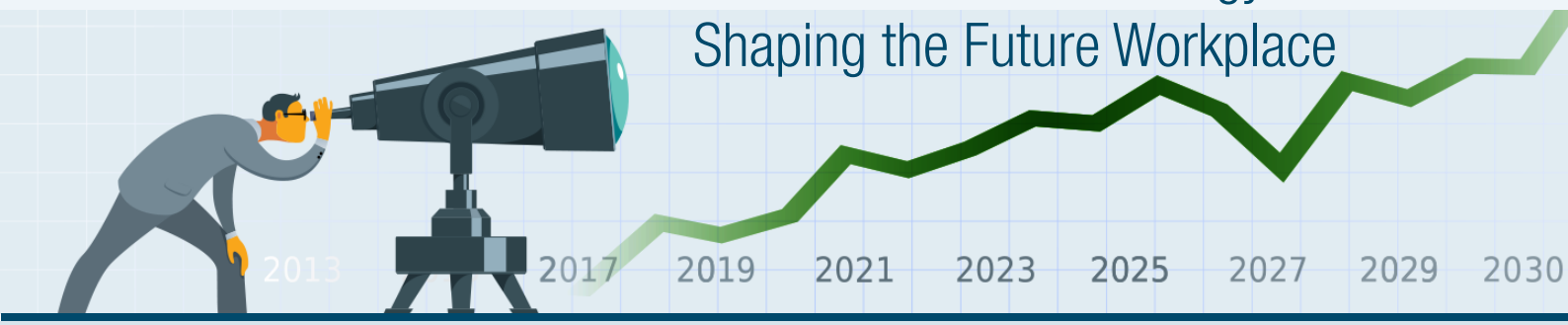
Future Firsts: Technology Forces Shaping the Future Workplace



BEYOND HUMAN

A future awaits in which smart implants, DNA-derived treatments, high performance prosthetics and memory-enhancing components collectively ensure that every human will feel the bio-upgrade itch.

The notion that there are natural limits to our physical and intellectual abilities is progressively weakening. Even as societies struggle to meet the altogether more basic and immediate health objectives of the day, early momentum builds behind the view that the human form – its core physical-cognitive assets, its frailties, its limitations – can (and should) be augmented to fundamentally enhance performance.

In Beyond Human, we anticipate a world in which the transformative power of technology – a force dramatically disrupting how we communicate, shop, work and entertain ourselves – is aggressively brought to bear on the human experience.

A future awaits in which smart implants, DNA derived treatments, high performance prosthetics and memory enhancing components will collectively ensure that humankind will push its boundaries and potential. Indeed, early consumer interest and uptake in both current and hypothetical innovations suggests that many would welcome the opportunity.

Elon Musk has claimed that “If humans want to continue to add value to the economy, they must augment their capabilities through a merger of biological intelligence and machine intelligence,” advocating the adoption of mechanical or digital augmentations to improve the capacity of the human body.

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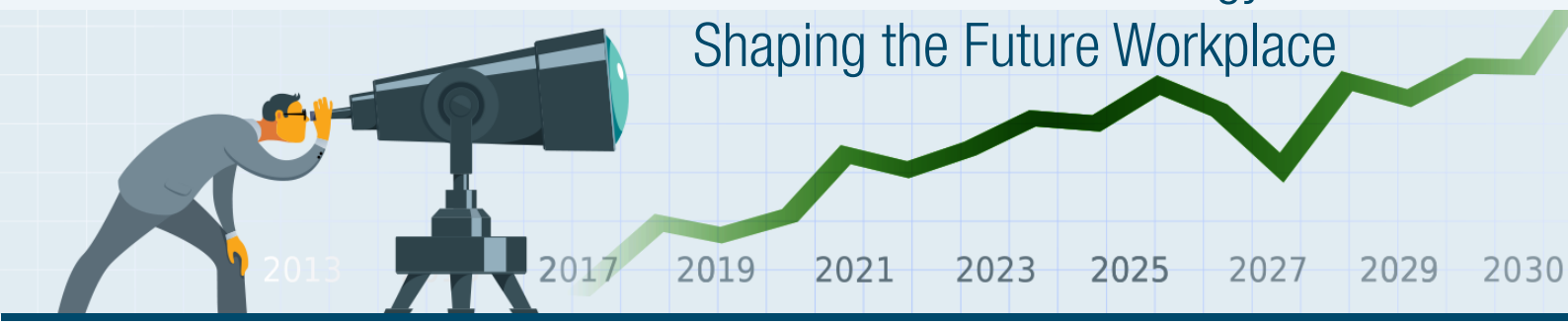
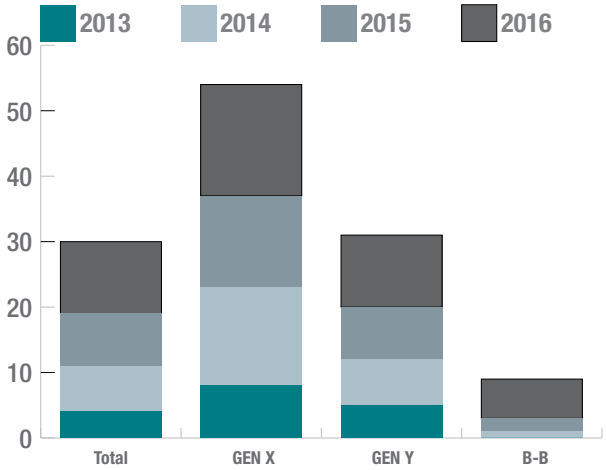


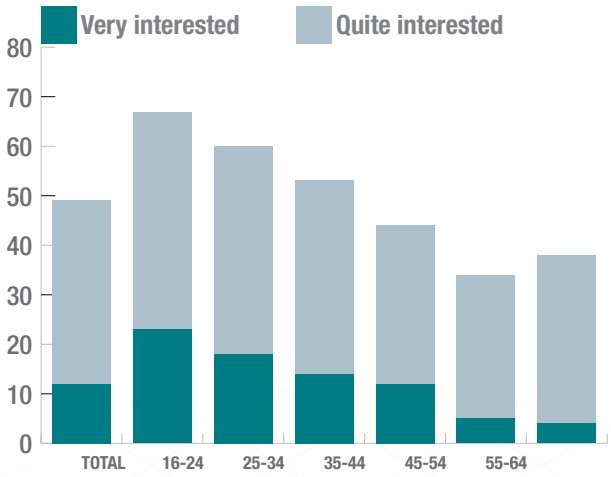
BEYOND HUMAN

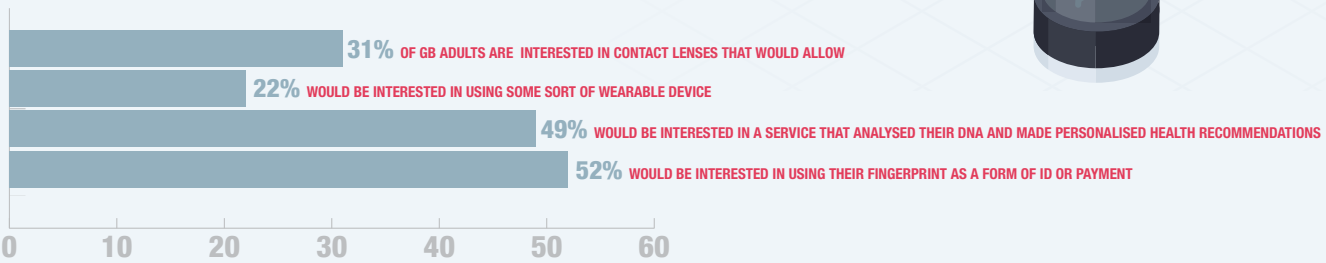
New technologies are becoming localised – and portable – and as a result the need to interact with anyone besides a specialist may be less necessary. The use of wearable technology has been growing steadily since 2013. While according to a survey of GB adults 11% have used some sort of wearable device, a great many more would be open to taking advantage of technological enhancements.

I have used wearable technology that connects to the internet (e.g a smartwatch, a smart wristband, Google Glass)



I would be interested in a service that analysed my DNA information to give me personalised health advice





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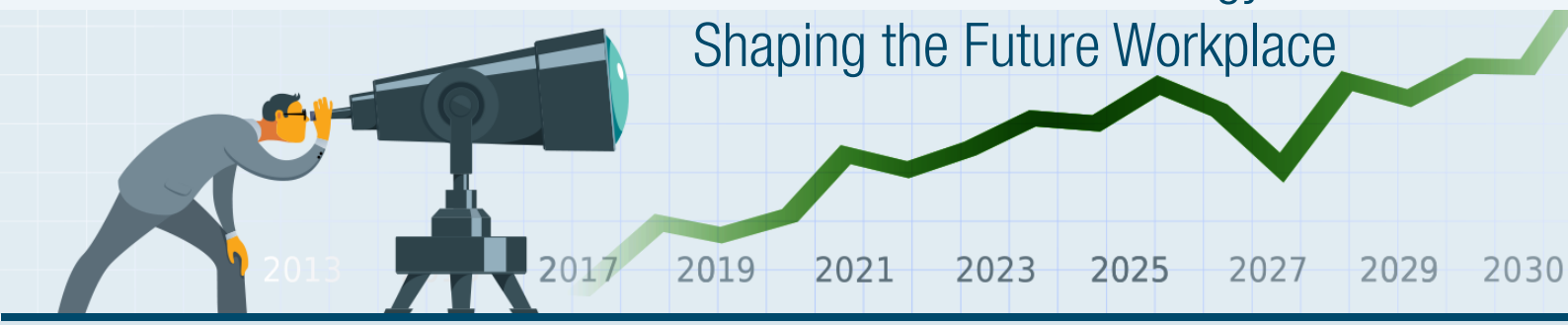


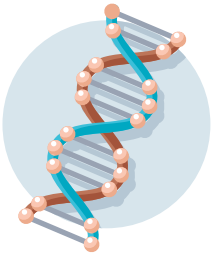
INNOVATORS IN HUMAN AUGMENTATION

Wearable welfare

Wearable devices can be used to help employers monitor their workforce's physiological habits and welfare – allowing them to ensure that they are providing the necessary levels of support. For the past few years, insurance group Aetna has been rewarding its employees for getting a full night's sleep. Participants can use a wearable device which syncs to the company's dedicated wellness platform and logs their sleep patterns – those sleeping over seven hours a night can earn small cash incentives. In 2016 close to 20,000 of the organisation's workforce were participating in the scheme.

Memory 2.0

Brain implants and memory enhancing augmentations are capable of improving the capacity of an individual's physiological and mental processes beyond the normal. In order for human to keep pace with machines, to collaborate with them and even compete, especially when it comes to processing information, it may become necessary for some workers to embrace implants. Theodore Berger, a biomedical engineer working at the University of California is working on a prosthetic memory implant. The device is surgically implanted in the brain which it stimulates with electric current to help the formation of memories.



Open Sesame

While wearable tech uptake remains fairly low, there are some who are taking it one step further in the form of implantable tech. Wisconsin based Three Square Market have trialled 'chipping' employees whereby a microchip no larger than a grain of rice is implanted into the hand. Employees can use the chip to open security doors, log on to computers and even purchase food and drinks.

Digital Ink

BioStamp is a digital tattoo developed by US firm MC10 which is capable of capturing a wide range of data. Stamped directly onto the skin it collects data on body temperature, hydration levels, UV exposure and more. A further step is an ingestible sensor which communicates with the wearable device. Currently this technology is showing great potential in the healthcare industry, where quantifiable data about a patient's wellbeing over time is invaluable. As with many of these technologies we are only just beginning to realise its potential.

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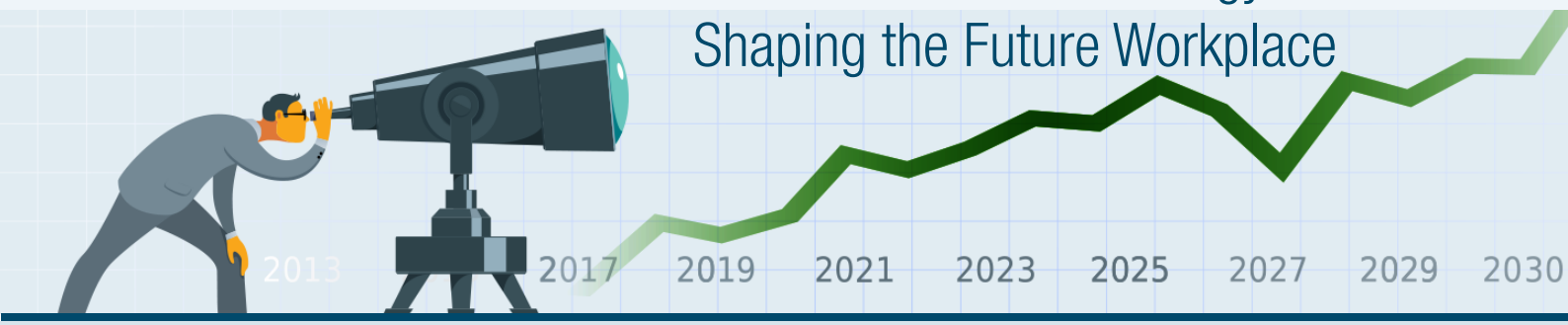
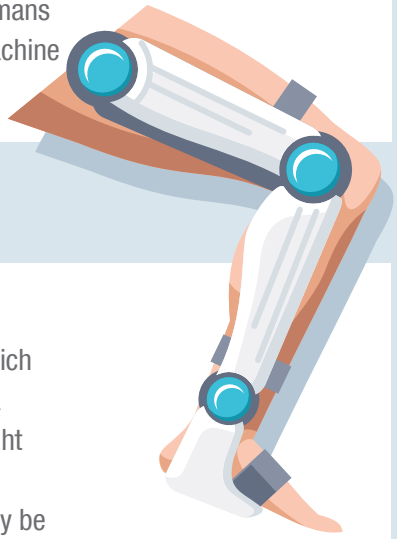


KEY IMPLICATIONS FOR THE FUTURE WORKFORCE

Augmenting to stay relevant

It may be necessary for some sections of the overall workforce to incorporate wearables or bio-enhancements to compete and collaborate with machines. With the advent of technologies such as machine learning and artificial intelligence, machines are making great strides and humans will need to keep up. Bio-augmentations could allow individuals to utilise the power of machine processing while engaging with fellow workers in a natural way.



Providing better working conditions

Biometrics, gatherable via wearables or implants, could allow companies to determine which circumstances favour which worker's preferences. Some workers may perform better at a certain blood glucose level, or at different times of the day, or even at different ambient light levels. By gathering this information companies will be able to tailor working conditions to support their employees to be at their very best. A new form of personalised efficiency may be developed by monitoring employee's vital signs and providing the optimum environment for

Ethical issues to overcome

The more technology we wear, implant or ingest the more of our information it is gathering. Inevitably there are going to be questions raised about how this information is stored and processed and to what ends. Organisations that encourage, and even mandate the uptake of these types of technologies must tread carefully. Individuals are already highly attuned to the sensitivity of their personal information and will require robust guarantees about the security of any further information they are willing to give up.