from genetics to quantum computing, a pattern is emerging: technological developments are starting not just to accelerate but to amplify one another.
- 6 They are poised to reshape the business landscape. The core capacity we are going to need to survive, says Astro Teller, the so-called Captain of Moonshots at X, Google's research unit, may be dynamic stability — the velocity to stay upright.
- 7 But as the rubbish-truck economy of Henry Ford's fossil-driven mass production starts to yield to the age of the algorithm, what is the impact on business and society? Where does this rollercoaster look like it is going to take us?
- 8 My hunch it is not just speed that matters, it is direction. If technology is not the answer but the amplifier of intent, there is a primary question we have to answer: What are the problems we are looking to solve?
- 9 It looks like there are two different directions emerging. We have the option to prize artificial over human intelligence, to deploy technology in a centralised model that solves for shareholder value at the expense of jobs, that automates — according to projections by University of Oxford academics Carl Benedikt Frey and Michael Osborne — 47 per cent of US and UK white-collar jobs by 2035.
- 10 This would hit national balance sheets with the double whammy of lower tax revenues and surging welfare costs, and set the stage — with increased inequality and the perception of an economy no longer working for the many — for broader support for challenger populist movements.
- 11 But there is also another option: to do the opposite, not to replace human intelligence but to augment it. Go back 1,000 years and the means of production was the land, and the barrier to entry was the wall. For the past 200 years the means of production has been the factory, and the barrier to entry the capital to own it. But with this new set of technologies, from APIs, the cloud and open data, to the sharing economy and micro-printing, the barriers to entry are dropping fast.

Continued on next page

12 The potential is there, to unlock a new wave of cognitive surplus and put power in people's hands to drive innovations across the challenges that confront us, from distributed solar energy to data-driven banking for the unbanked, from 3D-printed ultra-low-cost housing to sensor-based micro-irrigation for drought-resilient agriculture.

13 What does real boldness look like for me as we head into the 2020s? It is boldness not just of execution but of intent.

FT

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3 Understanding the article

Choose the best answers according to the text.

- How did the author avoid an accident in Singapore while in the prototype driverless car?
 - He grabbed the wheel and avoided the oncoming rubbish truck.
 - The emergency driver grabbed the wheel and avoided the oncoming rubbish truck.
 - He accelerated quickly to avoid the oncoming rubbish truck.
- In terms of 'unicorns', how will the 2020s differ from the 2010s?
 - There will be no more unicorns.
 - There will be a few more unicorns.
 - There will be many more unicorns.
- What does the author mean when he says 'the cupboard isn't bare'?
 - People have a lot of new technological ideas.
 - There aren't many ideas for applying technology to new inventions.
 - New technology will allow us to replace some food items.
- What could happen if artificial intelligence was prioritised over human intelligence?
 - Automation would lead to massive job losses.
 - Technology would bring huge rewards for shareholders.
 - Nearly half the factories in the US and UK would have to close.

5. How would high unemployment affect national balance sheets?
 - a. Populist movements would gain support.
 - b. There would be less revenue from income tax and higher welfare costs.
 - c. People would believe that the economy was no longer working for most people.
6. According to the author, what will people need to create wealth and power in the future?
 - a. access to land
 - b. money to invest in factories
 - c. innovative ideas that rely on technology

4 Business language – idioms

Match the expressions with their meanings.

- | | |
|---------------------|---|
| 1. off-the-shelf | a. look carefully at the future |
| 2. works a treat | b. a set of two bad events or situations that have an effect at the same time |
| 3. scan the horizon | c. a situation in which there are many big and sudden changes |
| 4. vanilla | d. very effective |
| 5. rollercoaster | e. of the basic type with no special features |
| 6. double whammy | f. sold for general use, not made for a particular person or purpose |

5 Business language – word building

Complete the table using vocabulary from the text.

Verb	Noun
1. innovate	
2. recognise	
3. develop	
4. opt	
Adjective	Noun
5. unequal	
6. bold	
7. dry	
8. stable	

6 Business language – expressions with prepositions

Complete the phrases with prepositions.

1. in terms _____ technology
2. the impact _____ business
3. _____ the expense of jobs
4. the barrier _____ entry
5. poised _____ a rapid increase
6. valuing artificial intelligence _____ human intelligence
7. as we head _____ the 2020s
8. put power _____ people's hands

7 Discussion questions

- Are artificial intelligence and automation the answer to the world's problems? Give reasons why or why not.
- Singapore is considering a four-stage programme. What do you think of the country's plans?
- The article suggests that humans not machines will drive technological innovations. Do you agree with this? Give reasons for your answer.
- Projections suggest that 47% of white-collar jobs could be lost by 2035. What effects could this have?

8 Wider business theme – technological developments

1. **Read paragraphs 4 and 12 of the article again. The author refers to a number of technological developments that may radically change the world we live in. Choose one of these 'disruptive technologies' and investigate it further (e.g. irrigation for drought-resilient agriculture or colonisation of Mars).**

- enter your chosen technology into a search engine
- using data from at least two different websites, get information about current developments in this area of technology
- find out what predictions are for the future of this technology, including the predicted timescale for its introduction
- find out what will be needed for this technology to be fully implemented (e.g. research and development, funding)
- evaluate the usefulness of this technology for present and future generations

2. **Present your findings to the group.**