


What about You?

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Events Director, ISACA London Chapter**





Are you **ready** for the **future**?

ISACA_Nov_v1

ISACA LONDON CHAPTER EVENT AT KPMG 26TH NOVEMBER 2018

VIDEO 2A

Our Cyber Cultural Evolution

A convergence
of technology,
societal
acceptance
and regulation





Tasks **Change**



Jobs **Change**



Technology **Changes**



Exploring new solutions

<https://www.mckinsey.com/featured-insights/future-of-work>



Gartner Top 10 Strategic Technology Trends for 2019

October 15, 2018
Contributor: Kasey Panetta

TRENDS

Blockchain, quantum computing, augmented analytics and artificial intelligence will drive disruption and new business models.

Although science fiction may depict AI robots as the bad guys, some tech giants now employ them for security. Companies like Microsoft and Uber use Knightscope K5 robots to patrol parking lots and large outdoor areas to predict and prevent crime. The robots can read license plates, report suspicious activity and collect data to report to their owners.

These AI-driven robots are just one example of “autonomous things,” one of the Gartner Top 10 strategic technologies for 2019 with the potential to drive significant disruption and deliver opportunity over the next five years.

Intelligent



Autonomous Things



Augmented Analytics



AI-Driven Development

Digital



Digital Twin



Empowered Edge



Immersive Experience

Mesh



Blockchain



Smart Spaces



Privacy and Ethics



Quantum Computing

Intelligent



Autonomous
Things



Augmented
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AI-Driven
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Digital
Twin



Empowered
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Immersive
Experience

Mesh



Blockchain



Smart
Spaces



Privacy and Ethics



Quantum Computing

“The future will be characterized by smart devices delivering increasingly insightful digital services everywhere,” said David Cearley, Gartner Distinguished Vice President Analyst, at Gartner 2018 Symposium in Orlando, Florida.

“We call this **the intelligent digital mesh.**”

- **Intelligent:** How AI is in virtually every existing technology, and creating entirely new categories.
- **Digital:** Blending the digital and physical worlds to create an immersive world.
- **Mesh:** Exploiting connections between expanding sets of people, businesses, devices, content and services.

“Trends under each of these three themes are a key ingredient in driving a continuous innovation process as part of the continuous next strategy.”

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Quantum Computing

Trend No. 1: Autonomous things

Whether it's cars, robots or agriculture, autonomous things use AI to perform tasks traditionally done by humans. The sophistication of the intelligence varies, but all autonomous things use AI to interact more naturally with their environments.

Autonomous things exist across five types:

- Robotics
- Vehicles
- Drones
- Appliances
- Agents

Those five types occupy four environments: Sea, land, air and digital.

They all operate with varying degrees of capability, coordination and intelligence. For example, they can span a drone operated in the air with human-assistance to a farming robot operating completely autonomously in a field.

This paints a broad picture of potential applications, and virtually every application, service and IoT object will incorporate some form of AI to automate or augment processes or human actions.

Collaborative autonomous things such as drone swarms will increasingly drive the future of AI systems.

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Quantum Computing

Trend No. 2: Augmented analytics

Data scientists now have increasing amounts of data to prepare, analyze and group — and from which to draw conclusions. Given the amount of data, exploring all possibilities becomes impossible.

This means businesses can miss key insights from hypotheses the data scientists don't have the capacity to explore.

Augmented analytics represents a third major wave for data and analytics capabilities as data scientists use automated algorithms to explore more hypotheses. Data science and machine learning platforms have transformed how businesses generate analytics insight.

Augmented analytics identify hidden patterns while removing the personal bias. Although businesses run the risk of unintentionally inserting bias into the algorithms, augmented analytics and automated insights will eventually be embedded into enterprise applications.

Gartner predicts by 2020, more than 40% of data science tasks will be automated, resulting in increased productivity. Between citizen data scientists and augmented analytics, data insights will be more broadly available across the business, including analysts, decision makers and operational workers.

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Quantum Computing

Trend No. 7: Blockchain

Blockchain is a type of distributed ledger, an expanding chronologically ordered list of cryptographically signed, irrevocable transactional records shared by all participants in a network.

Blockchain allows companies to trace a transaction and work with untrusted parties without the need for a centralized party (i.e. a bank). This greatly reduces business friction and has applications that began in finance, but have expanded to government, healthcare, manufacturing, supply chain and others.

Blockchain could potentially lower costs, reduce transaction settlement times and improve cash flow. The technology has also given way to a host of blockchain-inspired solutions that utilize some of the benefits and parts of blockchain.

Pure blockchain models are immature and can be difficult to scale. However, businesses should begin evaluating the technology, as blockchain will create \$3.1T in business value by 2030.

Blockchain inspired approaches that do not implement all the tenets of blockchain deliver near term value but do not provide the promised highly distributed decentralized consensus models of a pure blockchain.

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Quantum Computing

Trend No. 3: AI-driven development

AI-driven development looks at tools, technologies and best practices for embedding AI into applications and using AI to create AI-powered tools for the development process. This trend is evolving along three dimensions:

1. The tools used to build AI-powered solutions are expanding from tools targeting data scientists (AI infrastructure, AI frameworks and AI platforms) to tools targeting the professional developer community (AI platforms, AI services). With these tools the professional developer can infuse AI powered capabilities and models into an application without involvement of a professional data scientist.
2. The tools used to build AI-powered solutions are being empowered with AI-driven capabilities that assist professional developers and automate tasks related to the development of AI-enhanced solutions. Augmented analytics, automated testing, automated code generation and automated solution development will speed the development process and empower a wider range of users to develop applications.
3. AI-enabled tools are evolving from assisting and automating functions related to application development (AD) to being enhanced with business domain expertise and automating activities higher on the AD process stack (from general development to business solution design).

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Quantum Computing

Trend No. 9: Digital ethics and privacy

Consumers have an growing awareness of the value of their personal information, and they are increasingly concerned with how it's being used by public and private entities. Enterprises that don't pay attention are at risk of consumer backlash.

Conversations regarding privacy must be grounded in ethics and trust. The conversation should move from “Are we compliant?” toward “Are we doing the right thing?”

Governments are increasingly planning or passing regulations with which companies must be compliant, and consumers are carefully guarding or removing information about themselves.

Companies must gain and maintain trust with the customer to succeed, and they must also follow internal values to ensure customers view them as trustworthy.



“humans enabled by machines”



<https://www.mckinsey.com/featured-insights/future-of-work>



VIDEO 3A



<https://www.mckinsey.com/featured-insights/future-of-work>



BELOW: 'DRONES & AI' – BCS NLB EVENT 20.3.2019
BEN EVANS [PWC], IAIN BECKINGHAM [CTO, INTEL UK]



'FUTURE OF MOBILITY' – BCS NLB EVENT 3.4.2019

INTELLIGENT CONNECTIVITY - 5G, AI AND IOT

DR MICHAEL SHORT CBE
DIT CHIEF SCIENTIFIC ADVISER





Skies without limits

Developments in drone technology are disrupting, innovating and shaping the commercial world.

With these developments comes the possibility to use drones to create a better future and help tackle some of the world's most important challenges.



£42bn

Increase in UK gross domestic product (GDP)

£16bn

In net cost savings to the UK economy

76,000

Drones operating in the UK's skies

628,000

Jobs in the drones economy



Joanne Murray
Senior Manager
PwC



@ScottAdamsSays

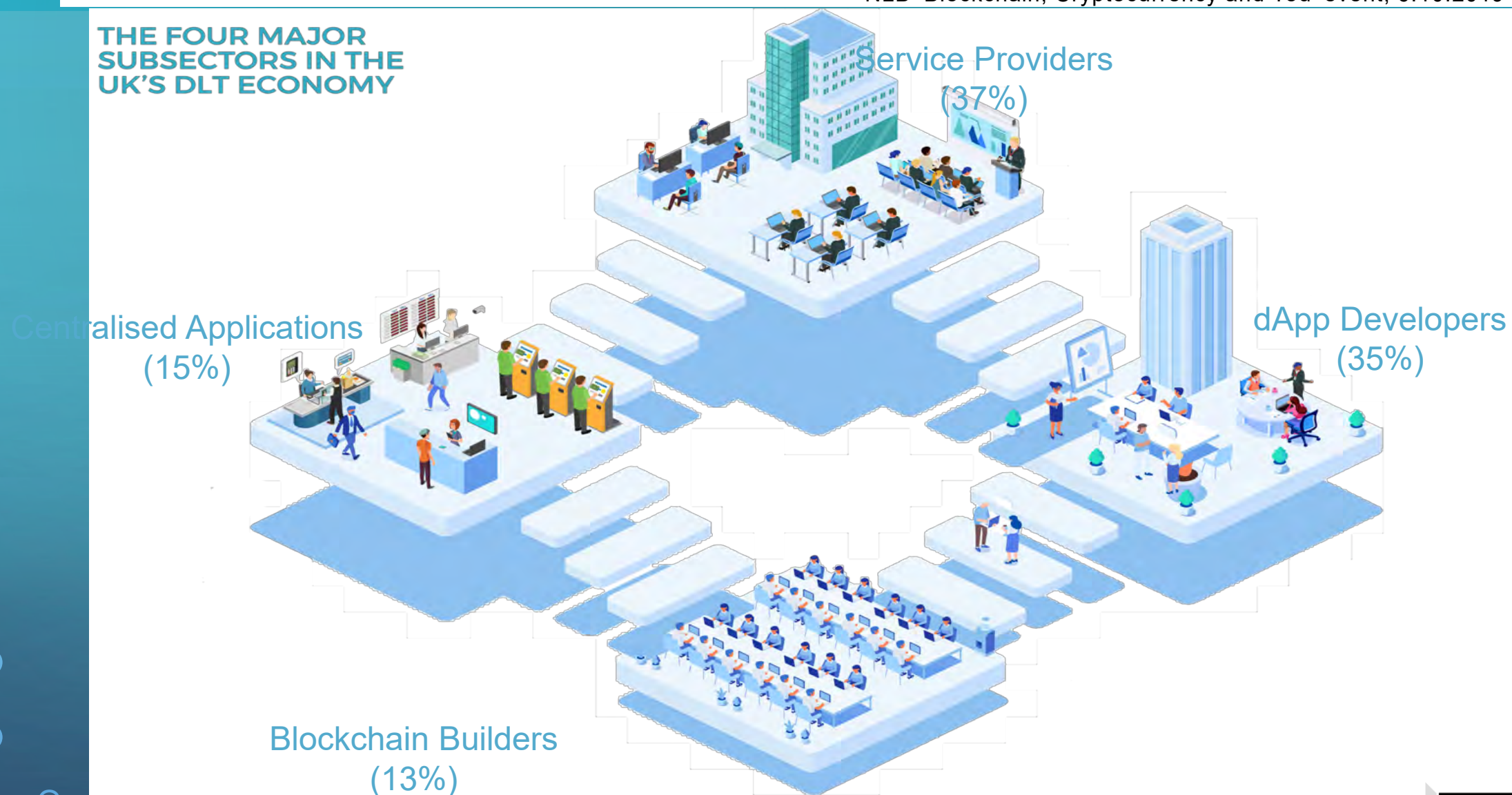
Dilbert.com

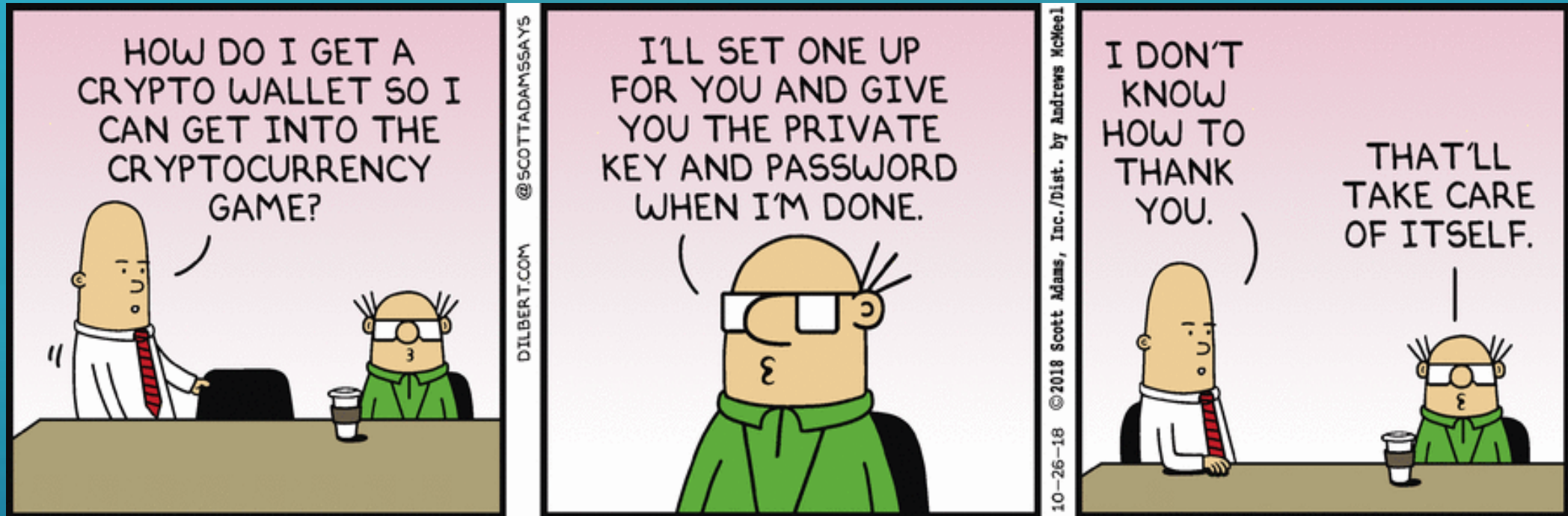


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THE FOUR MAJOR SUBSECTORS IN THE UK'S DLT ECONOMY





Blockchain & Crypto-Currency www.dilbert.com Friday October 26, 2018

TOP 10 RISKS FOR 2019

Risk Issue		2019*	2018 (rank)*
	1 Existing operations meeting performance expectations, competing against "born digital" firms	6.35	5.67 (10)
	2 Succession challenges and ability to attract and retain top talent	6.34	5.88 (6)
	3 Regulatory changes and regulatory scrutiny	6.24	5.93 (4)
	4 Cyber threats	6.18	5.96 (3)
	5 Resistance to change operations	6.17	6.00 (2)
	6 Rapid speed of disruptive innovations and new technologies	6.13	6.10 (1)
	7 Privacy/identity management and information security	6.13	5.83 (7)
	8 Inability to utilize analytics and big data	6.07	5.71 (9)
	9 Organization's culture may not sufficiently encourage timely identification and escalation of risk issues	5.99	5.91 (5)
	10 Sustaining customer loyalty and retention	5.95	5.57 (12)



Laura Moore
Associate Director,
Risk & Compliance
Protiviti

https://www.protiviti.com/site/default/files/united_states/insights/nc-state-protiviti-survey-top-risks-2019-executive-summary.pdf

INFORMATION SECURITY EUROPE 2019 EXHIBITION & CONFERENCE, LONDON - SOME TOPICS

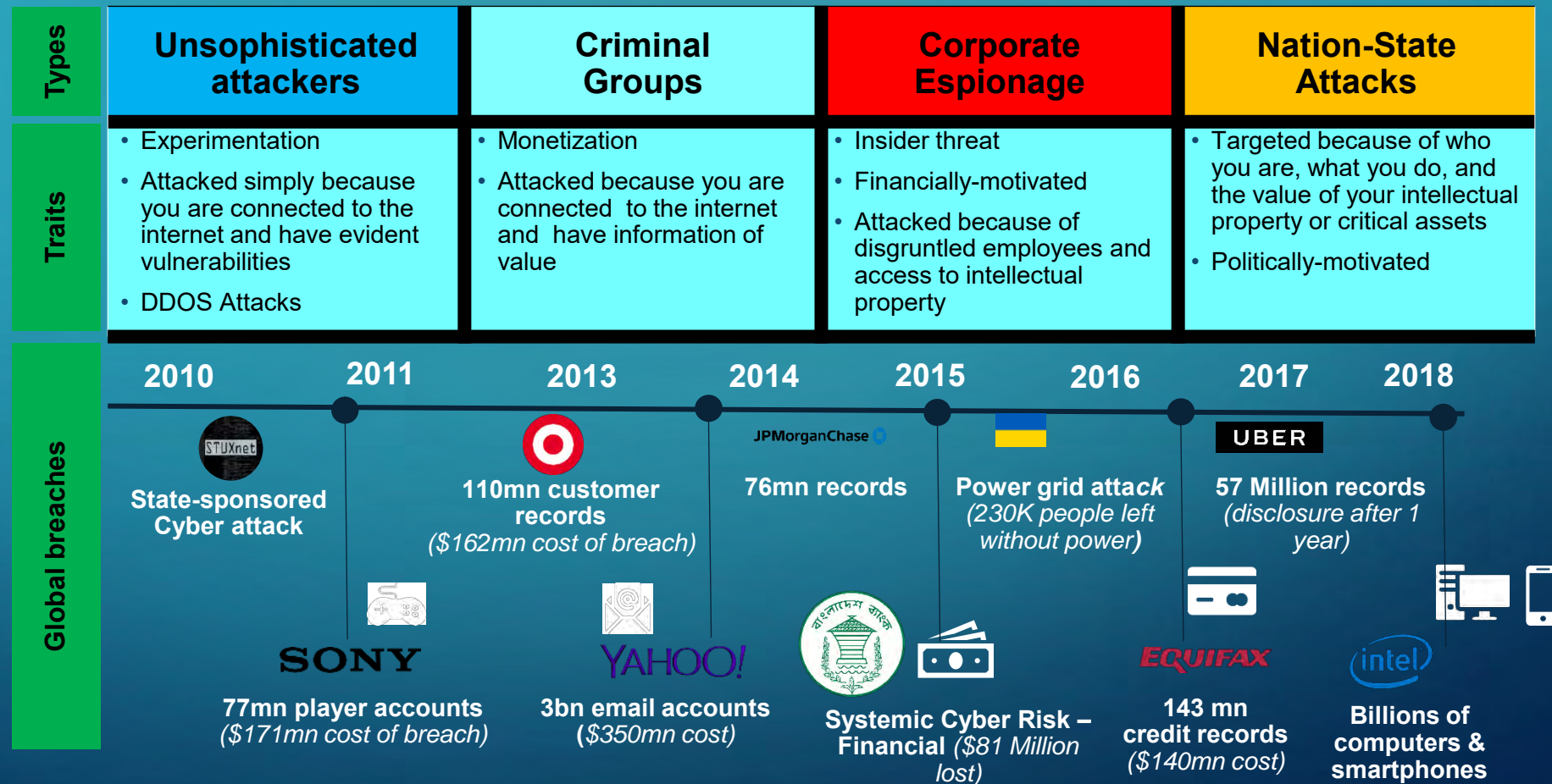
Anti-Malware Application Security	Automation AI & Machine Learning	Business Continuity Disaster Recovery	Incident Response SIEM
Compliance, Audit Legal Risk, PCI-DSS	Cyber Physical IoT, SCADA Security	Data Protection Database Security	Digital Forensics Fraud Detection
Encryption, PKI Blockchain, SSH, SSL	Human Factors Social Engineering	Identity Access Management Authentication, Biometrics, DRM	Internet Security Social Media Security
Managed Services Cloud Security, SaaS	Mobile Security BYOD, Tablet Security	Network Security Penetration Testing, Firewalls	Payment Security eCommerce
Risk Management Data Management	Education, Accreditation	Big Data, Analytics Unified Threat Management	Governance Cyber Insurance

DARK WEB – THE INTERNET AND MUCH MUCH MORE



From 'Deep Dark Web' presentation 2nd Nov 2018 at BCS North London Branch by Professor Claudio Cilli, President of ISACA Rome Chapter

EVOLUTION OF CYBERSECURITY THREATS





Agenda



Implementing a control framework like COBIT5 will help organisations govern and control their IT risk, helping to keep the organisation out of trouble and helping them improve how it operates



Methodology



Ways of working



How the business adopted



Accelerators and obstacles

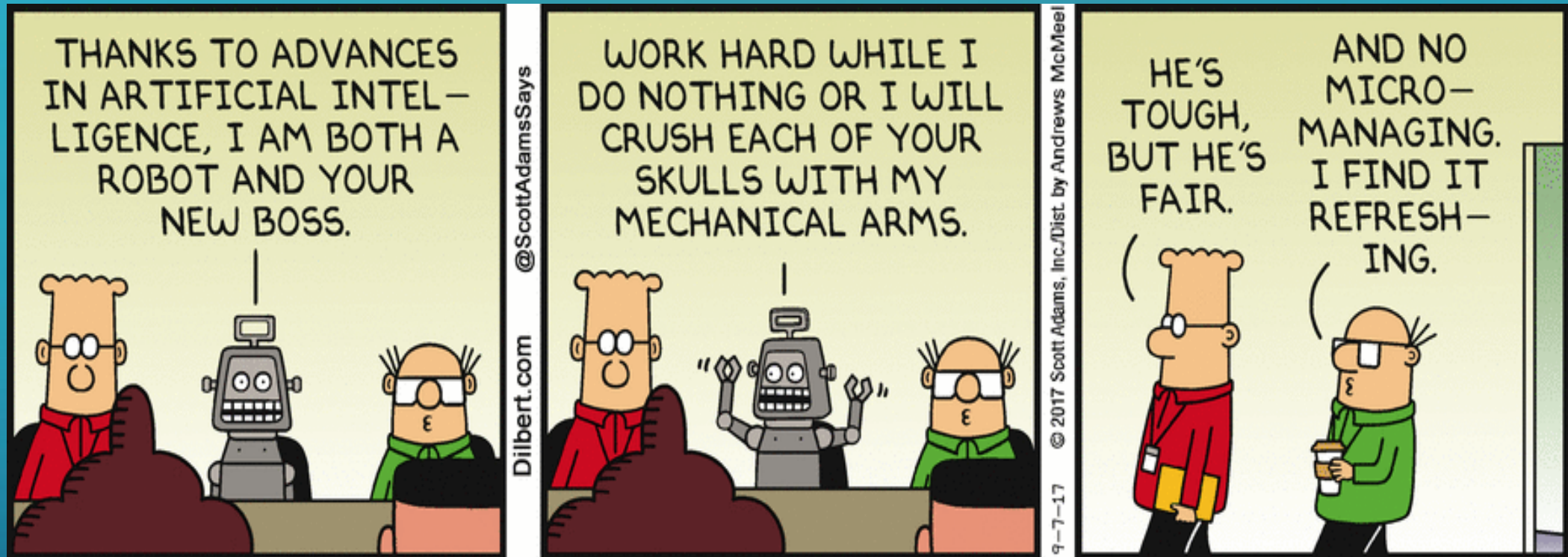


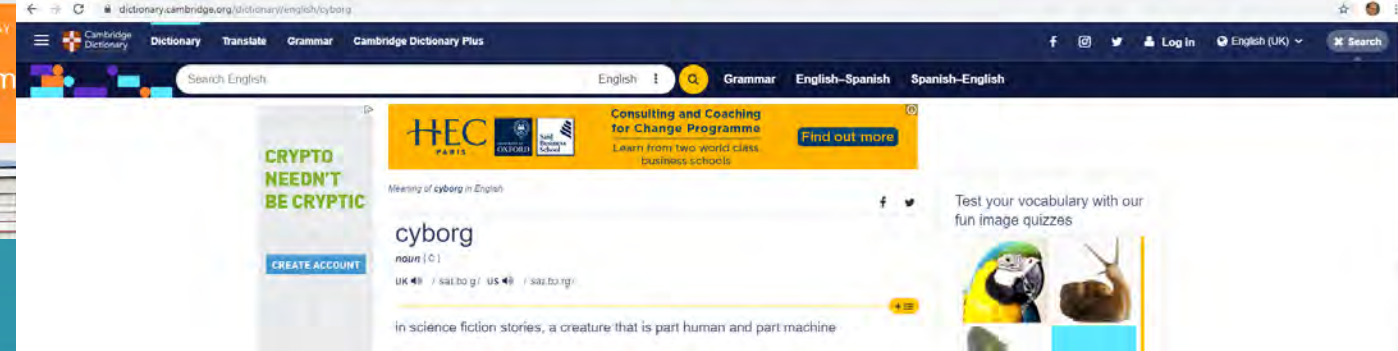
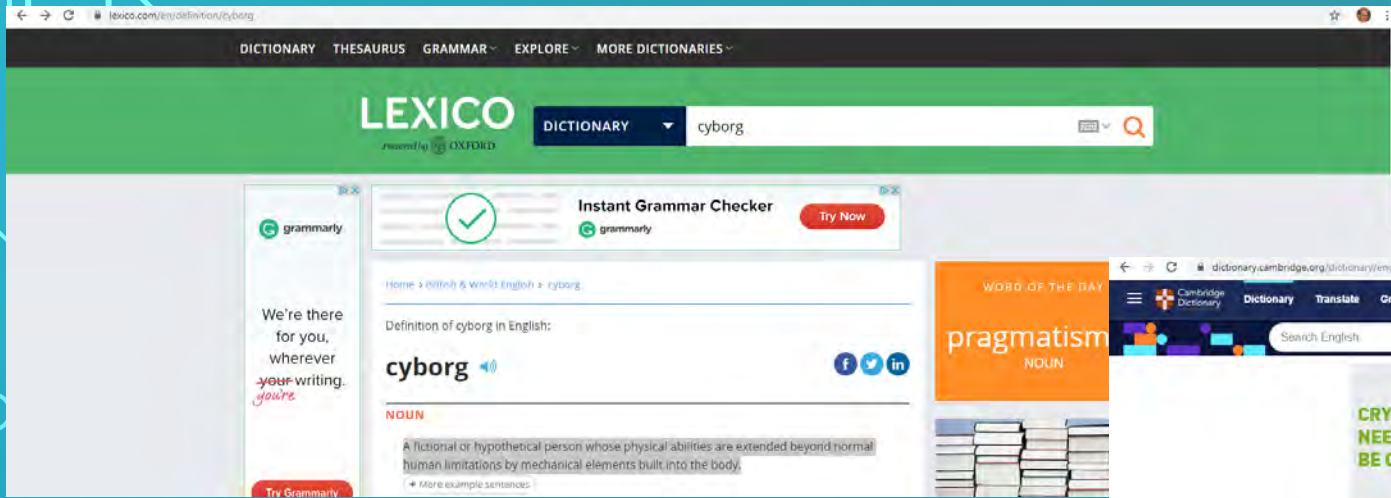
Anelle Khaidargaliyeva
Manager - Technology
Risk - Corporates
KPMG UK

WITH THE TREND FOR AUTOMATION GATHERING PACE, WILL IT MEAN THAT OUR “COLLEAGUES” WILL BE ELECTRIC IN THE FUTURE?



- The answer is yes but there will also be many new creative, STEM, and knowledge-based jobs.

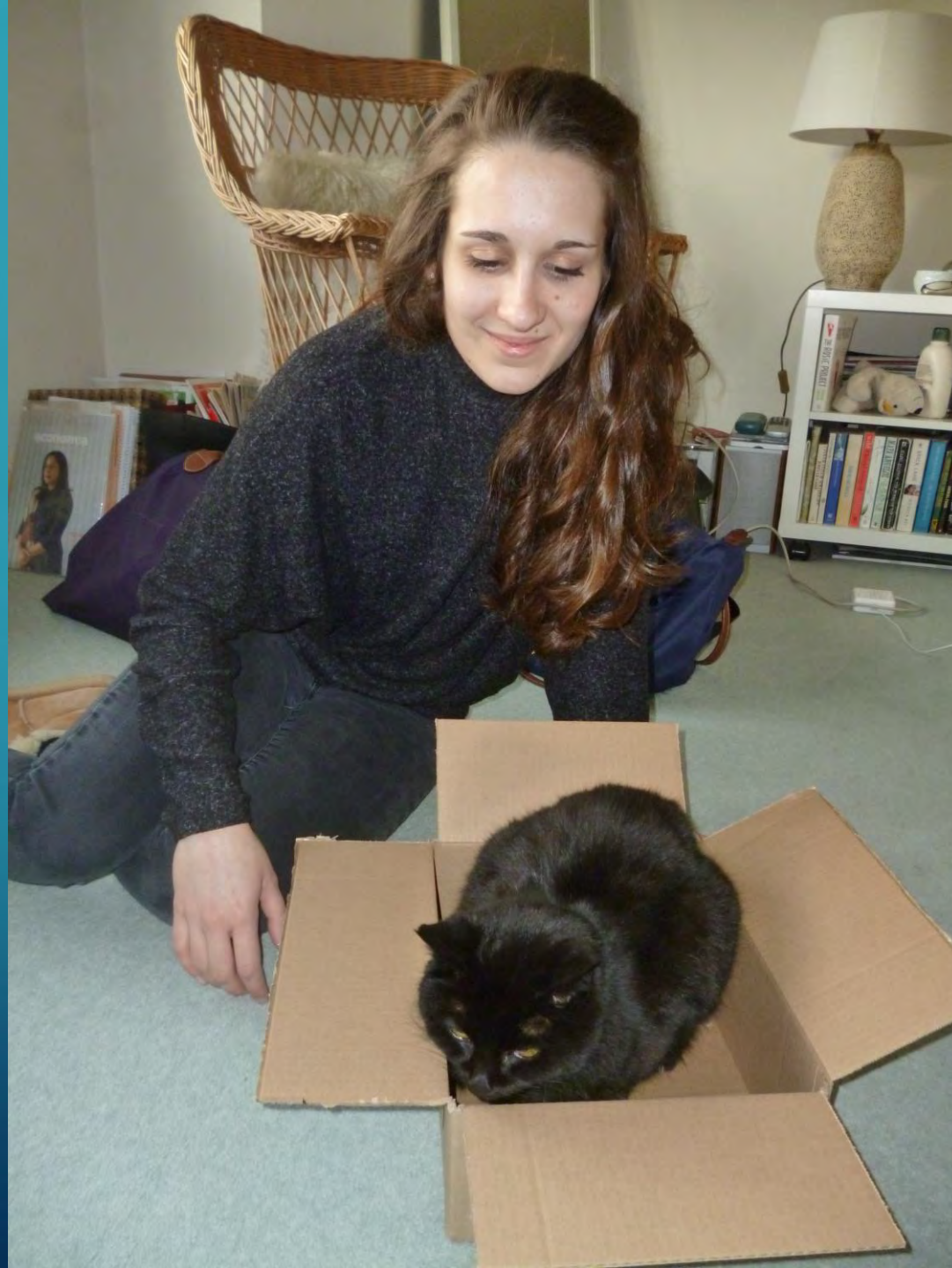




Need help? – how about a cyborg?

Oxford Dictionary: Cyborg – “A fictional or hypothetical person whose physical abilities are extended beyond normal human limitations by mechanical elements built into the body.”

Cambridge Dictionary: Cyborg – “in science fiction stories, a creature that is part human and part machine”





McKinsey
& Company

McKinsey Global Institute

'Tech for Good': Using technology to smooth disruption and improve well-being

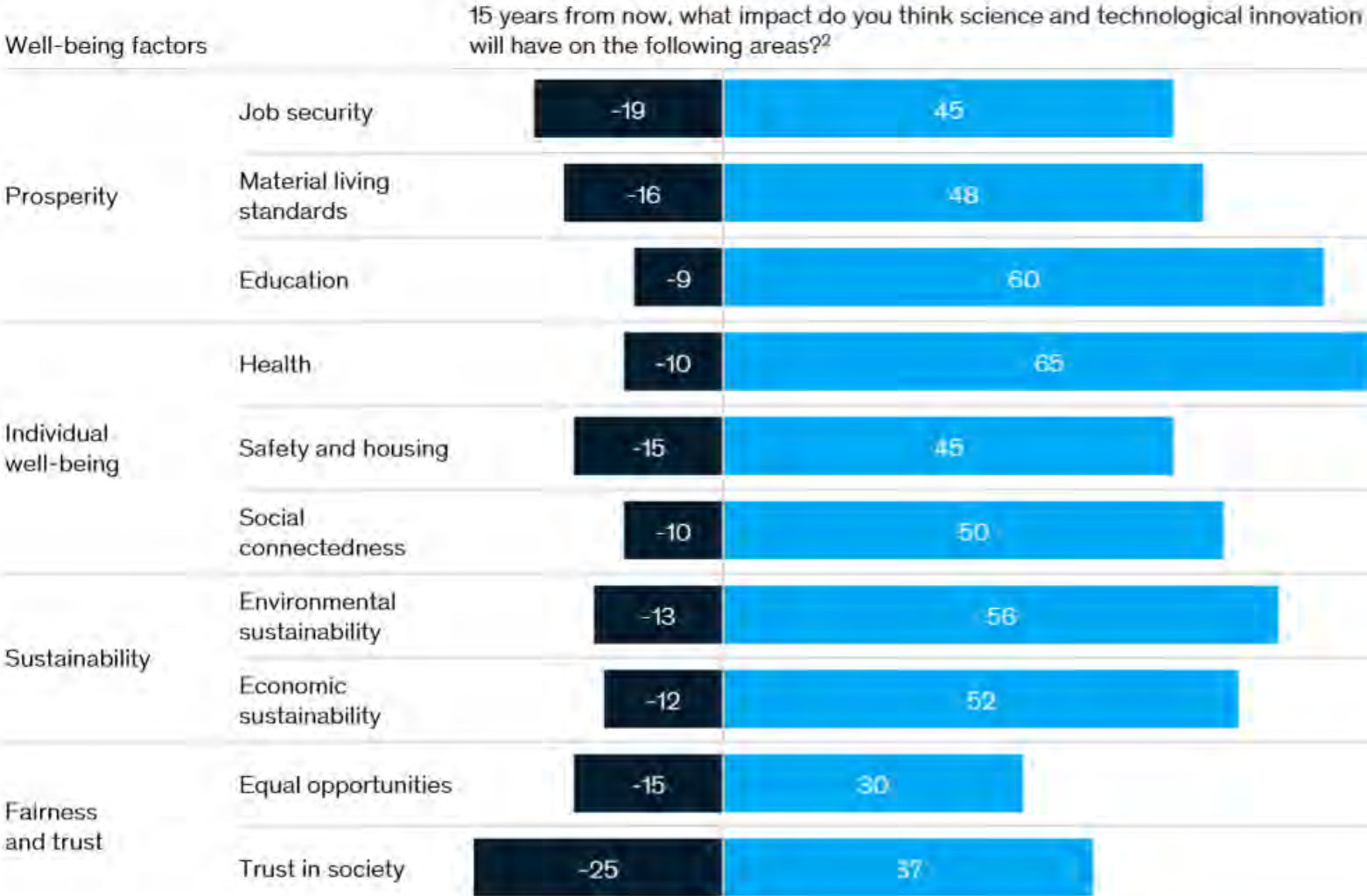
May 2019 | Discussion Paper



People's expectations of the future impact of technology are broadly positive, but with particular concerns around jobs, wages, safety, equality, and trust.

EU-28,¹
%

■ Negative impact ■ Positive impact



Technology permeates every aspect of society and is an important instrument of change.



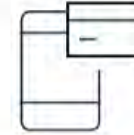
2.5B

smartphones
in the world



2.3B

active social media
users globally



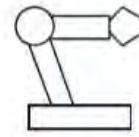
51%

of payments
made digitally



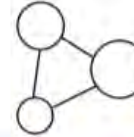
47%

penetration of mobile internet,
projected to reach



>2M

industrial robots,
will grow to



9.1B

Connected IoT devices,
expected to exceed

10101
01010
10101
01010

>90%

of internet data was generated
over the last 2 years

61%

by 2025

>4M

by 2025

\$25B

total value of IoT technology
by 2025

>5x

expected growth
by 2025

Source: *Why digital strategies fail*, McKinsey & Company, March 2018; GSMA 2019; Domo; IDC; McKinsey Global Institute analysis

McKinsey
Global Institute

Tech for Good

Smoothing disruption, improving well-being

Discussion paper
May 2019

Authors

Jackson English, Brussels
Eric Hansen, Paris
Sara Miles, London
Klemens Martin, Copenhagen
James Meredith, San Francisco
Paul Erik Spill, Paris
Vivek Singh, London

Three technology categories have significant potential to improve key areas of well-being.

Based on positive use cases of technology,
Total number of use cases = about 600

Potential impact¹

Low



High



Technologies with highest potential impact

Six deep-dive themes

Technology category	Job security	Material living standards	Education	Health	Equal opportunities	Environmental sustainability
Data and AI	High	High	High	High	High	High
Connectivity and platforms	High	High	High	High	High	High
Robotics	Low	Low	Low	High	High	High
IoT	Low	High	Low	High	Low	High
Augmented reality	Low	Low	Low	Low	Low	Low
Digital fabrication	Low	Low	Low	Low	Low	Low
New materials and biotech	Low	Low	Low	High	Low	High
Clean tech	Low	High	Low	High	Low	High

¹ Potential impact assessed as relative number and impact of use cases; use cases involving several technology categories counted in each relevant category

Source: McKinsey Global Institute Technology for Good use-case library; McKinsey Global Institute analysis

McKinsey
Global Institute

Tech for Good

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Discussion paper

May 2016

Authors

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Yves D'Amboise, London

	Job security	Material living standards	Education	Health	Equal opportunities	Environmental sustainability
Data and AI	AI augmentation complements employee skills, eg, in front-line customer-service roles	AI chatbots help immigrants navigate the immigration process in the US AI can advise the vulnerable in financial decisions, eg, on pay-day loans	Intermediated revival education uses AI to build personalized journeys and improve learning outcomes Virtual facilitators help teachers to adapt curriculum to student needs	AI-driven drug discovery and tests can reduce time and cost by 4- to 5-fold AI-powered diagnosis tools improve accuracy, eg, risk of breast cancer in histopathological images	Speech generating devices (SGD) help people with speech disorders AI can reduce discrimination in recruiting, by surfacing biases	AI and IoT power automated traffic optimization helping to reduce emissions AI-driven reverse logistics infrastructure improves product sorting and recycling



Connectivity and platforms

Career orientation and job matching systems can reduce job search times by 40–50%

Digital cloud-based work-spaces complement geographic mobility

Digital portals simplify access to public services

Food-donating applications help match food-insecure with donors

Digital support and nudging systems reduce administrative burden on teachers

Tablet-based learning improves results and decreases distress for students with dyslexia

Maternal health applications and SMS platforms provide assistance to women in developing countries

Inclusive digital tech communities can reduce “insider-outsider” dynamic

Digital platforms for disabled travelers provide better access

Public waste-tracking platforms can detect illegal waste dumping in real-time

Second-hand market places reduce waste by extending life-span of goods



Robotics

Robotics helps to shift human labor to high-value work, e.g. from data gathering to data interpretation

Autonomous drones can be used in agriculture to reduce costs of e.g. screening

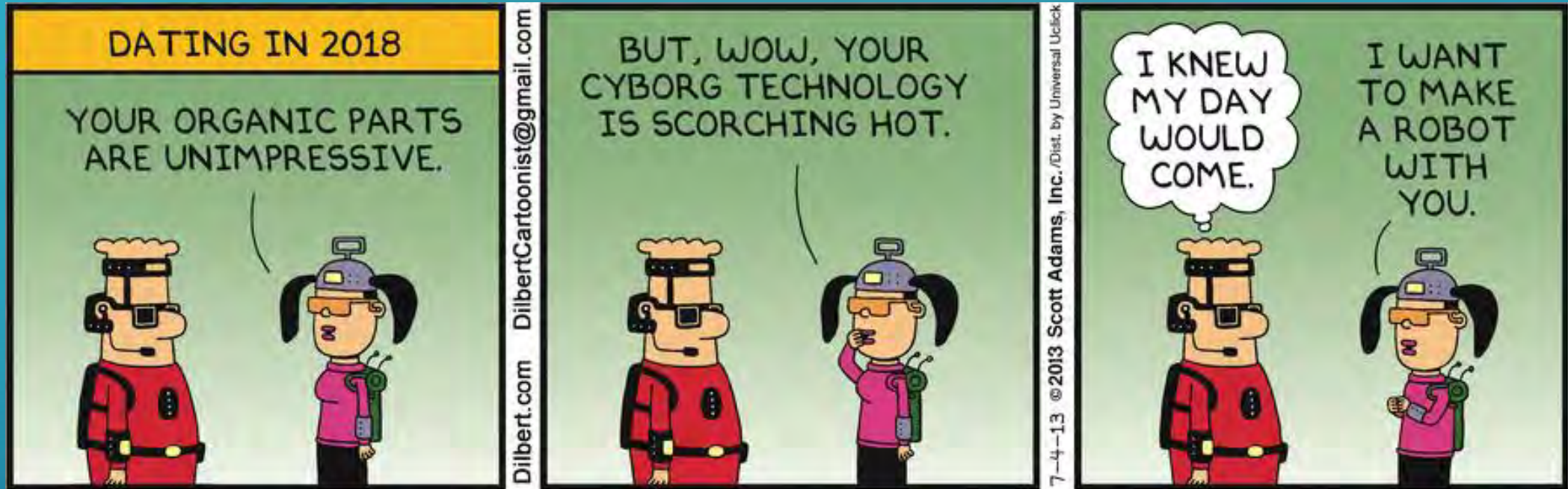
Automated grading allows schools to replace standard tests with more complex tasks
Automation of admin tasks frees up time and resources for educational professionals

Robotic surgical devices controlled by a human can enable surgeons to perform surgery remotely

Exoskeletons empower disabled people in their everyday life
Semi-autonomous vehicles increase mobility of people with deafness and blindness

Robotic disassembly of electronic components supports end-of-life recycling of products
Autonomous vehicles could help reduce carbon emissions and fuel consumption by up to 10–20%





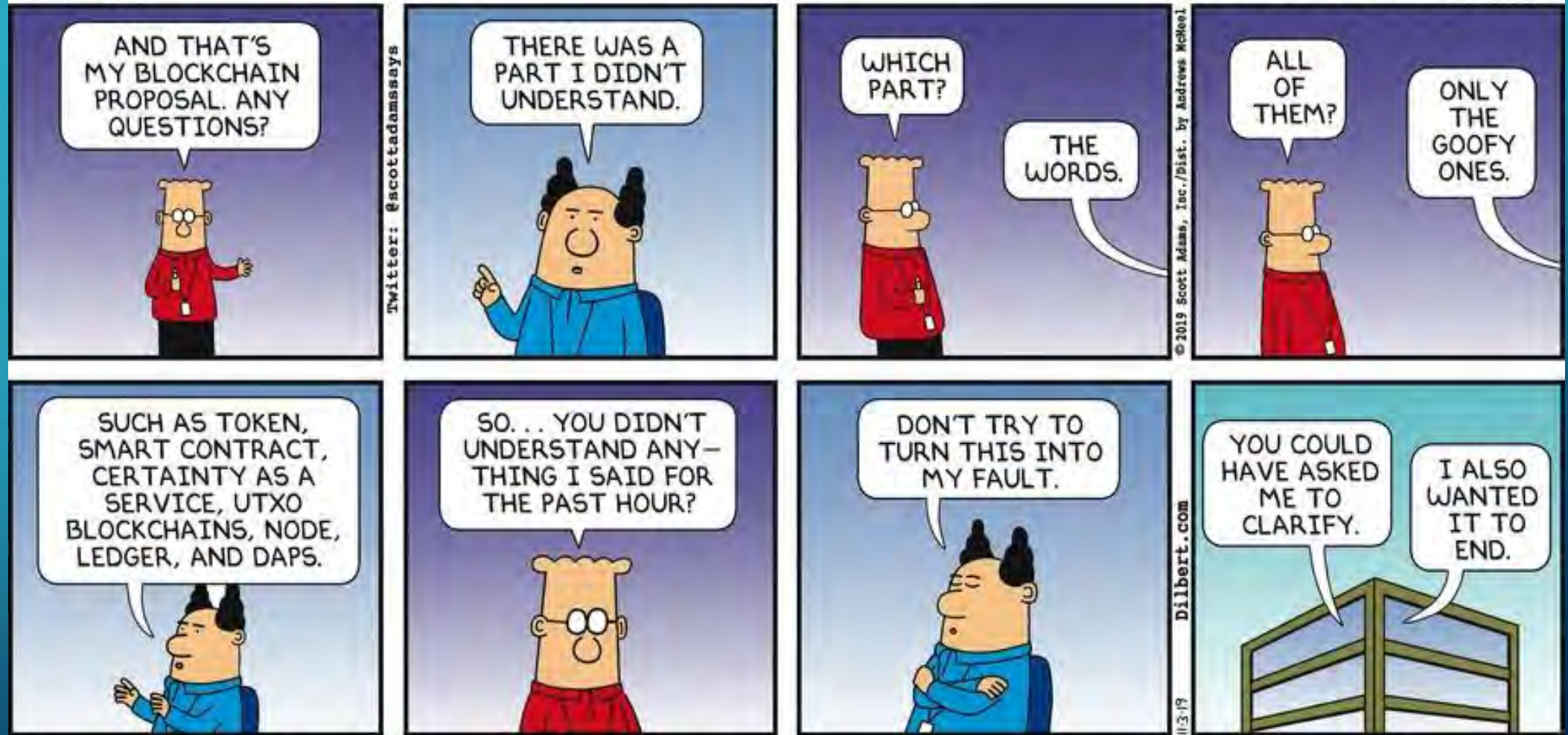
What about You?

1. What IT-related advances do you expect 2020-2022?
..in technology, environment, services, skills [incl. ethics, law...]?
Good for society? Or bad?
2. Cyborgs - good or bad?
..Could you be a cyborg?



DILBERT

BY SCOTT ADAMS



Blockchain www.dilbert.com Sunday November 03, 2019

VIDEO 1C, 3B, 3D, 4A, 4B, 4C, 5A, 5B