



AMNICK

CITY PULSE

SMART CITIES, ENVIRONMENT, TECHNOLOGY,
CYBER SECURITY, TRANSPORT AND INNOVATION

Vol. 3 - Summer Edition

MAGAZINE

News Bites

Technology
3 New Covid
Tech Gadgets

Shifting Patterns

Safety and
Social Exclusion
- Interview with
Jennifer Terry
Assoc. Director
Amnicks, USA

The Future of Jobs

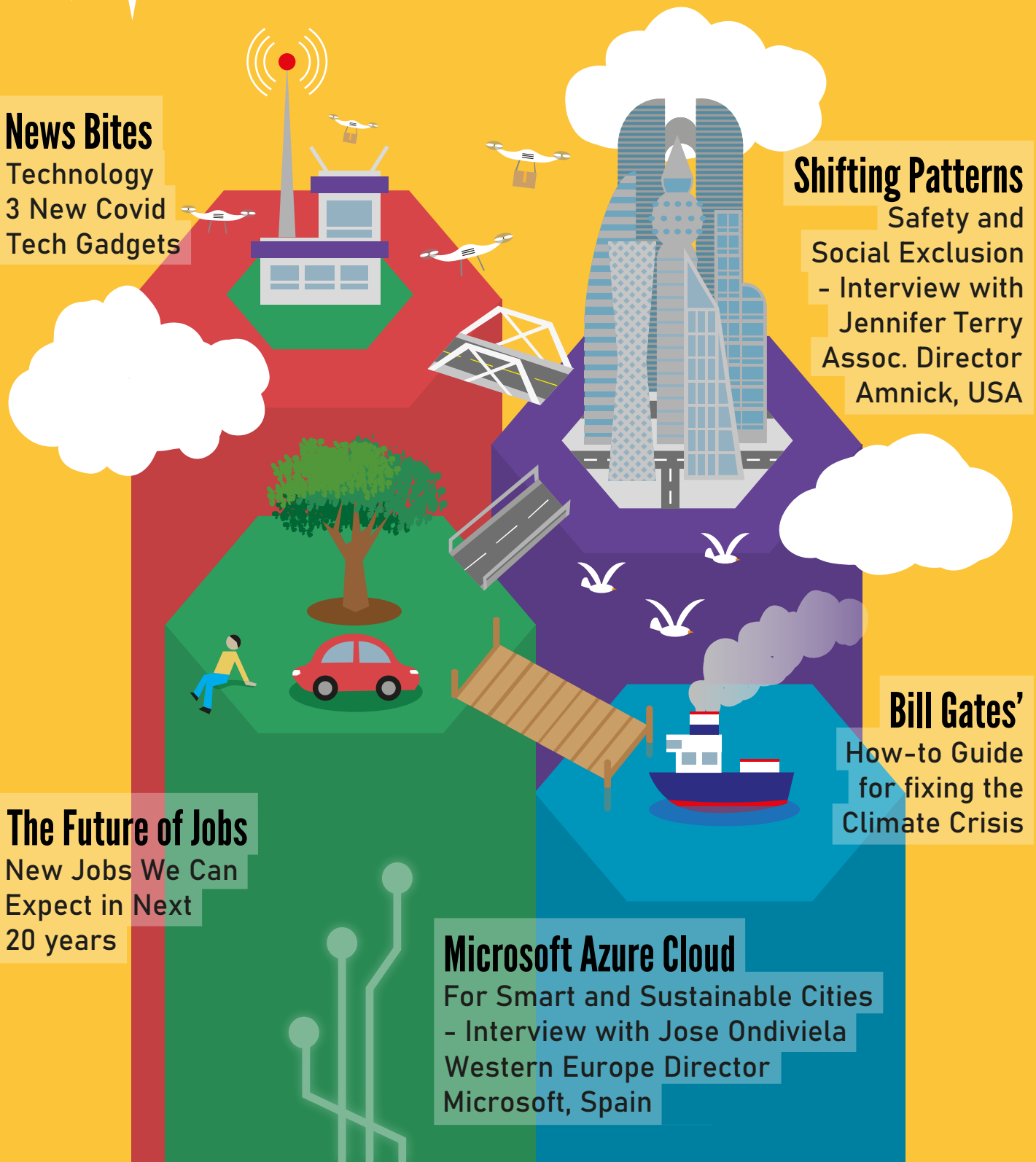
New Jobs We Can
Expect in Next
20 years

Bill Gates'

How-to Guide
for fixing the
Climate Crisis

Microsoft Azure Cloud

For Smart and Sustainable Cities
- Interview with Jose Ondiviela
Western Europe Director
Microsoft, Spain



Amnick International Collaboration Team

Our group is made up of City leaders, Mayors, 110 tech companies- including Microsoft, Cisco, IBM, Universities, etc.

We have come together under this umbrella to collaborate jointly with cities, businesses, municipal authorities. Through this arrangement, we are now meeting 3 times a year to address a range of city issues we have commonly:

- Environment
- Technologies
- Smart Cities
- Economic growth
- Transportation

With these amazing resources at our disposal, we now have specialist teams to support your needs in the above areas.



This means, using our International Team we can immediately provide you the following services commercially:

- Strategy
- Sustainability
- Productivity/Performance
- Social Innovation
- Future proofing
- Technologies (AI, IoT, IIoT, 5G, Blockchain)
- Commercialisation
- Reduce costs
- Efficiencies

We specialise in: Technologies (AI, Cyber, IoT, Digital Transformation), Education, Housing, Health, Transportation, Environment and Smart Cities.



EDITOR'S note

Welcome to our latest edition of
City Pulse Magazine



John David

CEO and Founder of Amnick Social Enterprise
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The focus of our magazine is Smart Cities, Environment, Technologies (AI, IoT, Digital), Innovation, Transportation, Cyber Security.

Our magazine is primarily a community-based magazine, written largely by ordinary people from across the world and with input from:

- Research Institutes
- Book writers
- Universities
- Industry experts
- Politicians
- City leaders

In this edition we cover:

- Interviews
- Articles
- News stories
- Features

We are keen to feature issues, challenges, opportunities, and challenges facing cities, communities, businesses, and individuals globally.

The impact of Covid-19 has affected all above areas. We need to start to develop a new normal, readjust our previous thinking, forecasts, and expectations. We are now starting to see new behaviours in travel, work environment, the way we interact with each other.

This edition also features great interviews from our International Collaboration leaders including Jennifer Terry, Pam Turton and Jose Antonio Ondiviela.

Our International Collaboration Team are made up of city leaders, mayors, tech companies, universities, and businesses globally. And through this amazing team, we can offer following services:

- Consultancy
- Training
- Project and Programme Management
- We can fix your challenging projects
- Investment

In the areas covered in this edition.

C O N T E N T S



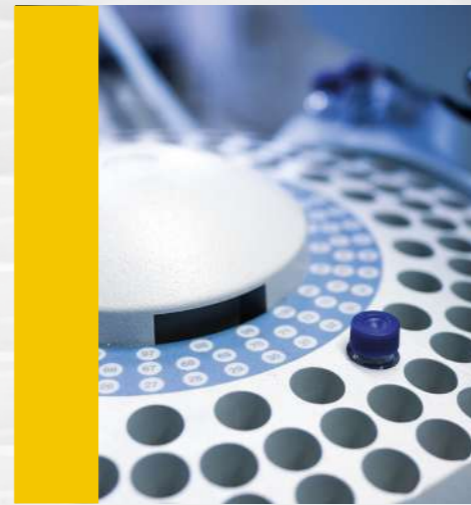
CYBER SECURITY

- 5** Exploiting the System: How We Are Learning From Our Malware Mistakes
- 7** News Bites: Cyber Security ■
- 9** Podcast Review - The 433 Security Simplified ●●
- 11** Blockchain Technology: Foreshadowing the impending cyber defence? ▲
- 13** The InSecurity Podcast ●●



ENVIRONMENT

- 15** "GCA China": How it shares expertise to adapt to climate change ▲
- 19** Environmentalist Agenda Hopes For Future Prospects - Interview With Bob Massey ■
- 21** Emergency on Planet Earth? ★
- 25** The One Doughnut That's Actually Good For Us ▲
- 29** Bill Gates' How-to Guide for fixing the Climate Crisis ●
- 31** Smart Cars: Some Heroes Come With Four Wheels, Not Capes ▲
- 33** News: Changes In Energy Importation And Creation Will Change Our Generation ■
- 35** Copenhagen Solutions Lab: Where Green is Good and Solutions are Always Creative ▲



INNOVATION

- 37** The Stanford Innovation Lab - Podcast Review ●●
- 39** Robotic Teachers: Here to help not take over ▲
- 41** Innovation News ■
- 43** The Future of Jobs
- 45** Emperor's Renewable Clothes: From plant-based to spider DNA, this is the fabric of our future ▲



SMART CITIES

- 47** Microsoft Azure Cloud for Smart and sustainable Cities - Interview with Jose Antonio Ondiviela ■
- 49** Feminist City - Podcast Review ●●
- 51** Smart Homes: What's in it for us? ▲
- 53** Smart Cities: Emerging Technologies, Trends and Innovations ●●
- 55** News Bites: Smart Cities ■
- 57** Singapore - The Emergence of a Smart City



TECHNOLOGY

- 59** No Parking Podcast: Dyslexia, Reading Difficulties, and the Reoccurring Coincidence of Success ●●
- 61** News Bites: Technology ■
- 63** Investment: Brain Implants Shift Science Fiction Into Science Fact ▲
- 65** Future Thinkers Podcast Review: Episode 32 - Aric Dromi - Smart Cities of the Future ●●
- 67** Survival of the Fittest ★
- 69** Direct Energy Weapons, Leading Battlefield Science into the Next Century ■
- 71** The Rise of the Human Microchip ▲



TRANSPORTATION

- 73** Shifting patterns, Safety and Social Exclusion - Interview with Jennifer Terry ■
- 77** Intelligent Transport Podcast - Episode 13 ●●▲
- 79** News Bites: Transportation ■
- 81** Co-mobility Hubs: Sharing is Caring for a Carbon-neutral World ▲
- 83** Efficient, Safe, Reliable Buses Keep the Doctor Away ■

KEY ICONS

- News
- Review
- ▲ Feature
- Podcast
- Interview
- ★ Guest Feature

ADVERTISEMENT

- 76** VU.City
- 87** Call for Contributions: Corporate Social Responsibility and Covid-19 Pandemic in Global Health Services
- 89** Adverts

Exploiting the System: How We Are Learning From Our Malware Mistakes

You know what malware is, right? For most of us, it manifests as the kind of bad day that starts with clicking a hyperlink we shouldn't have. Sometimes we have money stolen; in other cases, governments have data robbed.

On the 8th of December 2020, the software company SolarWinds was revealed to have been hacked, a breach that had occurred as early as September 2019. Malicious code, or malware, had been put in place for months, undetected in software updates that had infiltrated some 18,000 customers – ranging from large businesses to the US Department of Homeland Security.

5 The blowback was astronomical. Nobody knows how much data was stolen; nobody knows how much money could be sold down the line. At this point, no-one knows how it got into SolarWinds' systems. The question is this: How can we work in a digitalised world when leading companies are oblivious to the dangerous waters they swim in? Many answers have been set up, a large majority of them reactionary – but perhaps the most revolutionary comes from the oldest source.

Greg Touhill saw the writing on the wall for a long time. He was the U.S government's first Chief Information Security Officer (CISO) and had been pushing for a massive overhaul of the cyber system. When the breach was reported, he was not surprised unlike US Cyber Command – he was ahead of the curve. Now that such a breach has occurred, his suggestions are now on the table.

One of them is implementing a "zero trust" system in enterprises. This would mean that every device that accesses a system is immediately treated as a foreign entity and must provide extra verification on top of a password (you may notice this via 2-factor authorisation, where a number is texted to your phone after you input your password).

Secondly, each user is given access to information on a least-privilege basis. Put simply, you work with data that is on your paygrade.

'At this point, no-one knows how it got into SolarWinds' systems'

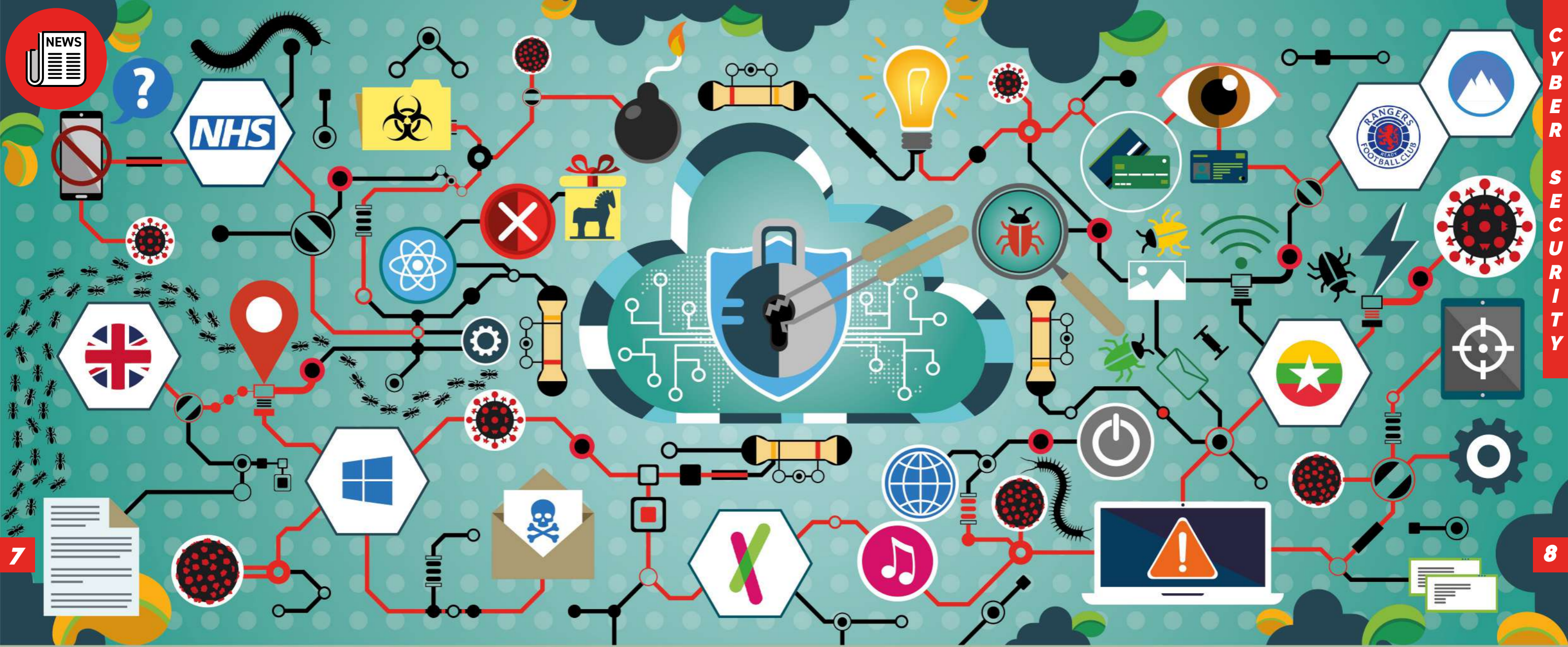
Thirdly, and most importantly, is the application of microsegmentation, which is a security feature whereby a cluster of relevant data is separated into files that require separate authorisation to access (think of it like one of those decompression chambers in sci-fi movies). In professional terms, these last two points are collectively defined as a Software-Defined Perimeter (SDP).

SDPs have been on the cards for a long time. Indeed, it was designed 14 years ago by the Defence Information Systems Agency. It hosts a lot of positives, most notably the fact that access is guaranteed on a user-to-user basis, not on a system's access to a network. Secondly, its setup ensures that it is essentially hidden from the Internet and so impossible to attack from DDoS or Ransomware attacks – part of criminal hacking that accounted for 45% of all data breaches in 2020.

Although it protects against a large amount of phishing software, its chief difficulties come from its application by users – human error from not applying DMARC to subdomain emails or simple failures to apply DKIM measures. The list goes on. Therefore, although it is an additional security device, it is a basic one that requires scrutiny.

Another thing that has been suggested is Domain based Message Authentication, Reporting & Conformance (or DMARC for short). How this works is that it demands that emails pass two email authentication checks (SPF and DKIM). If it doesn't pass these authentications, then the email is either quarantined, rejected, or let free.

In conclusion, the SolarWind scandal has revealed many deep flaws in the software that we use on a day-to-day basis. Everyone, whether they be a person or a corporation, is left open to attack due to the inefficiencies of our cyber security systems. If security is to be promised to us in an increasingly computerised world, then we first have to promise to cyber security that we are who we say we are.



7

8

News Bites: CYBER SECURITY

23andMe Data Fears After Partnership with Richard Branson

Users of the popular ancestry and DNA testing website 23andMe have expressed concerns over their data's privacy after the company went into a public partnership with Richard Branson, founder of Virgin Groups. Fears over users' information being accessed by Virgin, sold on to other companies or being breached in a cyber security attack are worries that are yet to be addressed by the company.

Microsoft Calls For Global Initiative to Deal with Cyber Attacks

Microsoft's security team have issued a Q&A in relation to the company's objectives following the widespread cyber security attacks, often referred to as 'Solarigate', last year (2020).

Not only has Microsoft addressed concerns that their own products such as Microsoft Office were breached as part of the attacks, the company has also called for "unified response of defenders across public and private sectors" in order to prevent similar cyber security breaches happening in the future.

Myanmar, Cyber Security and Human Rights Violations

There have been growing concerns nationally and internationally following the Myanmar junta's proposal of a new cyber security bill. If imposed, the junta will have strict control over its citizens; internet and security details. Outside sources have questioned the legitimacy of the bill and its implications on the citizens of Myanmar's human rights.

NHS Digital, COVID-19 and Cyber Threats

The NHS has released online support documents, highlighting the rise in cyber security attacks pretending to be the NHS in relation to Covid-19 vaccines. These documents include how they plan to combat those exploiting the pandemic for their own malicious gain.

Rangers Partner with NordVPN

NordVPN, the private network service provider, is now a partner for the Scottish team during the 2021-2022 season. With joint aims from NordVPN and Rangers to "bring about more awareness of cyber security and its importance", the goal is that fans can watch games without worrying about how their internet data is used.

English School Children's Brush with Malware

The English government's initiative to provide children with laptops for home-schooling during lockdown has hit a roadblock. A number of laptops have been found to be infected with malware that were given out to schools to help children who suffer from the digital divide. How, why and how many have been affected are questions that have still not been addressed by the English government.

Written by: Ellen Lamb
Title: Writer, Amnick
Designed by: Jonathan Oke



Podcast Review

The 433 Security Simplified



The 433 Security Simplified podcast is brought to you by Watchguard. Found on their Secplicity site, it looks to offer information and solutions to its users in an entertaining, easily digestible form, that they can make use of in the real world. With a new episode each week these expert white-hat hackers', the good guys of the hacking world, will help you make the best choices on your digital journey.

The latest episode brought to you by Marc Liberte and Corey Nachreiner covers two areas. The first part covers research from Avast, looking into malicious Chrome extensions and the nefarious things they get up to. They discuss the dangers that people expose themselves to by granting certain permissions to the extensions without actually taking time to see what they are.

By doing this, the malware can cause all sorts of havoc such as controlling other extensions, forging results in google searches, and creating requests for personal information. These all happen without you knowing.

Furthermore, if you are a little bit more tech savvy and notice some odd things happening, the malware can now take steps to evade your investigations.

"The practical tip" as Nachreiner puts it, is to read the fine print, be aware of the permissions you are giving to these pieces of software and save yourself from a lot of trouble.

The second part discusses the steps that "statebacked entities" had taken in their attempts to hack western cyber security organisations. Through the use of fake Twitter accounts they were able to hoodwink some of these organisations and hack them. Not even the professionals are safe, it seems.

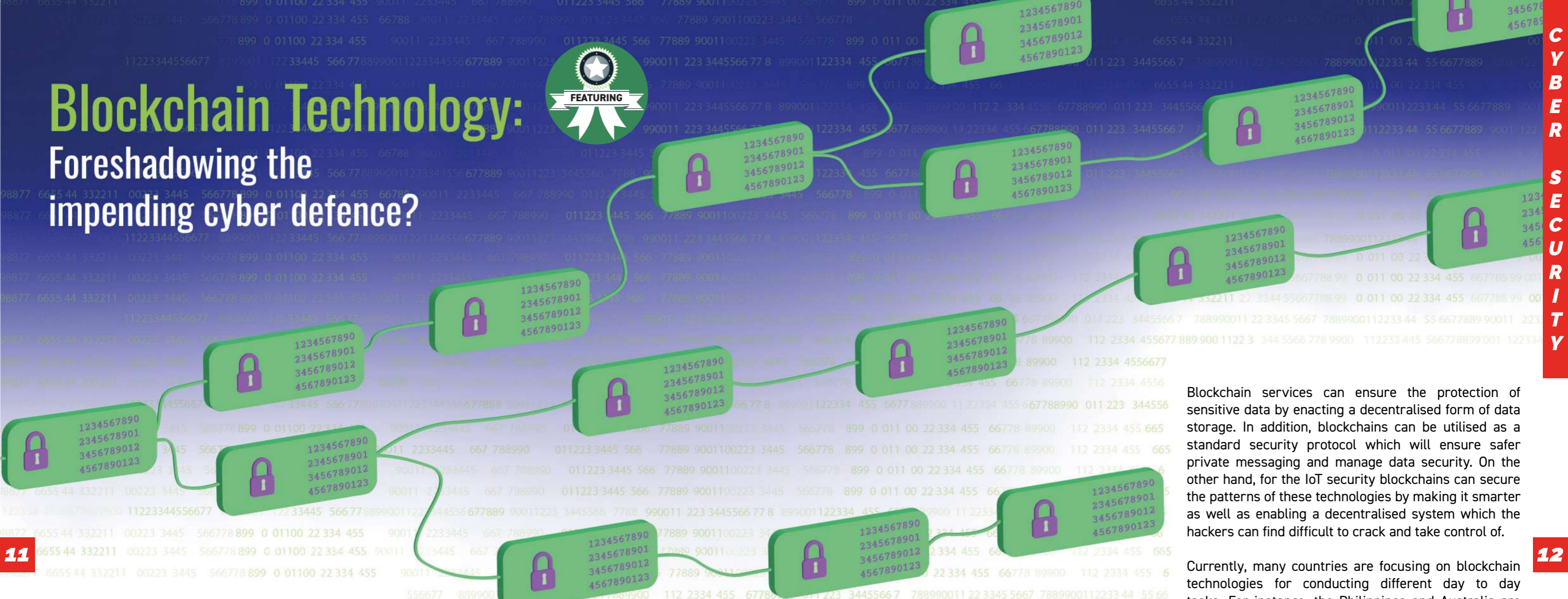
This was a fascinating podcast. While it may become a little jargon heavy at points, it is presented in a way that makes it understandable, offering key takeaways for its listeners. I'll definitely keep an eye on the permissions that software asks for when I download something and you should too.

If you want to delve deeper and get more detail then you can find the episode [HERE](#)

Written by: Kyle Wilson
 Title: Writer, Amnick
 Designed by: Toby Boyd



Blockchain Technology: Foreshadowing the impending cyber defence?



11

2021 started with a remarkable upswing for the cryptocurrency market. The momentum has been drawn out after it was revealed that Tesla Inc. bought 1.5 billion in bitcoin as well as the company's Chief Executive Elon Musk's preoccupation with cryptocurrency technologies. From a historical standpoint, cryptocurrencies which do not require a particular midway for any transaction between a sender and the receiver have been controversial for several reasons.

For instance, Bitcoin, which is considered to be the leading cryptocurrency, has been witnessing rapid economic bubbles and inconsistency in its market price since its outset. It also has been noted as a medium that provides a safer passage to criminal payouts.

Therefore, to this day cryptocurrencies have been a complex issue that seems to need more time to obtain acknowledgement from all sections. However, Blockchain Technology which is arguably the pathfinder of the virtual transaction processes has always remained unnoticed and a subordinate issue next to Bitcoins.

Quite recently, Blockchain obtained a noteworthy approval for its unique feature to provide assurance on information integrity issues. Its decentralised structure which manages the information gathered on the blockchain is unchangeable and secured from attacks, crashes etc. has garnered an ubiquitous appraisal that assimilates with the ongoing trend amongst the internet users to securitise their digital identity.

During the course of the ongoing lockdown, the issues of cyber attacks elevated at a bewildering pace. The recent key findings by IBM X-Force Threat Intelligence Index postulates that the most significant type of cyber threat, approximately 23% in the year 2020, were commenced by ransomware attacks. The report also states that 35% of the initial procedure of hacking was through scan and exploit arrangement. Moreover, Europe is considered to be the worst victim of cyber attacks in 2020.

Apart from these institutional overviews, recent reports proclaim that cyber attackers are more interested in cloud storage hacking since the cloud storage provides them access to billions of customer data. Seeing that, the cloud providers (i.e. the organisations delivering the cloud storage to their customers) only maintain the security of the cloud platform. Here, the safety of the customer data totally depends on the maintenance by the customers themselves. So, human errors seem to be the factual reason for data breaching. Thus, blockchain takes up eminence in order to strike out these human errors by providing many-sided features to counter the cyber threats.

There are many aspects of cyberspace where blockchains can be utilised to prevent any unanticipated threats. Its decentralised system enables it to offer safety on the DNS and DDOs platforms which can guarantee safer browsing.

Blockchain services can ensure the protection of sensitive data by enacting a decentralised form of data storage. In addition, blockchains can be utilised as a standard security protocol which will ensure safer private messaging and manage data security. On the other hand, for the IoT security blockchains can secure the patterns of these technologies by making it smarter as well as enabling a decentralised system which the hackers can find difficult to crack and take control of.

Currently, many countries are focusing on blockchain technologies for conducting different day to day tasks. For instance, the Philippines and Australia are considering blockchain for their cloud data management; with Japan and Malta utilising it for their educational certificate management. Moreover, Malaysia is enacting a Blockchain City focusing on cryptocurrency and data management. It is also being used for medical purposes, financial applications, supply chain management, and asset management by countries such as the USA, China, Switzerland, South Korea, Brazil, Japan and many more.

The hasty rise of cyber attacks has increased the urgency to eradicate the risks with feasible technological solutions. In this regard, blockchain attains the primacy to stimulate itself as the forerunner of cyber security. It needs further exploration that seems missing to this day since it gets less attention than Bitcoin. With broader exploration, blockchains could generate a safer cyberspace with lasting invulnerability.

Written by: Mashrik Farhan Zaman
Title: Writer, Amnick
Designed by: Lena Privalenko

12

INSECURITY PODCAST



13



"To the Moon!"

14

InSecurity is a podcast run by Matt Stephenson, a host who has spent the past decade running the broadcast team at Blackberry (previously Cylance). This podcast is intriguing by the topics it covers, as Matt himself specialises in the data protection part of cyber security, yet is not above delving into broader topics. For example, his recent episode, "Bill Hunter: Hacking the Stock Market with Emojis and Catch Phrases" takes on a theme less to do with cyber security and more with the online framework of the stock market – and how it can be broken.

Matt's discussion with Bill uses a mix of humour and pop culture references to keep the tone light and accessible. However, Matt's ability to suddenly tone down his approach flows successfully by linking them to the broader point of the episode.

For example, this podcast centres on the GameStop event that saw Redditors inflate the stock price of GameStop by artificial interest. By referring to movies like Margin Call and the Big Short, Matt can discuss with Bill the intricacies of the situation. Bill dismisses the claim that the event marks the 'democratisation of Wall Street' and instead uses

Bill subsequently expresses individuality by referring to the history of occurrences like GameStop, such as Jonathan Lebed who used Yahoo! Finance boards to influence stocks – much like Redditors used rocket emojis and phrases like "To the Moon!" to increase demand. Matt brings up the tulip crisis in the 17th century to accentuate this repetition through history; this is not the first time, nor will it be the last.

Why does this happen so often? Bill explains: "People want to believe it this time – and because they have more disposable income, they are more willing to believe than ever before".

The podcast is informative without being technical, and informal without being tedious. A must-listen for any occasion.

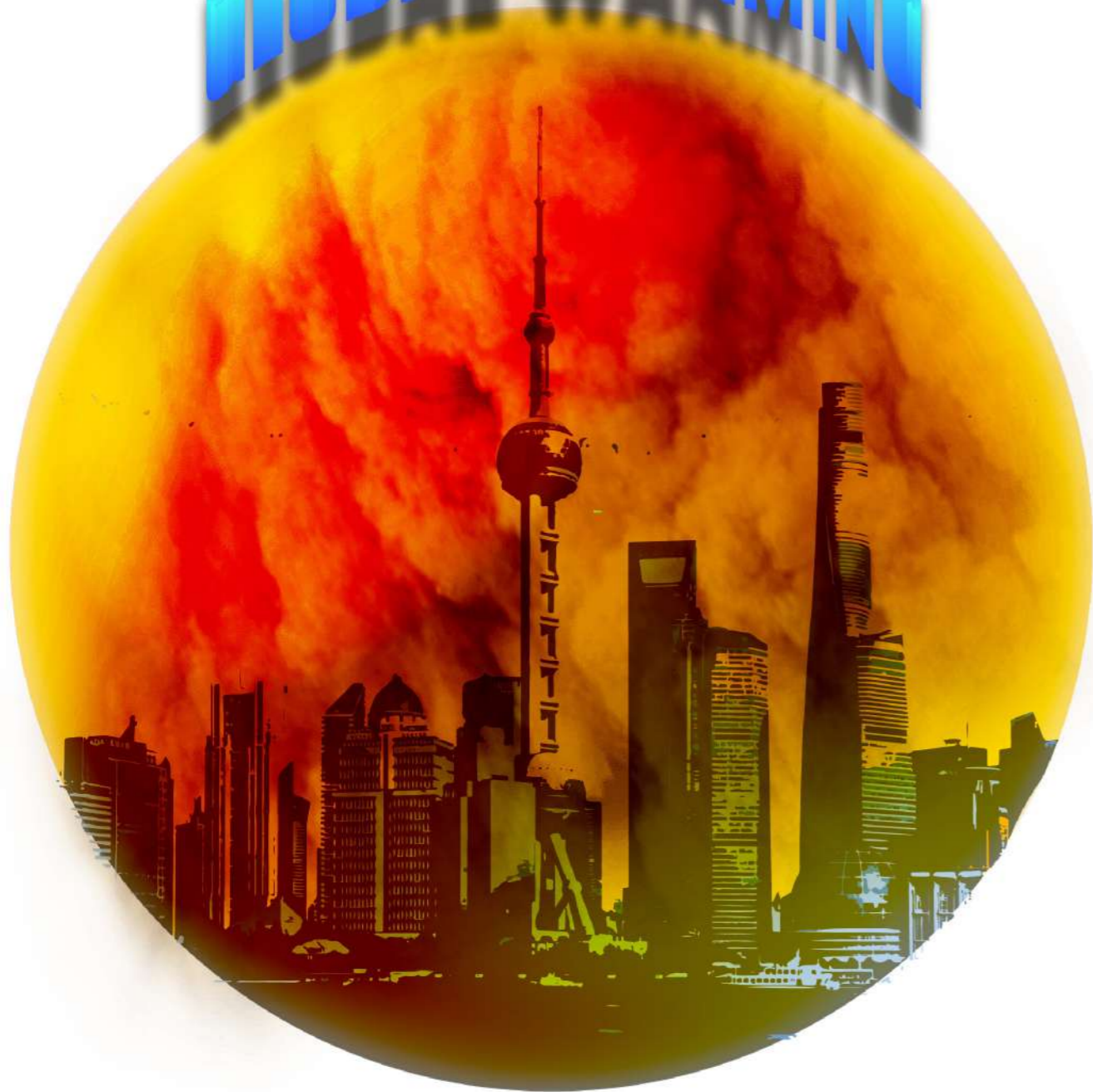
To listen to the Podcast, please click [HERE](#)

Written by: Angus Harker
Title: Writer, Amnick
Designed by: Alina Sazonova

“GCA China”: How it Shares Expertise to Adapt to Climate Change.



GLOBAL WARMING



15



As articulated by Patrick V. Verkooijen, CEO of the GCA: “They [China] have recognised that while mitigation alone is not enough, the costs of adaptation are less than the costs of doing business as usual.”

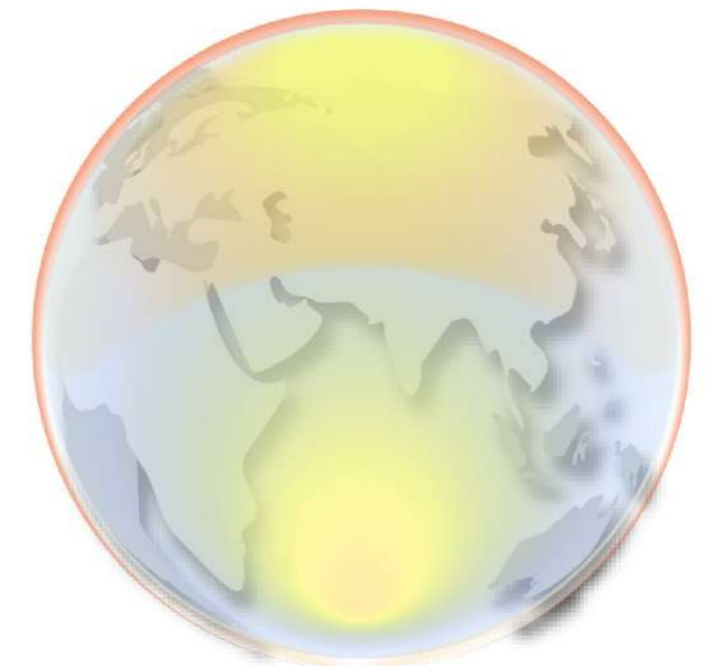
On 6th November 2019, in Beijing, GCA China convened an expert consultation, the first in an expected series of workshops and applied research initiatives, to share international advances for supporting an update of China’s adaptation strategy – for the water sector on that occasion.

Chinese experts from leading hydrologic and engineering research institutes joined with international experts with the aim of exchanging knowledge on state-of-the-art water systems resilience planning.

In recent years, China has become the victim of frequent extreme weather events. Torn by floods, burned by heat waves, starved by droughts, smothered by dust storms, the changing climate is causing great harm to its nation’s health - and by extension, society.

The Global Center on Adaptation (GCA) is the Global Commission on Adaptation’s managing partner. The Commission was launched in The Hague on 16th October 2018 by the 8th UN Secretary General Ban Ki-moon with the support of 23 convening countries - including China - and has the mandate to encourage the development of measures to combat the effects of climate change (adaptation) by the international community via elevating the political visibility of this necessity and focusing on concrete solutions.

In contrast, the GCA engages through an evolving network of offices in: Innovative solutions to drive adaptation at scale; high-level policy development; new research contributions; advocacy; communications; and to work with its partners to deliver action on the ground.



16

China gets inspiration from the global expertise

The Room for the River Programme – Started in 2007 by the Dutch Government, this consists of over 30 projects. The main programme features: Managing higher water levels in the rivers by lowering the levels of flood plains and restoring the natural ones in places where it is least harmful; relocating levees further inland; increasing the depth of side channels; and constructing flood bypasses.

The World Bank's Resilience initiatives – Among the works financed in various countries, consisting of community capacity building and hydraulic engineering works, the Water Conservation Project II in China, tackling water scarcity issues in the provinces of Hebei, Shanxi, and Ningxia, can be cited. To cut down net water consumption, the project reduced water withdrawal for irrigated agriculture in Ningxia and Shanxi Provinces, and groundwater overdraft in Hebei Province. New or improved irrigation and drainage services reached 594,200 beneficiaries.

City Water Resilience Approach and the “Sponge Cities” programme

The Chinese government started this programme in 2014 to address the problem of flooding in urban areas, for enabling cities to soak up and reuse 70% of the rainwater. This is achieved through rainwater harvesting, obtained by building permeable roads and “green and blue infrastructures” such as low carbon buildings, rooftop gardens, wetlands, ponds, lakes and marshy depressions called “swales”.

The “Sponge Cities” model – in which China is the leading country – is based on global advances such as the City Water Resilience Approach (CWRA), developed by the engineering firm Arup and the Stockholm International Water Institute (SIWI) to “help cities improve the way they plan, manage and maintain their water systems”.



The CWRA is a five-step approach:

1. Understanding the system – focus is on: Who the stakeholders and what their features and interdependencies are; what the relevant infrastructure is.
2. Assessing resilience – it foresees working out how current strengths can be built on and weaknesses overcome.
3. Developing an action plan that strengthens a city's water resilience, anticipating benefits and costs, then prioritising key projects.
4. Implementing the action plan, monitoring progress as the overall intervention goes.
5. Evaluating, learning and adapting, based on assessing the results, and how the stakeholders are adapting.

What expertise China can make available?

The Loess plateau, to quote Anthony Mills: “Its rehabilitation is recognised as one of the largest and most successful erosion-control and adaptation initiatives in the world. Grain and fruit production have increased considerably. Sediment loss into the Yellow River has been reduced by tens of millions of tonnes a year.” This shows very clearly the success of China's policy of absorbing expert advice from around the world and implementing it on a huge scale.

Ecological conservation red line, this Chinese initiative coupled with incentives for both public and private actors, aims to protect rare and endangered species and their habitats in more than one quarter of the Chinese mainland.



Written by: Federico Lovo
Title: Writer, Amnick
Designed by: Tarek ElSabagh



“ Woodham Fen is a site of special scientific interest and Essex County Council manages Marsh Farm Country Park and actively employs environmentally friendly policies. ”



Environmental Agenda Hopes For Future Prospects



Shifting focus from the general to the minutiae, City Pulse interviews Chelmsford mayor **Bob Massey** regarding environmentalist hopes and developments in the town of South Woodham Ferrers.

One established policy is to involve various councils throughout Essex who will prioritise the protection of 1600 wildlife sites. While regarding many of the sites that are owned privately, there may be no direct legal protection, although many of the sites are recognised by the National Planning Policy Framework (NPPF). This provides protection from being construction works, or just being directly removed.

My establishing question to the mayor was if any bylaws were to be drawn to create a more environmentally friendly environment in the surrounding community. “We haven’t introduced any local bylaws as such, but Woodham Fen is a site of special scientific interest and Essex County Council manages Marsh Farm Country Park and actively employs environmentally friendly policies.”

Since 2012, an agreement has been made to protect the original landscape of environmental areas, involving the County Council’s Country Parks and council’s wooded estates. The policy’s intention is to provide management of up to 32 sites of environmental areas, estimated to include 300 hectares (units per area) for as much as up to 5 years.

The Mayor shed light on the fact that the council is not seeking to invest in companies, but rather to establish secure relationships with countryside home-owners in order to create homes that are carbon neutral, have gas free heating, electric car charging points and access to recreational facilities. The development will start within the next 12 months and take 5 to 10 years.

Mr Massey’s policies seem to bind together environmental issues with local, generational ones. My next question was asking what he would do if he had received a sudden £100,000 increase in funds. He responded: “I would contribute towards community facilities in an attempt to benefit residents - in particular, the rapidly ageing population which has largely increased between 1970-90.”

He wants to reassure the public that funds will be spent appropriately in relation to environmental policy and investment. He emphasised the money would be spent towards green spaces in the north of the town, which he seems to be focused on. Regarding businesses and investment; it would be spent on employment opportunities.

He states that Chelmsford City Council has initiated a climate change emergency, and a group has been formed to deal with carbon emissions due to it being a crucial part of the national, and international, situation.

Overall, Mr Massey is determined to invest in producing more homes that are environmentally friendly, as well as managing Marsh Farm to create policies that maintain the local environment, and build facilities for older residents.

This will provide the public with some reassurance that the best decisions are being made for environmental prosperity and the health of the public - and what is more, that neither one can be sacrificed for the other.



Interviewer: Harley Nieslony
Title: Writer, Amnick
Designed by: Katie Peat

EMERGENCY ON PLANET EARTH



Over the past year or so, we have been hearing more and more about the 'Climate and Ecological Emergency'. On 1 May 2019, the UK parliament became the world's first national Parliament to declare a climate and ecological emergency. Earlier, the Welsh Parliament and the Scottish First Minister had joined 90 councils around the country to declare a climate emergency.

Universities and colleges around the globe have been declaring climate emergencies as well. Over 7,000 further and higher education institutions have come together for the first time to declare a climate emergency. In an open letter, the group commits to undertake a three-point plan to address the crisis through work with students:

- Committing to going carbon-neutral by 2030, or 2050 at the very latest.
- Mobilising more resources for action-oriented climate change research and skills creation.
- Increasing the delivery of environmental and sustainability education across curriculums, campuses, and community outreach programmes.

Organised by the EUAC, The Alliance for Sustainability Leadership in Education, US-based HE climate action organisation Second Nature, and the UN Environment's Youth and Action Alliance. The letter has been signed by universities from six continents, and was presented to ministers meeting in New York at the Higher Education Sustainability Initiative last year.

The UK Government announced it will legislate for Net Zero carbon emissions by 2050 by amending the UK's Climate Change Act. On the 12 August 2020, a new group launched the campaign for the Climate and Ecological Emergency (OEE) bill.

To quote the website: "This is a Private Members' Bill, and taking it through parliament will be a hard-fought process but it has been done before with major climate legislation."

This is an alliance bill that has been written by scientists, lawyers and activists; it is gathering support from a broad range of campaign groups, businesses, charities and individuals. The bill has the potential to become the most significant move forward since the Climate Change Act 2008."

Is our situation actually catastrophic?

In a nutshell, the answer is YES - emphatically!

The figure opposite illustrates the magnitude of the challenge. In 2017, Christiana Figueres and a number of eminent scientists warned that we have 'three years to safeguard our climate'. Not only do we have to bend the emissions curve down, but we must also draw down vast quantities of CO2 that has already (and is still being) emitted.

But the UK Government is working to bring all greenhouse gas emissions to net zero by 2050, so surely there isn't a problem?

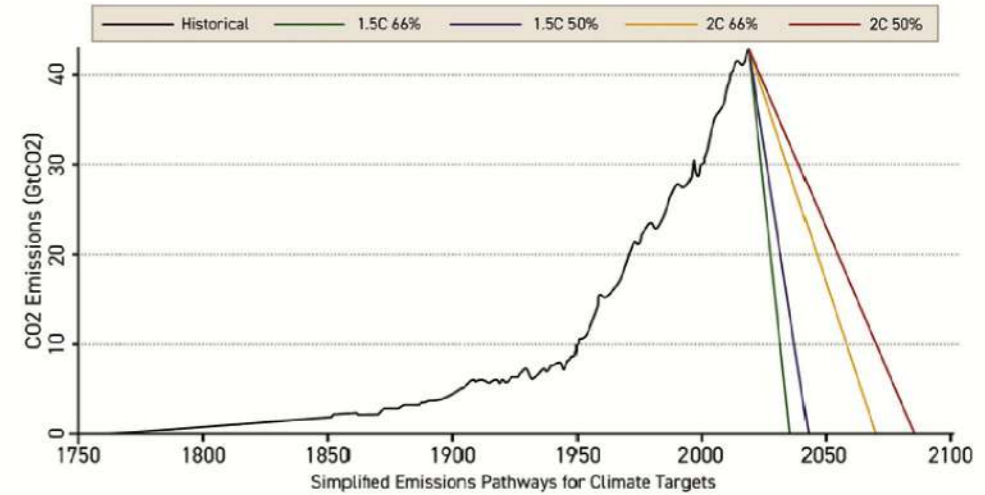
Wrong!

The Intergovernmental Panel on Climate Change (IPCC), widely seen as the leading authority on the climate crisis, notes in its 2018 report: "All pathways that limit global warming to 1.5°C with limited or no overshoot project the use of carbon dioxide removal (CDR) on the order of 100-1000 GtCO2 over the 21st century".

Let's just consider that for a moment. All pathways require colossal amounts of CO2 removal, if we are to keep within the guardrail of 1.5°C warming. And we are not on track to achieve this. We are not even close.



Dr Alison Green



The problem arises because organisations and scientific reports tend to report on emissions while ignoring the need for Carbon Capture and Storage (CCS) and Carbon Capture Utilisation (CCU). For example, a report published in September 2020 by Science Based Targets (a group that includes the Carbon Disclosure Project (CDP), the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF), and one of the We Mean Business Coalition commitments) states in the executive summary that:

"[IPCC] confirmed that in order to limit global warming to 1.5°C, the world needs to halve CO2 emissions by around 2030 and reach net-zero CO2 emissions by mid-century."

Emissions are of course important, but they are only a part of the story. Any notion that we can work towards our net zero 2050 target and do little about the carbon already emitted is a mistake. There are arguably three possible scenarios for achieving 1.5°C:

1. Reduce CO2 emissions by -50% by 2030, reach net zero by 2050, AND REMOVE ~10-100 GtCO2 before 2100.
2. Reduce CO2 emissions by 80% by 2030, reach net zero 2050, and stay at zero.

3. Reduce CO2 emissions by 55% by 2030, reach net zero 2033, and stay at zero.

We do not have a coherent plan to achieve this. A key point is that the general public are largely unaware of the scale of the challenges we face, and of the extent of the changes to lifestyle that we must adopt.

Finding out more about the Climate and Ecological Emergency

We have an Emergency on Planet Earth, an emergency that is affecting many already and one that WILL impact those of us in the Global North. One of the UK's leading science communicators, Dr Emily Grossman, has just written a free, online book entitled "Emergency on Planet Earth".

The book can be accessed via the Features page at Scientists Warning, and you can watch my interview with Emily Grossman [HERE](#).



The book begins boldly with the following message: "The science is clear. We are facing an unprecedented global emergency. We must act now." It then goes on to answer every question you could have, from how we can be sure that humans are causing climate change, to how it is already affecting us right now, to what might happen in the future depending on what action we take. The book also addresses the arguments made by climate sceptics and looks at how global governments are responding to the crisis, continually returning to its core truth that: "Humanity is facing a crisis unprecedented in its history... This crisis has been caused by human activities and we have to stop making it worse or we will face catastrophe that we cannot think our way out of, invent our way out of or buy our way out of. In one way or another, it will affect every one of us and everything we love."

Last year she was chosen as spokesperson for The Daily Mirror's Climate Issue (the first ever paper to produce an entire issue on the subject), spoke at The Guardian Live's first ever panel event on Climate Change, interviewed Sadiq Khan for Time Out magazine challenging him on London's emissions, co-wrote and presented a Radio 4 documentary on James Hansen - the father of climate change awareness - and co-founded Scientists for Extinction Rebellion (now XR Scientists). Yet, according to Dr Grossman, this still wasn't enough because when people told her they wanted to find out more about what's going on our planet, she couldn't point them towards an easy-to-read resource that told them everything they needed to know, all in one place.

Dr Grossman added: "It's not really surprising that a simple guide like this didn't already exist, as the changes that are happening to our climate impact almost everything under the Sun, from changes to our weather to melting sea ice to wildlife loss to declining crop yields to increased spread of diseases.

Finding out what I needed to know from each different field in order to get a complete and up to date picture felt like an almost impossible task, but fortunately I was joined by an expert team of volunteer scientists and we brought together information from every relevant field. Sometimes a single sentence crossed many different disciplines and the review process took many, many months - but I can now put my hand on my heart and say that this is a book you can really trust to tell you the truth."

Are Governments doing enough?

As the scale and severity of the crisis becomes more apparent, more and more organisations and individuals are calling on governments to take proportionate action, and to do so with urgency. Recently, Greta Thunberg and Fridays4Future called on global leaders to Face the Climate Emergency.

Informed by science, the letter calls for the following action:

- Effective immediately, halt all investments in fossil fuel exploration and extraction, immediately end all fossil fuel subsidies and immediately and completely divest from fossil fuels.
- EU member states must advocate to make ecocide an international crime at the International Criminal Court.
- Include total emissions in all figures and targets, including consumption index, international aviation and shipping.
- Starting today - establish annual, binding carbon budgets based on the current best available science and the IPCC's budget which gives us a 66% chance of limiting the global temperature rise to below 1.5°C. They need to include the global aspect of equity, tipping points and feedback loops and shouldn't depend on assumptions of possible future negative emissions technologies.
- Safeguard and protect democracy.
- Design climate policies that protect workers and the most vulnerable and reduce all forms of inequality: economic, racial and gender.

- Safeguard and protect democracy.
- Design climate policies that protect workers and the most vulnerable and reduce all forms of inequality: economic, racial and gender.
- Treat the climate and ecological emergency like an emergency.

We have all the resources we need to deal with this. There is nothing magical about the concept of reducing carbon dioxide in the atmosphere. There is nothing magical about the greenhouse effect. The science is accepted and understood. We know exactly how to deal with it. We just don't have the political or economic will to do this. And a large part of the problem is that those of us contributing the most to the problem - those of us consuming the most - are either unaware of our contribution to this crisis, in denial of the crisis, or unwilling to take the necessary action to address it.

As American novelist and playwright James Baldwin said: "Not everything that is faced can be changed, but nothing can be changed until it is faced."

Written by: Dr Alison Green
 Title: Executive Director, Scientists Warning
 Designed by: Charlotte Wilson

The launch of Emergency on Planet Earth is far from being Dr Grossman's only work towards informing the public about the issues our planet faces.



The One Doughnut That's Actually Good For Us!



Interlay the foundations of a completely new economy; an economy that lives within the planet's natural limits, emphasises human well-being and all life support systems". - George Monbiot

For cities who want to thrive in the 21st century, there needs to be a rewrite of the rules! Reforming the political-economic agenda, at both the local and national level, has never been more important. The 21st century has begun with repeated global shocks; a boom-and-bust cycle, or just a bust-and-bust?

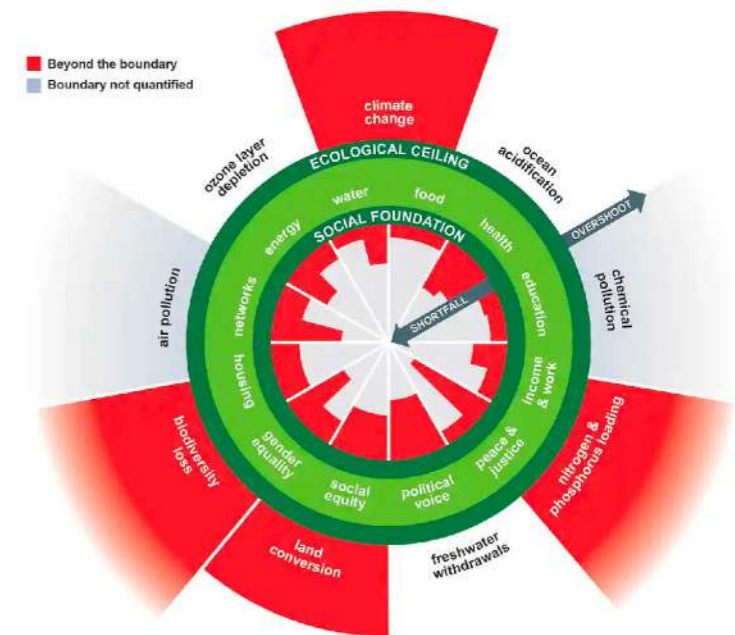
From the 2008 global financial crisis accompanied with rocketing food prices, to the existential climate meltdown and more recently the COVID-19 pandemic. These shocks have exacerbated global inequalities, both north and south - of race, of gender, of wealth and of power. If one conclusion is to be drawn, it is the deep interconnectedness of people and the rest of the living world; and that these crises are a result of man-made systems and human activity. Revisioning how we measure progress and strive for development needed to be amended, to address the growing needs of the 21st century!

Doughnut economics is a framework inspired by the UN's Sustainable Development Goals. Developed by Dr Kate Raworth, an economist, ecologist, social activist, and altogether - a humanitarian who has encompassed all these disciplines. The framework is an intuitive rethink of how we measure development and address inequality - a model that allows us, humanity, to thrive whilst saving the planet.

The inherent flaws within the traditional metrics for development - economic growth, have become unapologetically highlighted since the late 20th century. The exacerbation of social and environmental issues, such as climate change and famine on both a global and national scale, demonstrates the blatant. Failures of policymakers pursuing growth at all costs. Proving "trickle-down economics" is not all what it was promised to be. As humanity becomes more value-driven, a desperate plea for the adoption of a new political-economic framework, that addresses the social and environmental remit, may be on the horizon for many cities and countries across the world.

The Doughnut model measures not how fast or aggressive economic growth, but rather how well it has been created and if the benefits are shared equally across society. Pursuing unlimited growth is unsustainable and will eventually lead to burnout.

Economies require a certain amount of economic and social/political development to ensure citizens live a good and healthy life. The model encourages countries to pursue development paths that equally respect economic productivity, social wellbeing and environmental protection.



Envisioning an 'original-glazed Krispy Kreme doughnut', the goal for humanity is to remain within the sweet spot - the "safe and just space for humanity" where we can thrive. The inner ring represents the social foundations of human wellbeing i.e. economic and social free-fall. Whilst the outer ring represents the ecological ceiling of planetary pressure i.e. unsustainable impact on the environment. To fall short on any of the metrics, means society is falling short on life essentials, such as food, education or housing (inner ring) and to overshoot is the creation of unacceptable environmental degradation and potential tipping points in Earth systems like ocean acidification or biodiversity loss.

Conceptually, the model is intuitive and simple to comprehend; yet practically is challenging to execute. The successful balancing between the twenty-one dimensions is the ultimate destination - the development of a better, more socially-just and environmentally responsible city or country.

Environmental Kuznets Curve

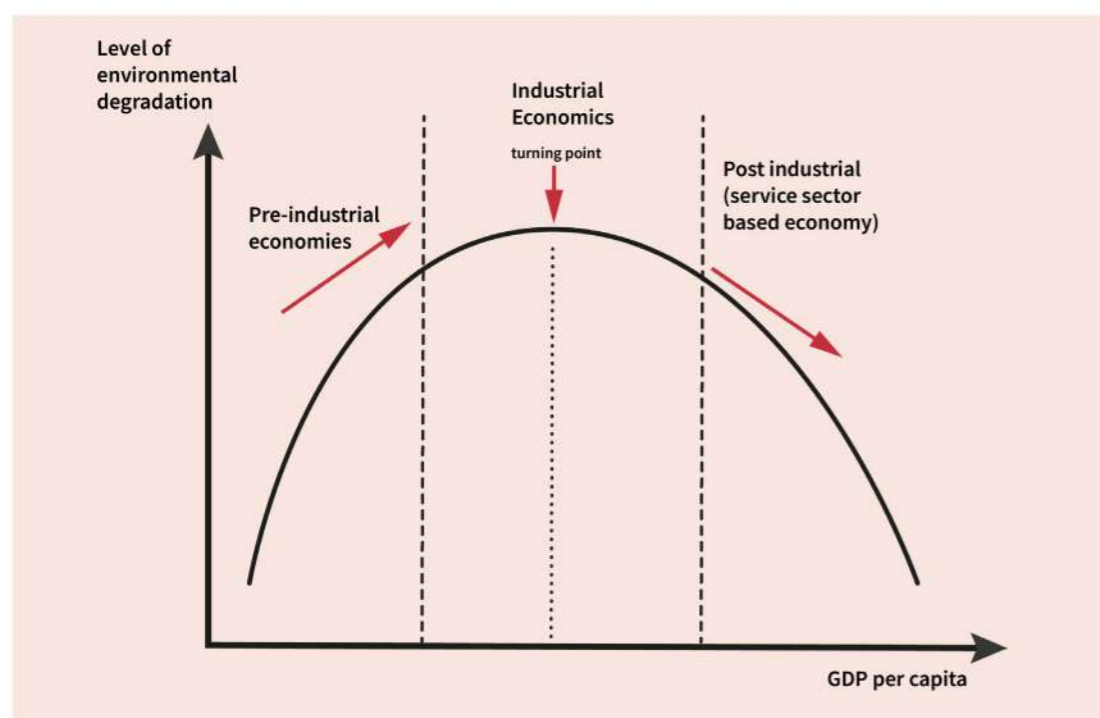
"It is possible to 'grow out of' some environmental problems, but there is nothing automatic about doing so. Action tends to be taken where there are generalised local costs and substantial private and social benefits".
- Shafik & Bandyopadhyay

The challenge of remaining on the doughnut revolves more around the idea of equal distribution, rather than resource scarcity. As a discipline, traditional economics looks at society's ability to allocate scarce resources. Although, most developed nations use or are endowed with enough resources to ensure citizens are not left within the doughnut hole.

The greater cause for concern is the efficient, socially-just allocation of existing resources to ensure we are not moving beyond the ecological ceiling (outer-ring), causing climate and environmental degradation.

The Environmental Kuznets Curve (EKC) is commonly used in environmental policy literature to illustrate the trade-off between economic growth and environmental quality. The EKC hypothesised as an inverted-U relation between growth and environmental degradation. Suggesting economic development is a precondition for environment conservation. During the early stages of growth, environmental damage is considerably higher. As development accelerates, a 'turning point' is met where there is an appreciation towards environmental protection, hence the reduction in environmental damage. Inherently the EKC hypothesis suggests prioritising development, and in due course conservation will follow suit, although this is not a given.

While the EKC does hold some merit, there is concern that the so-called "turning point" arrives far later than necessary, causing irreversible ecological damage. The economy and environment should not be thought of as dichotomous concepts - owing to the leading limitation of the EKC - accounting for the importance of each concept in the advancement of the other. Hence, the model's usefulness is limited in the prospect of policy development as in an extreme perspective, it would encourage omitting environment policies at early stages as it would be counterproductive for growth. But rather, it should be understood that the economy is embedded within and dependent upon society and the living world; this is the underlying teaching of Doughnut Economics.



Post-COVID, Building Back, Better!

"Within a democracy; it is our responsibility to hold our government to accountable and to break the link between them and self-serving powerful interest that surrounds them, replace the power of money, with the power of citizens". - George Monbiot

In practice, policymakers should be pursuing sustainable growth strategies, compatible with the parameters of the planet, or to lower the "turning point" is extremely complex. For many governments, who are already influenced and heavily lobbied by "deep-pocketed" stakeholders (internal and external), it is difficult to introduce and commit to green proposals, legislation and programmes.

"Post pandemic, we need to switch to a system of private sufficiency and public luxury" - George Monbiot

While 2020 has been very unprecedented, and the COVID-19 pandemic horrendous... there is a silver-lining to every cloud. The pandemic has proven the 'unimaginable', possible. For instance, the government "shook their magic money tree" and miraculously found funding and housing to support the most disadvantaged members of society (homeless), in an attempt to curb the virus. People have reformed their way of living; from working conditions to restricting international travel, and social gatherings. If anything is clear, the 2020 pandemic has to be a tipping point. This has to be a point of transformation where we move from one system, an exploitative political and economic system, to a completely different one which will be key to building back, better.

The Doughnut in Action

"When a bird builds a nest in a tree, it takes care not to destroy the surrounding forest in the process".
- George Monbiot

Amsterdam is the first city to embrace and embed a scaled-down doughnut. Working with Doughnut Economics Action Lab (DEAL), they are able to incorporate the Doughnut framework into their long-term and transformative policy vision. "How can our city be a home to thriving people in a thriving place, while respecting the wellbeing of all people and the health of the whole planet?"

The Amsterdam Donut Coalition has developed a four-lens system, analysing the city from a social, ecological, local and global perspective - referred to as a "city portrait". Considering Amsterdam's current targets for the local lenses, the SDGs and global planetary boundaries; the coalition drew comparisons

of Amsterdam's desired outcomes against statistical snapshots of its current performance. The conclusions drawn are used as a starting point, to be used in insightful workshops aiming to bring about transformative action.

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"A wellbeing economy is about people feeling connected and in control." - Katherine Trebeck

Amsterdam initiative has the chance to inspire many more - from neighbourhoods, villages, towns, cities, nations and regions. All to approach regenerative development with a holistic approach, as they begin to reimagine and remake their own futures. A little closer to home, DEAL is working with CIVIC SQUARE based in Birmingham to apply a further downscaled doughnut at a neighbourhood scale. Exploring working with residents, neighbours and a range of actors across a neighbourhood to embedded doughnut principles to support an equitable transition to more regenerative places.

Written by: Samlia Miah
Title: Writer, Amnick
Designed by: Lena Privalenko

Bill Gates' How-To Guide for Fixing Climate Change

Bill Gates and his wife Melinda are well known for their exceeding philanthropic ventures. Their eponymous Gates Foundation continues to do immense work to improve health and tackle diseases prevalent in poverty-stricken countries. There is concern growing globally within our society. Vulnerability and the impact of climate change on impoverished nations have resulted in Gates' taking action on the current climate solution in his latest book, *How to Avoid a Climate Disaster: The Solutions We Have and the Breakthroughs We Need*.

The tech magnates' expertise in energy and philanthropy creates a compelling exploration. The importance of improving the resilience of both rich and developing countries (in their response to climate change) means that they will combat future unavoidable consequences of the issue. Gates' strategy is to replace emission-driving fossil fuels with renewable energy sources for zero-carbon power. They rely on expert groups in science, engineering and public policy to flesh out the details.

Put simply, Gates' intended strategy is to replace emission-driving fossil fuels with renewable energy sources for zero-carbon power with a reliance on expert groups in science, engineering and public policy to flesh out the details.

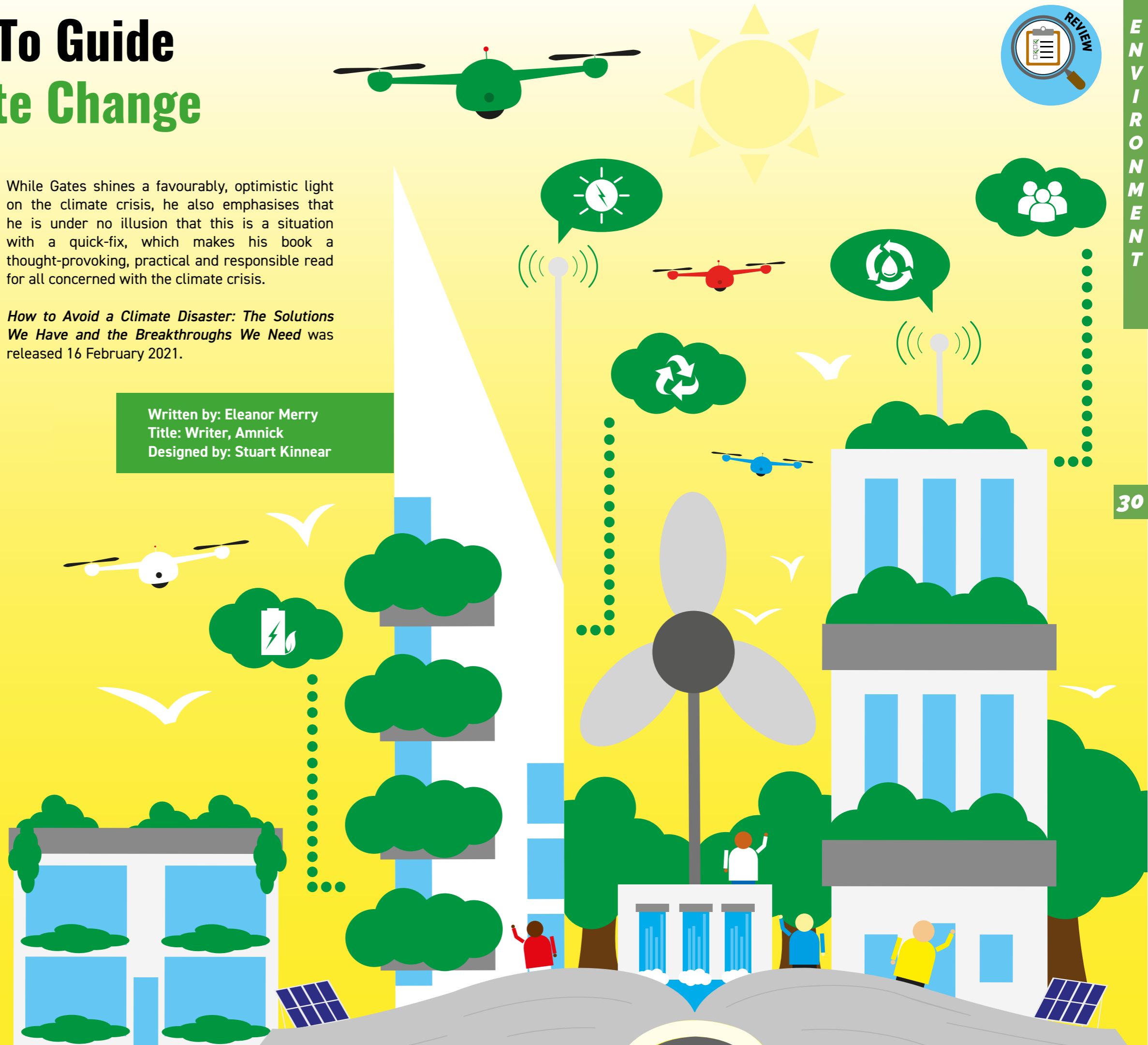
Gates focuses on five major emission-generating processes: making things, plugging in, growing things, keeping warm and cool and getting around. Gates applies his zero-emissions by 2050 goal to more developed countries such as the USA and UK, which he stresses should be the first to take action, with other countries following suit as soon as reasonably possible.

How to Avoid a Climate Disaster is an accessible dive into the issue of climate change and includes advice on ways everyone can help - from political leaders to members of the public.

While Gates shines a favourably, optimistic light on the climate crisis, he also emphasises that he is under no illusion that this is a situation with a quick-fix, which makes his book a thought-provoking, practical and responsible read for all concerned with the climate crisis.

How to Avoid a Climate Disaster: The Solutions We Have and the Breakthroughs We Need was released 16 February 2021.

Written by: Eleanor Merry
Title: Writer, Amnick
Designed by: Stuart Kinnear





Smart Cars: Some Heroes Come with Four Wheels not Capes

Melting ice, rising seas, extreme weather, shifting rainfall, wildfires and diminishing forests are some of the occurrences on the rise in recent years caused predominantly by the emission of carbon dioxide (CO₂). According to National Geographic, global average temperatures have stayed fairly constant over that time—until the past 150 years. Through the burning of fossil fuels and other activities that have emitted large amounts of greenhouse gases to run our modern lives (particularly over the past few decades), the greenhouse effect has been enhanced by humans.

This is the grotesque truth - more than 100 million people could return to extreme poverty by 2030, climate change is also closely linked with increased incidence of dengue - a mosquito-borne disease whose transmissibility has increased significantly due to climate change since 1990. The direct costs from damage to health (excluding costs in health-determining sectors such as agriculture, water, and sanitation) could reach between \$2 billion and \$4 billion per year by 2030. It gets gorier, too; these disasters result in over 60,000 deaths annually, mainly in developing countries.

At this point it is apparent that we do not have much time left if nothing changes.

The UN Secretary General, António Guterres, was right: *"If we do not urgently change our life, we jeopardise life itself."*

Today, car emissions are one of the leading causes of global warming and environmental pollution. Cars emit carbon dioxide and other greenhouse gases in the atmosphere, which at normal levels will keep some of the sun's heat in the atmosphere and help warm Earth. However, these emissions from cars have exceeded environmentally friendly limits, to the extent of becoming a significant source of carbon dioxide in the atmosphere.

The idea of electric cars originated around 1832 by Robert Anderson but was not practical until the late 1870s. In recent times, Tesla pioneered the invention of electric sport cars emphasising fuel efficiency and environmental sustainability, paving way for extensive research and development of electric cars by other automakers.

Unlike traditional cars, electric cars consume energy from batteries and can partially or completely drive themselves. While they run on lithium-ion batteries, these cars interact with users for destination instructions, journey preferences and communicate with other electric cars on the road through the use of artificial intelligence. The environmental impact of smart cars is highlighted by the production of little or no harmful emissions to cause environmental pollution or damage to the ozone layer. While some smart cars are powered partially by gasoline, completely electric cars release zero emissions to the atmosphere. In addition, electric cars that run on gasoline consume enough to make them more fuel efficient and environmentally friendly than traditional cars. This suggests that a significant number of electric cars on roads will reduce a substantial amount of carbon emissions emitted into the atmosphere per annum.

Although the development of electric cars is still relatively novel compared to that of traditional cars, the positive effect it promises in terms of cleaner air to improve quality of life and reduce

earth warming has brought more investment into its development in recent years notably with the advent of electric car manufacturer Tesla. Traditional car manufacturers like BMW, Volkswagen, Volvo, Mercedes Benz, etc., are investing in the research and development of electric cars to produce them in mass quantities and at affordable prices.

Going forward, the advent of smart cars promises a lot of benefits, more than just environmental sustainability. The smart car technology provides the chance of a great decrease in the present large carbon footprint with the possibility that all cars of the future will run on batteries or have energy-storing body panels in place of fuel or diesel, while simultaneously capable of driving themselves.

Written by: Ponnile Lawal
Title: Writer, Amnick
Designed by: Stuart Kinnear



33



News: Changes In Energy Importation And Creation Will Change Our Generation

Currently, 44% of energy used throughout the United Kingdom, is created through the use of petroleum, a naturally occurring liquid found in algae, and 33% with natural gas. In relation to importation of gas, which represents 40.7% of the gas used in 2018, it is estimated the amount imported in 2019 was 290TWh ('terawatt hour'), with the majority imported from pipelines in Norway.

From government statistics with regards to energy resources, between July and September 2020 total energy production was recorded as being 9% lower than the previous record in 2019, and according to the same report, importation for any type of energy is lower than 19%. However, the demand for energy has lowered by only 13% with a 6% widened gap between importation and demand.

For the future, the government intends to create a 10-point plan for a green industrial revolution. From creating emission-free vehicles and greener energy efficient buildings, to advance offshore wind technologies and jet zero emission ships. These include improvements in energy standard and creation; sticking to a proposal of generating 40GW (gigawatts) by 2030 from offshore wind energy (1GW = 1 billion watts).

To put this into perspective, 1.21 gigawatts would power up to 10 million light bulbs. As a result of government policy, renewable energy usage has risen by 40.2%, a significant increase from 8.2% generated in the first quarter a decade ago.

It seems the government is likely to stay on track in regards to environmental and energy policy. As the trend of renewable energy usage is increasing, in production as well as importation, we can see a shift for better resources and greener energy in the years to come.



Written by: Harley Nieslony
Title: Writer, Amnick
Designed by: Jonathan Oke

34

Copenhagen Solutions Lab



Where **Green Is Good** And Solutions Are Always Creative



Elon Musk is an extraordinary character. He has invested much of his wealth on advancing technological achievement for the good of humanity. He has been involved with many projects, from investing into Tesla cars, to Californian solar energy projects.



35

Copenhagen Solutions Labs, otherwise known as 'CSL', is an organisation dedicated to compiling data for changes to be considered regarding pollution levels, testing such measurements in the city. The headquarters of the organisation, in Denmark's capital city, is heavily invested in projects such as detecting and reducing pollution, as well as maintaining urban spaces within the city.

In October 2018/2019, a project was established to measure pollution areas within the city. Conducted by a university in the Netherlands, the project measured pollution at street level, resulting in further insight of the health risks.

"This collaboration is unique because it allows us to use very concrete measurements at street level to map the air pollution in an unprecedented degree of detail in an entire city." Roel Vermeulen, professor of environmental epidemiology at Utrecht University,

“ This collaboration is unique because it allows us to use very concrete measurements at street level to map the air pollution in an unprecedented degree of detail in an entire city. ”

says. "This large amount of data will help us understand what exactly creates the pollution - and what improvements can be made."

Pollution is deemed low in the city; the figure for air pollution is estimated at 18.57 (with an index denoting 0 as no pollution and 100 as extremely polluted), updated in November 2020.

One such example of how extremely vital this is to the local community is a situation in which people with asthma have to make some incredibly specific decisions in order to remain safe.

A mother of an asthmatic child has no other choice but to find the healthiest way to get to this child's local playground. Both cyclists and runners most often choose the least polluted routes (meaning those with the least traffic). The city of Copenhagen is the first to test a specific kind of sensor to measure air quality at a completely local level; it is significantly cheaper than other technologies used thus far. Its collaboration with startup companies have allowed it to market the sensor at a price of up to 450,000 DKK ('Danish Krone'), due to minimal borrowing costs.

CSL is also intended to create a better area of transportation and network. The Citizens Representation of Denmark voted for smart parking solutions in 2016 which would allow drivers to be notified of vacant parking spots in the city. Various companies, like Cleverciti, predict that smart parking solutions help to reduce pollution, mostly due to the obvious reason that the drivers would find it easier to park, and therefore

wouldn't be driving around for some time while producing more pollution in a specific area.

The statistical association between pollution and 33,000 sick days remains strong and clear, and the 28 early deaths due to it leave no excuse. Green, environmentally friendly, living and transport spaces are the future and the only price of paying for that is the pain of long term satisfactory scientific achievement. Copenhagen is one of those cities in which science is being tested and put into practice. Maybe, just maybe, it will lead the way. The only way we can know is when they have found the right solution.

Regardless of the time taken, it is obvious that we are driving ahead in creating a better world and improving the roads for those who are still around.

36



Written by: Harley Nieslony
 Title: Writer, Amnick
 Designed by: Katie Peat

The Stanford Innovation Lab

- Podcast Review

The clever clogs at Stanford run a podcast called the Stanford Innovation Lab. One of their miniseries, Ethics in Entrepreneurship, focuses on innovations in entrepreneurship. Their fourth episode, 'Facing a crisis with principles', stars professor Tim Byers and Stanford lecturer Jack Fuchs as they sit down with Bruce Cozadd, CEO of Jazz Pharmaceuticals. Within this episode, they discuss the importance of principles in a business, applied during the 2008 financial crisis.

For it was during this turbulent time that many companies resorted to layoffs and other drastic methods in order to stay afloat. Bruce does admit that: "We also took management salary cuts, we eliminated bonus programs, we rolled back benefits... it was everything on the table—" However, where he differed was how it was conducted.

"We held an all-employee meeting, departing and staying employees. Departing employees had been respectfully and individually informed; they were not hearing about it in the group. But we asked everybody to come to the meeting and we told everybody why we were making the decisions we were making."

Therefore, one of his principles was treating his employees with respect and letting them all know what decisions the business was taking.

Indeed, a similar principle was honesty, letting them know each step. "So, it's not just talk, you're building into the organisation [these core values]". It adds a personal touch to the business, a sense of camaraderie.

Jazz pharmaceutical also kept its clinical trials for narcoleptic drugs despite it being the be right was central to Bruce's thinking.

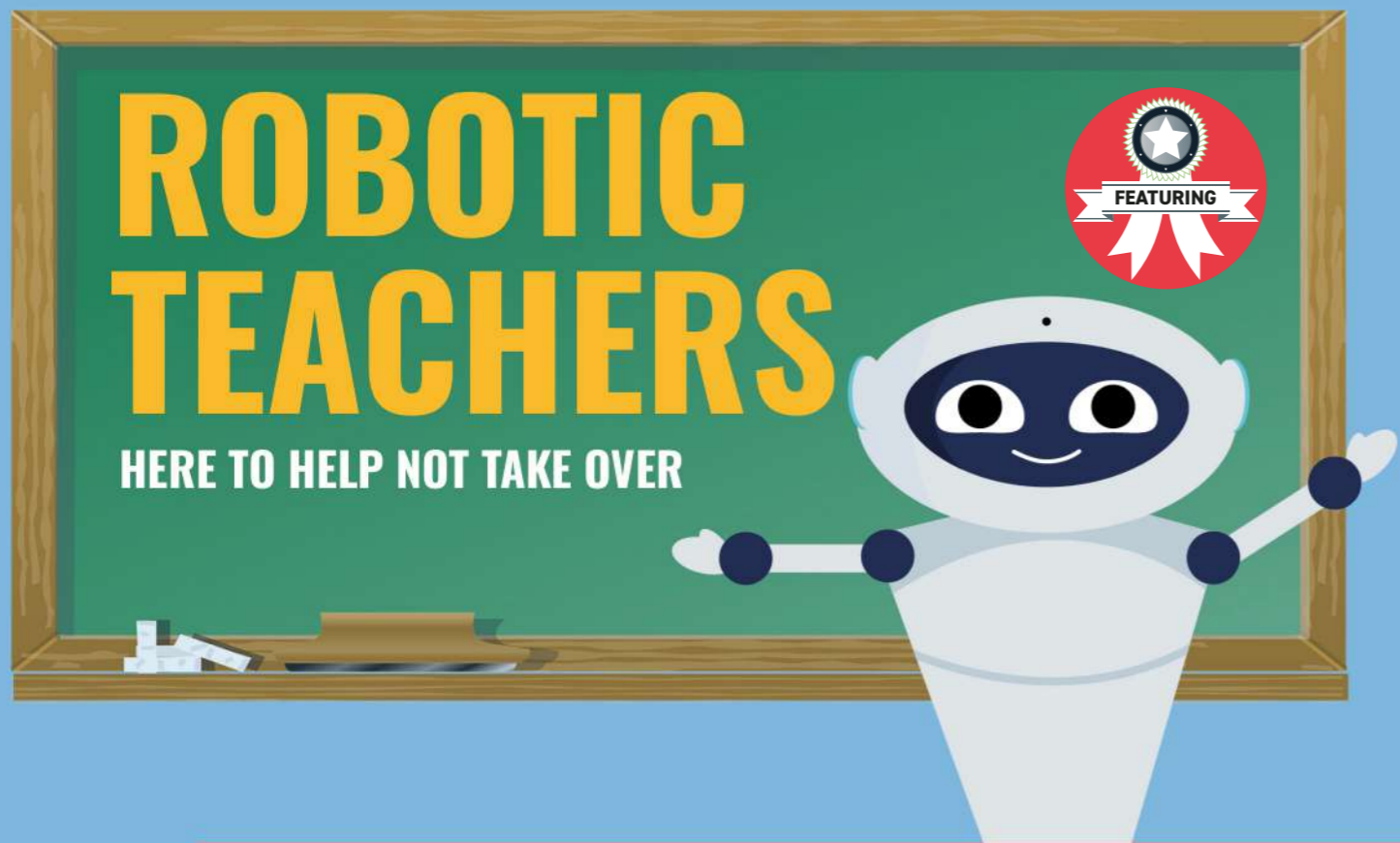
"The importance of this story is I got to be the leader I wanted to be in a tough time... and I can live with myself, right?"

The podcast was a little difficult to understand at times because the musical cues and documentary-like direction didn't work well in a purely audio format. However, the content was very intriguing. It's worth a listen on the ideas discussed alone.

To listen to the Podcast, please click [HERE](#)



Written by: Angus Harker
Title: Writer, Amnick
Designed by: Stuart Kinnear



It's important to note that there are certain tasks that cannot be performed by robots, including the ability to inspire a thirst for learning in students, create warmth, personal attention and growth, all of which is crucial in the learning outcomes of most, if not all education systems. In spite of this, there are certain areas where the employment of robots is the more appealing option and could also prove more cost effective. Education is not just an act of imparting knowledge - it's broader.

There are other factors inherent in teaching and learning, notably the supply, emotions and remuneration of teachers and pace of learning on the part of students. Unlike teachers, robots cannot express feelings of frustration or impatience, giving each student the opportunity to learn at their own pace, furthermore, robots do not require wages and salaries, healthcare or pensions.

Rouhiainen (2015) describes an instance of successful robotic application to teaching in the Finnish city of Tampere, in which certain schools have begun testing a social teaching robot called

To profit off this innovation is a real challenge as the idea is more often than not seen as a job to the necessity of human teachers. However, there are some inherent benefits in a human-robot teaching relationship: Teachers could have less demand on their time as robots can be programmed to perform tasks, notably grading because of the high level of accuracy that can be attained. This freed time can in turn be directed towards more productive and less monotonous activity by the teacher, such as ensuring that whatever is produced is ethical, unbiased and improves students' learning.

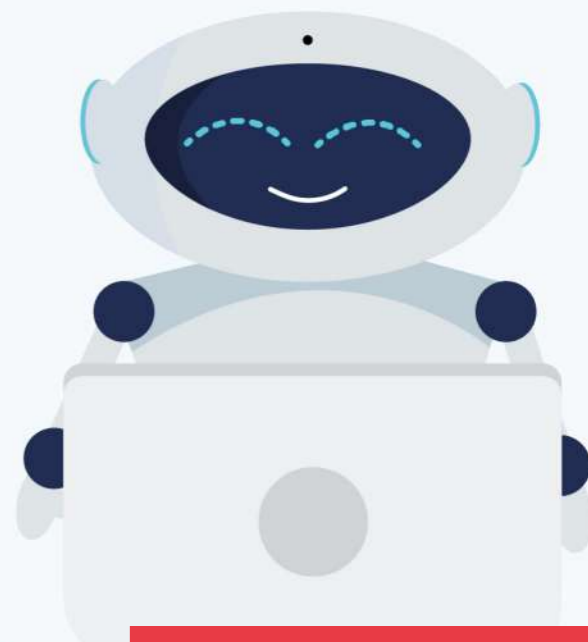
However, as the method of robot teaching is gaining more acceptance and success, a few pertinent questions remain in the minds of most: Will teachers gradually become overseers rather than educators? Will the advent of robot tutors mean the unemployment of a significant percentage of teachers? Is there a possibility of children overly relying on these robots and losing out on developing emotional maturity?

Elias, which is mainly used for language and math classes. Elias can dance and encourages students to sing and dance as well. Elias can also speak and understand 23 different languages and provides a safe and neutral learning environment as it can't judge or criticise any student for mistakes. Elias is never tired of repetition and even gives feedback to teachers on students' development and challenges.

In this age, artificial intelligence (AI) is not a new concept. It's the ability of a computer-controlled robot or digital computer to perform human-like "tasks", usually in a faster and more efficient manner. Education remains a field where powerful AIs such as robots can make a positive impact. Certain aspects of education can be quite narrow and repetitive which can induce impatience especially on the part of the teachers, making this invention plausible.

According to Belpaeme (2018):

"Robots have the potential to support and challenge students in ways currently unavailable in more resource-limited educational environments". Robots can make more time available for teachers, allowing the teacher to focus on what people still do best provide a comprehensive, empathic, and rewarding educational experience.



Written by: Ponmile Lawal
 Title: Writer, Amnick
 Designed by: Cintia Siqueira



Innovation News



41

Support for Innovation Venture capital for Healum's AI-based healthcare programmes



Innovative AI-centred company Healum has secured funding to further develop its business and products, in particular from Maven Capital Partners and Catapult Ventures. The investment will be used to expand the company's AI-based operations in Greater Manchester and to aid healthcare professionals in delivering programmes for people with long-term conditions. Programmes include: remote care, support and behaviour change.

Source: [Link](#)

High-tech remote control for controlling "robo-plants" to defend crops

Researchers in Singapore have been able to control electrode signals emitted by Venus flytraps with a smartphone app. They additionally managed to wire up the jaw to a robotic arm and to use it for picking up small objects. Though the technology is in its foundational early stages, researchers believe it could eventually be used to build advanced "plant-based robots" which can detect diseases in crops before symptoms appear.



Source: [Link](#)

3D-printing at the service of sustainable house construction



Mighty Buildings is using 3D-printing to build an entire community of 15 homes with cutting-edge carbon-reducing technology in Palm Springs, California. The partnership with Palari Group is wanting to eliminate waste during construction, fully utilising the material at hand to develop the world's "first 3D-printed zero net energy capable community". The project's focus on sustainability includes features such as: "[S]olar power, battery storage, advanced climate control and water filtration systems".

Source: [Link](#)

42

Sustainable and productive model from DIGITAL Realty for data centres in Singapore



DIGITAL Realty officially opened its third data centre in Singapore – known as Digital Loyang II or SIN12 – on Tuesday 6th April 2021, with the aim of offering digital services for customers. In the construction of the multi-storey building, these features can be recognised:

1. Productivity improvements of 30%.
2. Indirect evaporative cooling systems, which reduces the energy required for cooling and improves water-usage efficiency.
3. Highly efficient turbine generators, leading to cleaner emissions with equal energy output.
4. Lithium-ion batteries.

Source: [Link](#)

British universities' attempt of getting electricity from clean marine wave energy

Eight new projects have been launched by British universities to develop and test new marine wave energy technologies – wave energy converters (WECs). The research is supported by a £7.5 million investment by the Engineering and Physical Sciences Research Council (EPSRC), part of UK Research and Innovation (UKRI). The projects, announced on the 24th March 2021, will design WECs in order to become more durable and resistant towards extreme weather events.



Source: [Link](#)

Written by: Federico Lovò
 Title: Writer, Amnick
 Designed by: Toby Boyd

The Future of Jobs



After researching what jobs will be like in 20 years, it seems that a lot of the current jobs will either not exist or will be in a very unstable position. In addition, it seems that jobs in the future are going to have a mixture of components combining technology, reusable energy and healthcare. However, with change comes opportunity.

New jobs we can expect in next 20 years



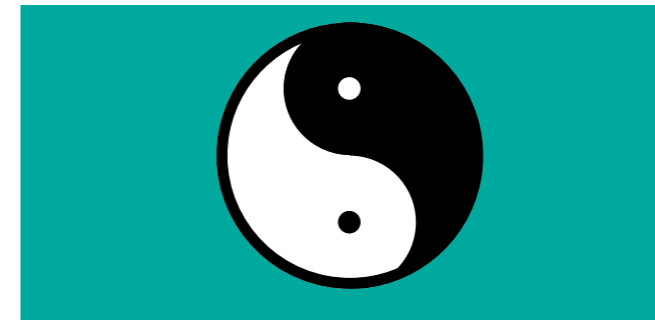
Ethical Sourcing Manager

Ethical sourcing is defined as, "... the process of ensuring that the products made are obtained through responsible and sustainable methods" (1). Sourcing managers are responsible for handling a business' end-to-end sourcing process. As the world becomes more focused on the environment, sourcing managers will have to adapt by ensuring that they take an ethical approach to their role. Applicants for this role will need to not only ensure that materials come from ethically consistent sources but also that the production process itself follows similar standards. (2) This job will require the applicant to be extremely organised with an eye for detail and strong research skills.



3D Printing Engineer

3D printing is a rapidly developing field that utilises computer-aided design to make products. It requires a high level of specialisation, and the applicants for this job will be those who have a keen interest in the process, relevant organisation, and manufacturing. In the future, applicants for this job will be required to have a degree in a technical field. Close attention to detail is vital, and because of that, learning the ropes of high-proficiency measuring tools is equally crucial. (2) Naturally, the best applicants will have to be somewhat of a perfectionist and will display the soft skill of patience.



Wholeness Mentor

The problem with our hyper-connected world is that it is increasingly making everyone feel more busy and so the position of a wholeness mentor will be needed. This role focuses on the individual, helping clients plan their lives out so that they feel fulfilled in several areas, physically and spiritually. To acquire this job in the future you will most likely need coaching experience from roles such as life or health coaching. This job requires a person that inspires those around them and strives to help others develop and realise their ambitions, with social network usage that makes them happy on the inside. (3)

Statement

The point is that people are increasingly becoming more invested in making the planet more sustainable by inventing different ways to preserve the planet for longer.

Making use of technology in a responsible way is one technique that can help the environment and improve people's lives by making them easier. For example, paper magazines utilise a vast quantity of paper as well as causing harmful damage to the environment;



Self-driving Car Mechanic

When self-driving cars are fully developed and legalised many jobs will be eliminated. For example, taxi drivers and couriers will no longer be required but with the influx of new technology, new jobs will also follow. Self-driving vehicles aren't going to be able to fix themselves so mechanics will still be in business for the time being. To have this job in the future, applicants will be required to have experience as a mechanic with software skills. Alternatively, experience being a software developer who currently works on cars today would be beneficial. (3)

Overall, the future is drastically changing to match the pace of economic growth. If collective action is taken, the planet is sure to regain its vitality. The long term goal must certainly be to live in a healthier world and create new jobs and industries to support this vision.

Written by: Sophie Cumber
Title: Writer, Amnick
Designed by: Toby Boyd

Sources

1. [Ethical Sourcing is the process, through responsible and sustainable methods](#)
2. [Jobs of the Future](#)
3. [Cool Future Jobs](#)

Emperor's Renewable Clothes: From plant-based to Spider DNA, this is the fabric of our future

Environmental issues are a big concern and are increasingly recognised as a global emergency in 2021. Fashion is a glamorous industry yet it is the second-most polluting in the world, after oil (Rathinamoorthy, 2019). The industry has been criticised for environmental degradation due to its unethical practices, depleting natural resources, biodiversity loss and air pollution. One such major problem is garment waste in landfill.

45 Garment waste is made up of both natural and synthetic material and much of the clothing production in the fashion industry, it uses synthetic materials such as polyester, nylon, and acrylics. Polyester is derived from large amounts of petroleum which uses an energy intensive process and are made from complex and problematic polymers which are non-biodegradable. A polyester shirt, for example, may take up to 20-200 years to decompose (Nidhi, 2020). In addition, materials like polyester use a considerable amount of harmful toxic chemicals such as nonylphenol ethoxylates, phthalates, heavy metals, alkylphenols, formaldehyde and amines. When these substances rot, acid gases and toxic chemicals are released into our atmosphere. The chemical dyes leech into the earth and groundwater, causing serious damage that exacerbate the environment and human health problems (Claudio, 2007; Rozas, 2017).

Consumers are aware of the current environmental situation and want to see fashion retailers change their approach on how their products are made (Géhin, 2020). Fashion companies, from luxury labels to fast fashion brands, are making a shift of paradigm by using sustainable materials in their products.

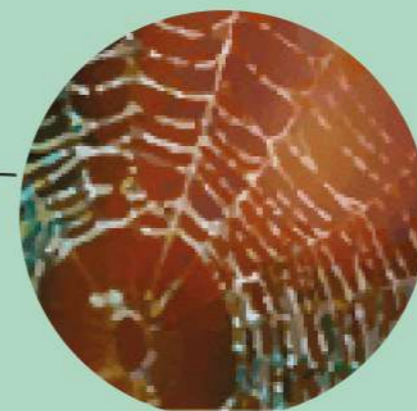
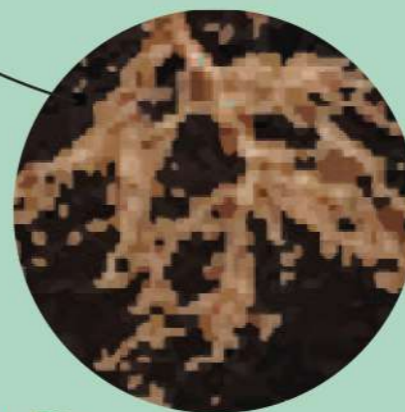
Stella McCartney, a champion for sustainability, uses materials such as FSC-certified forest viscose, fur-free materials, recycled polyester, vegan silk, alter-nappa (vegan leather) and vegan wool in her collections. Fast fashion giant H&M launched its Conscious Exclusive collection featuring Piñatex which is derived from 480 pineapple leaves. Running towards a greener environment is Reebok who created its running shoes using natural materials such as bloom algae, castor bean oil, eucalyptus bark, natural rubber, and recycled materials. It is USDA certified with 59% plant base and recycled material (Bryne, 2020).

Bolt Threads, a biotechnology company based in California, produced sustainable and innovative materials to produce vegan silk. Bolt Threads studied the silk that spiders make, specifically, its DNA and replicated the characteristics of the fibres to produce its vegan silk called Microsilk. Microsilk DNA is made entirely from yeast and sugar and has high levels of elasticity, durability, and softness. In addition, the production of the synthetic silk produces less pollution than regular silk, creating long-term sustainability.

Another innovative material invented by Bolt Threads is called Mylo, a new synthetic leather material made from the root structure of a mushroom. Unlike natural leather which uses synthetic dyes, Mylo is treated using English breakfast tea in its dyeing process to give the material a variation of leather-like colour.

And, do not be alarmed when your next raincoat is made from crab shells and insects. Created by researchers at the Fraunhofer Institute in Germany, this genius innovative material called Chitosan is used as a water repellent coating. Chitosan is a great substitute for synthetic material derived from fossil fuels (Mowbray, 2021).

46 Researchers are experimenting with advanced and innovative technology all the time to develop new materials for a sustainable environment and continually collaborate with fashion companies to create a sustainable vision for the future generation. A vision for tomorrow, a vision for our future and a vision for all well-dressed mankind!



Written by: Alisha Ahmad
Title: Writer, Amnick
Designed by: Louise Olbury

Microsoft Azure Cloud for Smart and Sustainable Cities

An interview with **Jose Antonio Ondiviela**,
Western Europe Director-Smart Cities Microsoft, Spain



Can you introduce yourself, your current job/main interests, please?

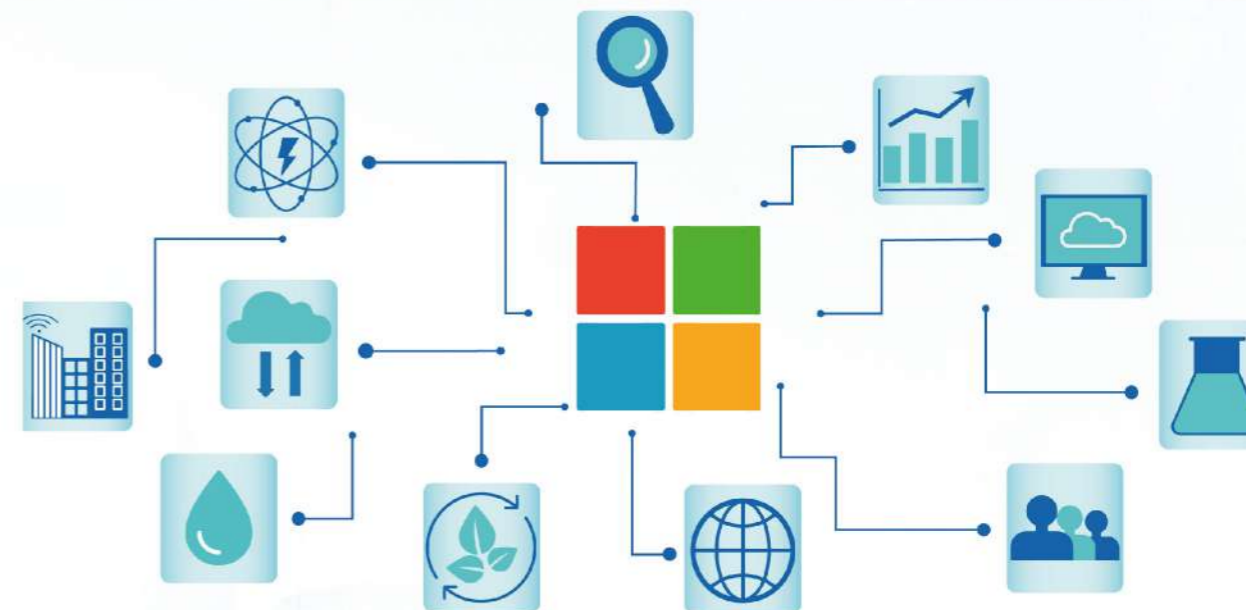
My name is José Antonio Ondiviela and I have been the Director of Microsoft's Smart Cities Solutions program for Western Europe Public Sector Government since 2011. In my spare time, I cultivate an academic profile in helping the cities to be more attractive for talented citizens.

In terms of recovery from the COVID-19 economic impact – even for the Smart Cities – what can we expect for sectors such as hospitality, tourism, restaurants etc., in the future? And what for other frameworks of public life?

The mentioned economic sectors won't be the same, considering that the impact of the COVID-19 pandemic will last for several years, a structural change is possible and even necessary. A particular role will have to be held by a new level of digitalisation for delivering the services. For the transport systems, the social distance must be guaranteed. For the education services, the remote teaching must be made available. Moreover, the healthcare remote services should be the regular ones, the "in person appointments" having to be fixed if only necessary.

Referring to Microsoft's online resources, "Azure" seems to be playing a central role. How could you introduce it?

Microsoft Azure is the most advanced analytical platform in the world. It has more data centres than Amazon and Google together. More precisely, Azure has more than 60 regions worldwide, each region a set of interconnected data centres. Microsoft manages the customer's data in compliance with judgements and the guidance from EU data protection authorities as well as the European Data Protection Board, extending GDPR rights to its customer base.



Can you cite some of Microsoft Azure's salient features that can make the difference – precisely on what regards Smart Cities and their sustainability?

Microsoft is the leading worldwide IoT application platform for Smart Cities, with its Azure IoT, AI, and Digital Twins services. The Digital Twin is a virtual model of real-world connected environments brought to life with real time data from IoT sensors and other data sources. Azure Maps provides several geospatial services, for instance regarding real-time traffic, public transit, and weather data. Microsoft Azure makes commercial solutions available from its partners – ESRI, Bentley Systems and Siemens among them.

Can Microsoft Azure have an important role to play within the economic and social frameworks?

Microsoft Azure has approximately two hundred thousand partners worldwide, half of them within Europe. The number of both direct and indirect jobs it can create is about twenty million. Microsoft doesn't sell directly, instead it offers horizontal platforms. Our partners and integrators deliver the vertical solutions and technical support. For every euro Microsoft makes in a project, its partners typically make 12 in software, hardware and services. Among the several Social Responsibility Programs, in terms of contribution to the increase of social-economic inclusion, Microsoft offers worldwide assistance to skill development initiatives and AI solution adoption for start-ups.

If we consider environmental and climate change issues, how can you describe the contribution of Microsoft Azure?

Azure has committed to focus on four key areas: Carbon – 100% renewable energy by 2025. Microsoft will have power purchase agreements for green energy covering current 100 percent of electricity consumed by all its facilities. Secondly, since 2012, Azure has been 100 percent "carbon neutral" and is removing as much carbon each year as it emits. Moreover, Microsoft Azure will be "carbon negative" by 2030.

Finally, its goal by 2050 is to remove all of its historical carbon emission since the foundation of Microsoft in 1975.

Water positive by 2030 – replenishing more than it consumes by 2030. The process targets to provide stressed basins with more water than its global consumption across all basins.

Zero-waste certification by 2030 – Microsoft will reduce nearly as much waste as it generates while recycling its solid, compost, electronics, construction and demolition, as well as hazardous wastes.

Ecosystems – Net-zero deforestation from new construction.

Interviewer: Federico Lovo
Title: Writer, Amnick
Designed by: Lena Privalenko

Feminist City



Geographer and Women's Studies academic **Leslie Kern** discusses the ideas surrounding her book. Her research is premised on the idea that our public spaces are not designed for female bodies and that urban environments do not cater for women as mothers, workers and carers.

The podcast touches on the history of women's experiences in cities and the perceived danger towards women who had started to inhabit rapidly growing urban environments. The initial fears that the growth of cities meant an end to civilisation as it was known were articulated in the arguments that womanhood was threatened, with ideas of female purity and status at risk of disruption within city spaces.

Kern takes an intersectional approach to unequal power structures functioning within lived urban spaces, discussing the ways in which class, race and disability are overlooked in city planning and development. She equates gentrification with the "whitening of neighbourhoods", with significant detrimental effects for people of colour living within the area, namely heightened experiences of police violence and general state surveillance.

She makes the important acknowledgement that while gentrification negatively affects some groups of women, in many cities it is often other groups of women driving gentrification. An action which may help some women feel safer in their urban space, such as greater police presence, will enact violence on groups such as sex workers and other marginalised groups. In this way, she avoids a reductive, "universalising manifesto" of women's experiences living in cities.

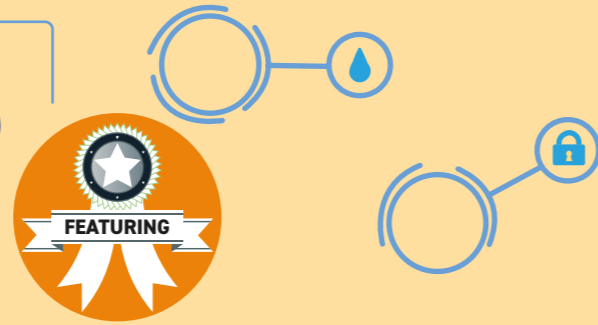
It is a strong case for justice for all those living in city spaces designed to accommodate white-collar men working 9-5 office jobs. The podcast's strongest take-away is a refusal to take the urban, human made spaces we live and work in for granted, and that the perspectives from which we build spaces can be altered.

To listen to the Podcast, please click [HERE](#)

Author: Rachel Wood
Title: Writer, Amnick
Designed by: Lena Privalenko

SMART HOMES

WHAT'S IN IT FOR US?



Smart homes describe those run by machines or robots, carrying out domestic activities in a highly efficient manner. Imagine living in homes where you can remotely control all your devices from one place, increase energy efficiency, maximise home security, get home management insights and improved appliance functionality. The convenience factor here is enormous!

The 1933 Chicago World Fair, whose theme was technological innovation, debuted some of the limitless advancements that can occur with the application of science to the daily life of mankind. It introduced the 'The Home of Tomorrow', a futuristic building which featured home automation with the use of a robot. Living Tomorrow in 2020, which is still under development, has already highlighted the everyday objects that are great feats in technological innovation: Google Home, Amazon's Alexa, Amazon Echo and many others.

Regardless of when the development of smart homes first started, it is clear today that there exists more sophisticated inventions and that the possibilities are endless.

Smart home technologies, often abbreviated to SHTs, combine the advancement in current technology with everyday household appliances, from small energy saving monitors that don't look out of place nestled by your living room decorations, to being able to control your bedroom lights from your phone. The main effect that SHTs have is that the smart micromanaging of households leads to an optimisation of a home not unlike the optimisation of a city; this main effect, then, has the same main issue. If we are to micromanage our homes down to the brightness of our bulbs, then what we simultaneously do is shine a light on a greater number of avenues that hackers can run down.

Nevertheless, the demand for energy optimisation runs high, especially when considering how finite fossil fuels are, and questioning how much of it we actually have left. Therefore, maybe it is worth it if we can save a litre of oil here and there, or a watt of electricity for every screen turned off even if it comes at the risk of cyber attack.

The technology is already vast and still evolving, with multiple benefits for different types of users: People who need help to perform personal care activities such as eating, using the bathroom, getting dressed, bathing,

Humans will spend even less time on activities that can easily be carried out by machines.

as well as activities such as cooking meals, taking medication, and laundry. Smart home technologies also benefit people living alone who are unable to seek help in emergencies, elderly or people with disabilities, people living in rural and remote communities or in urban communities with inadequate health service provision, people who suffer from chronic disease and who need continuous monitoring, and those who wish to

reduce their energy usage.

These social and economic benefits will continue to improve as research and development advances, and smart homes become smarter. Subsequently, humans will spend even less time on activities that can easily be carried out by machines.

Why worry about the right room temperature, lighting and entertainment when all can be managed instantly by a command? Why try to keep up with remembering multiple daily tasks when a machine can send reminders? The potential for improved quality of life smart home technologies can bring about is huge.

The current road bump surrounding the implementation of smart home technologies is cost, making the implementation of a fully smart home only accessible to the elite. Nonetheless, there are motivations for participation for both producers and consumers; SHT's potential to save energy and the costs associated with it, which benefits both the wallet and the environment.



Written by: Ponmile Lawal
Title: Writer, Amnick
Designed by: Noorus Khan



Smart Cities: Emerging Technologies, Trends and Innovations

with Jamie Cudden, Dublin City
Council Smart City Lead



Podcast Review

53



The Engineer Collective podcast series is hosted by New Civil Engineering Collective, bringing people the latest information and interesting stories about the relationship between engineering and cities. In this episode, Nadine Buddoo interviews Dublin City Council leader Jamie Cudden.

Cudden is “extremely passionate about the adoption of emerging tech trends that can be applied to create better outcomes for residents, as well as new economic opportunities for cities.” Having led Dublin’s regional smart city programme since its creation in 2015, in the podcast he discusses how emerging technologies such as “big data, AI, 5G and future connectivity” can help to bring alternative solutions to the way Dublin city is managed and how the future of Dublin city can be beneficial for its citizens.

“From a city perspective we were conscious that there are a lot of challenges we are trying to address... everything from congestion, to how we manage extreme weather events, sustainability to climate action”

– Jamie Cudden 2020

The podcast does not shy away from the challenges the group has faced, from people being wary of smart city innovations, fears over data collection and sharing to the obstacle of Covid-19 in planning and implementation of smart city ideas.

At only 27 minutes long, the podcast is relatively short compared to other podcasts. However, the discussions between Buddoo and Cudden are packed full of information, solutions and a down to earth sense of reality. Having been to Dublin, it’s a beautiful city and I was extremely interested in what the Smart City initiative has to say about its future. Dublin may not become the next Barcelona, with carefully gridded roads and traffic flow, but it’s a city to keep an eye out.

To listen to the Podcast, please click [HERE](#)

54

Written by: Ellen Lamb
Title: Writer, Amnick
Designed by: Emily Rawlings



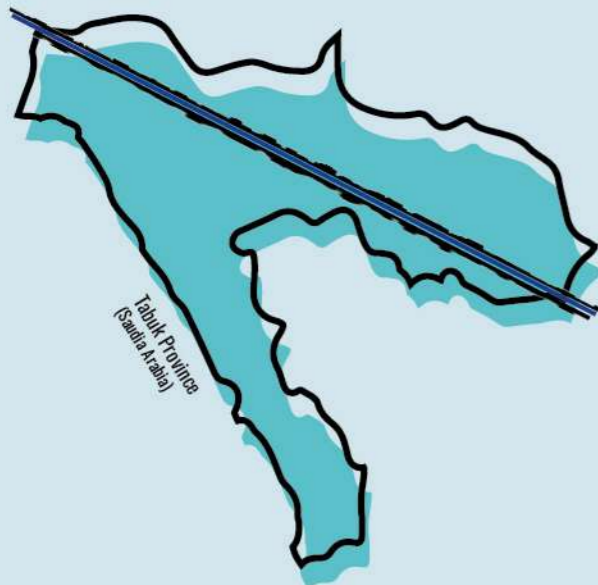
Saudi Arabia Reveals its Vision for a City with No Cars or Streets

Saudi Arabia has announced its ambitious strategy of 'transforming the future of urban lives' by constructing a carbon neutral hyper connected city, in the form of a straight line more than 100 miles long.

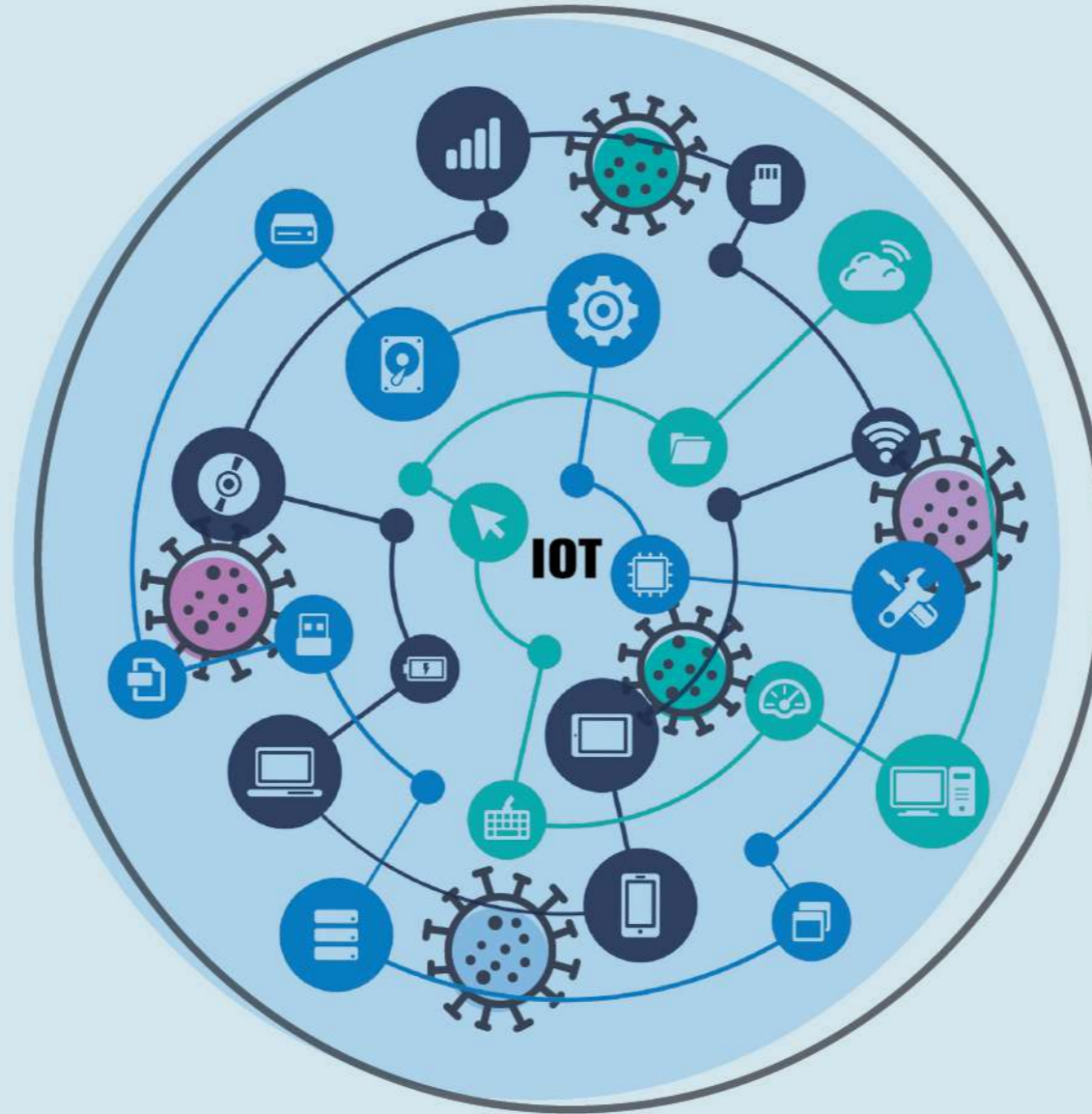
Ultra-high-speed transit and autonomous mobility solutions will make travel easier between communities. The linear city proposes no cars or streets, with one million residents living within a five-minute walk of essential facilities.

Source: [Link](#)

55



Start-ups to Take Part in UK Smart City Accelerator at MediaCityUK



Six companies will be taking part in the UK Smart City Innovation Testbed programme, led by Up Ventures and Connected Places Catapult.

It will be hosted at Salford's MediaCityUK and aims to discover how cities can use technology to adapt to a post-Covid world. In particular, the programme will focus on how the Internet of Things (IoT) can be harnessed to transform the way we live, work and play.

The end goal is to secure investment for prototypes.

Source: [Link](#)

Emerging Smart City Trends to Look for in 2021



Transportation: Smart transportation systems will use sensors to detect congestion in traffic patterns. They depend on cameras to implement speed and traffic infractions and gather data to inform traffic control.



Waste Management: Sensors detect the amount of waste around the city so that workers can clean the rubbish en route.



Smart Parking Apps: Coordinates with smart parking meters to inform drivers of parking availability. The system sends data about free and occupied parking places via mobile applications through sensors.

Source: [Link](#)

56

Written by: Victoria Tarawally
 Title: Writer, Amnick
 Designed by: Noorus Khan

Singapore - The Emergence of a Smart City

As the world reaches new technological summits, modern cities are continuously looking towards Artificial Intelligence to meet the needs of urban dwellers. Here, we take a look at the various ways Singapore is leading the way for smart city success.

Since its independence in the 1960s, Singapore has grown from strength to strength, pulling off a dramatic transformation. Now a world-class metropolis, the city-state is leading the way for the fourth industrial revolution by way of technological innovation.

Being a land constrained state with a population two thirds the size of London, Singapore is looking for high-tech solutions to provide smart, sustainable living space for Singapore's residents and improve the quality of life for future generations. To resist the intense heat of the country's climate, the Singaporean housing board is looking to the use of a silicon-based material to supply the population with heatproof public housing. The material will be incorporated into the roofing of state flats, offering a sustainable, long-term solution for indoor protection against the Singaporean sun. This feature spells just one of the ways Singapore is incorporating smart solutions into its housing developments.

Singapore is also exploring innovative ways to rethink conventional methods of urban transportation. In an interview with National Geographic, award winning architect Professor Jason Pomeroy notes that: "We're thinking about creating structures over roads and motorways - topping up above existing structures [...]"

we're already seeing drone technology becoming so advanced."

Drones have the potential to play a revolutionary role in the smart city environment, having the capability to transform conventional delivery practices. The Singaporean government is throwing its support behind advanced programmes like skyways to test the limits of urban drone delivery capabilities. "At Airbus our visions lie on urban air mobility" Says Skyways lead Leo Jeoh. "Skyways is about enabling this technology, looking towards moving towards a future where we have a flying transportation means in an urban setting."

Whilst the revolution of drone technology will transform resident services, one of the main challenges Singapore faces is sustaining food for the millions in such a land scarce nation.

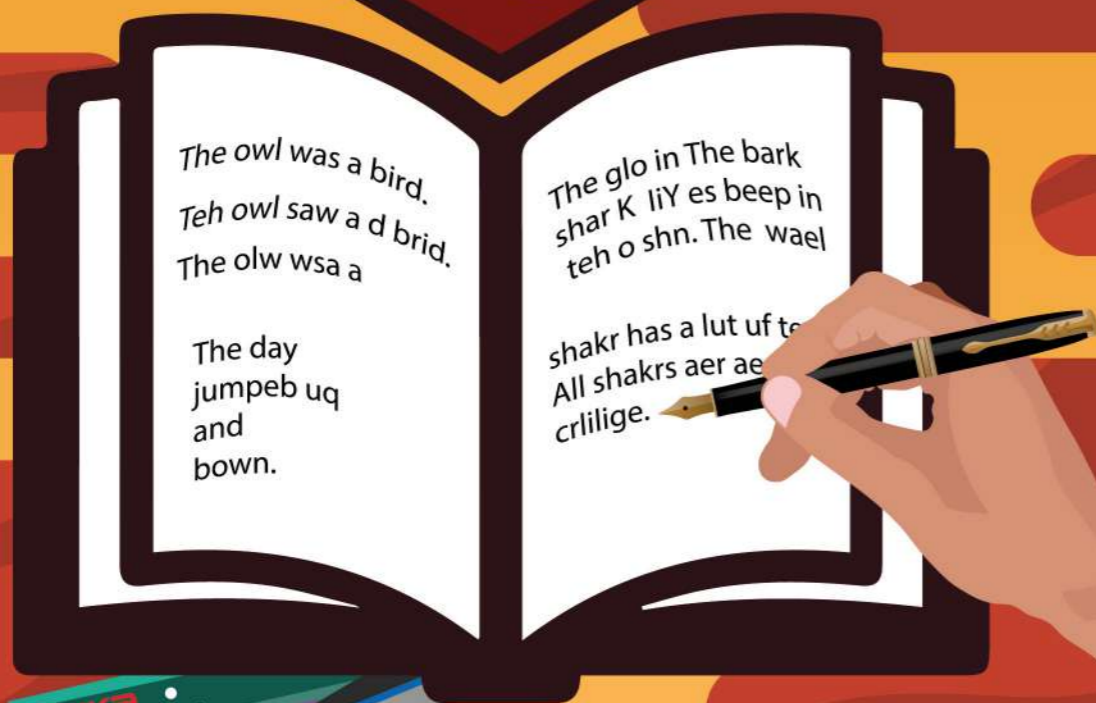
"93% of produce is imported into Singapore, simply due to a lack of land for farming practice." says the founder and CEO of Sustenir Agriculture, Benjamin Swan, in an interview with National Geographic. Through precisely calibrating elemental conditions by way of agricultural technology, Sustenir is able to tackle food sustainability by optimising food cultivation in controlled environments.

"We've learnt that we can emphasise characteristics of the produce simply by manipulating conditions to produce plants that suit the taste of Singaporeans." says Swan, "... [vertical farming is allowing nations like Singapore to] leverage the use of buildings to grow products; and with the efficiency we have within our footprint, we believe that, one day, we will produce enough produce indoors to sustain Singapore's land."

Sustenir is but one of a multitude of innovative companies joining Singapore's burgeoning start-up scene. The state has an ever-growing appetite for health-tech start-ups, attracting over \$105 million in investments in 2018. One of the country's more notable start-ups, Innosparks, focused on solving the most pressing challenges around health and the medical field through technology. Among their many tech innovations, the company has collaborated with health tech company NDR in designing an automated needle system. This is a medical assistant that will allow surgeons to more precisely align their needles with their targets, relieving them of stress and time loss. Innosparks is also addressing global health issues with the AIR+ smart mask, a high-quality smog mask that effectively vents heat, moisture and carbon dioxide, allowing for more comfortable use.

Singapore has capitalised its creative DNA to support start-up innovation and catapult itself into the future. The nation stands as a prime example of how technological advances will bring profound change to how we live and work.

Written by: Victoria Tarawally
Title: Writer, Amnick
Designed by: Kim Muyano



No Parking Podcast: Dyslexia, Reading Difficulties, and the Reoccurring Coincidence of Success.

To listen to the Podcast, please click [HERE](#)

Dean Kamen is the main focus of this podcast episode. Alex, the presenter, summarises him thusly: "Kamen is way ahead of his time, but unlike many of the others, he's not focused on his own glory. His focus is on the betterment of mankind."

Dean Kamen is also the founder of Deka Research, FIRST Robotics, and the Advanced Regenerative Manufacturing Institute (ARMI).

Dean's inspiration was his brother, as he was a fast reader and brilliant at emphasising what his teachers wanted their students to learn. This contrasted against Dean, who could not read as fast due to his dyslexia.

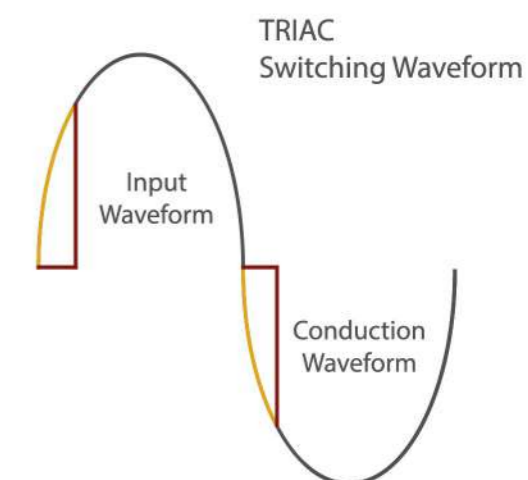
Despite his struggle, Dean remembers his father's advice: "Dean, don't worry. Just find something you love to do, get good enough at it that people will want it. And you can make a living doing it." Because of this, he started looking at problems to solve, rather than As and Bs.

So, in junior high school, Dean started a business creating TRIACs to regulate current. Despite his shortcomings, his persistence paid off. By the time Dean was in high school, he built a system that ran all the lights in the national history museum, while also making quite a lot of money.

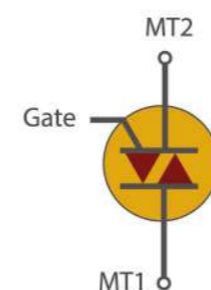
Dean feels more comfortable with his dyslexia now: "...there are a lot of very successful people with dyslexia, or they couldn't learn to read at an early age, including myself. And I started thinking... almost all things that happen, at a statistically significant level, is not a coincidence, there is some cause and effect there."

In other words, he believes that those who have dyslexia, or reading related difficulties at a young age, have a greater chance of success later in life.

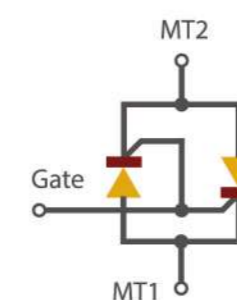
Ultimately, I found this incredibly interesting and worth a listen. If you have struggled during your childhood, this would be a great episode for you to listen to - not only to bolster your hopes but also to inspire you, to make do with the problems in your life just like Dean did in his.



TRIAC Circuit Symbol



TRIAC Equivalent Circuit



Written by: Harley Nieslony
Title: Writer, Amnick
Designed by: Jonathan Oke



News Bites: TECHNOLOGY



2021 Consumer Electronics Show's 3 New Covid Tech Gadgets - As reported by Chris Nutall of Financial Times

This year's Consumer Electronics Show was, unsurprisingly, focusing heavily on Covid-19 inspired products. From the use of "disinfecting robots, myriad tools to help with handwashing, and augmented reality applications to entertain and recreate pre-Covid social lives", it is evident that the global pandemic is at the forefront of new technological advances.

Binatone Unveils their MASKFONE, the Future of Protective Face Covering?

Smart technology company, Binatone, unveiled at the CES 2021 their new MASKFONE. The mask incorporates both "protection" and "convenience" for the wearer. With a variety of innovative features such as voice projection technology and replaceable features, Binatone seeks to revolutionise the mask of the future.

New Project to Help Drones "Truly Take-off"

Connected Places Catapult has launched the Unmanned Aircraft Systems Authentication System (UASAS), after winning funding for their project.

"The commercial potential of drones is staggering." Says a spokesperson for the company. The emergence of this technology questions whether drones are to become a popular household device, as they have the ability to access areas the average person would not normally have access to.

The UASAS project aims to create an authentication system to provide a trusted service for drone usage and prevent cyberattacks. This would allow organisations to ensure that household drones are only permitted to fly into certain zones.



Written by: Victoria Tarawally
Title: Writer, Amnick
Designed by: Jonathan Oke

Investment: Brain Implants Shift Science Fiction Into Science Fact



Elon Musk is an extraordinary character. He has invested much of his wealth on advancing technological achievement for the good of humanity. He has been involved with many projects, from investing into Tesla cars, to Californian solar energy projects.

One of Musk's recent investments assists in the experimentation of brain implants in July 2020.



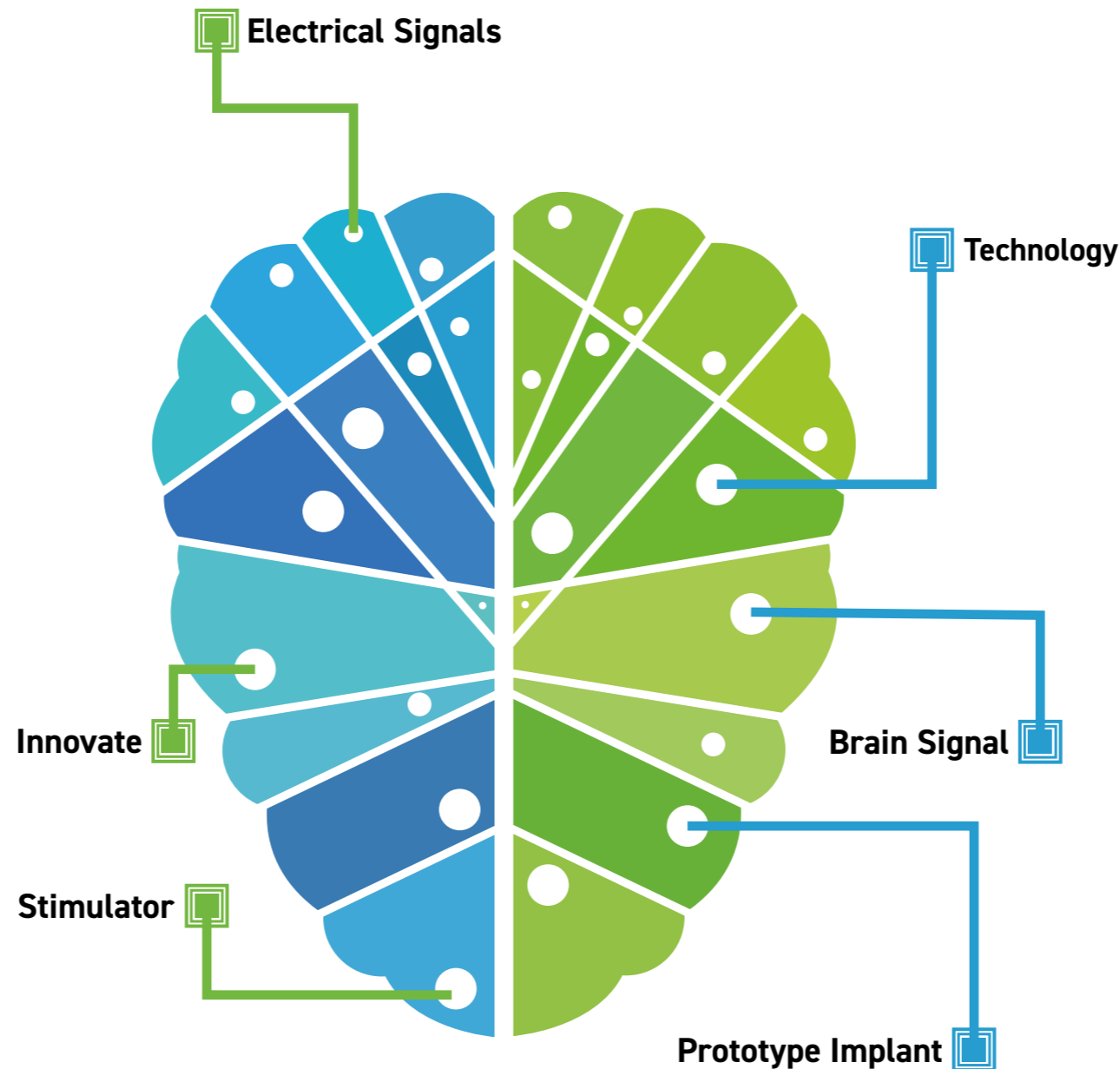
Musk held a demonstration involving a pig named Gertrude to show off his latest endeavour in August 2020. A prototype implant had been embedded in Gertrude's brain. The device monitored Gertrude's brain activity when carrying out activities such as eating and sniffing. When brain activity was detected, the device would flash and show this in real time. The neural interface detected up to 1000 electrodes. To put this

into perspective, a highly compact EEG (electroencephalography), which is designed to record human brain wave activity, can detect as much as 256 electrodes for up to a few hours.

“Musk hopes that these implants will be able to provide health benefits such as allowing paralysed people to send electrical signals to pieces of technology.”

This idea was first tested on rats in 2016, by Musk's organisation 'Neuralink'. However, the idea of brain implants is not new. The FDA (Federal Department Agency) has already approved brain stimulation devices to treat tremors in Parkinson's Disease. There has also been multitudes of research carried out, such as the experiment conducted by Brown University scientists David Borton and Arto Nurmikko and their colleagues; an implant was also tested on a monkey, a decade before Musk's first tests.

The FDA suggested there are numerous challenges before the neuralink implant is ready, such as safety concerns around damage to the brain of whether the technology can withstand the human body.



Musk hopes that these implants will be able to provide health benefits such as allowing paralysed people to send electrical signals to pieces of technology. This is closely related to the sentiment held by Dr Michio Kaku, who suggests that 'telepathy' is possible through the use of computers and radio. There are already implants being used to help with specific health conditions, such as epilepsy. The Vagus Nerve Stimulator (VNS), is one such piece of technology, used to treat seizures that do not respond to seizure medication. The VNS is designed to help control, as well as lessen seizures that occur in patients with epilepsy. It does this as the implant wire from the device connects to the vagus nerve in the neck and sends electrical pulses to the brain. In one study, VNS decreased seizures by 28% within the first 3 months of usage.

With technology constantly progressing, it is becoming foreseeable that brain implants may be an innovative new way of resolving problems that many people do struggle with, such as epilepsy. It is estimated that 1 per 100 people have an epilepsy diagnosis and 1 per 220 children, an estimate of roughly 600,000 people dealing with the condition throughout the United Kingdom.

Perhaps brain implants will not only resolve issues that we face, but actually help us connect in ways we haven't yet experienced on this planet, like achieving telepathy.

Who knows where we could be in another 10, 25, 50 years' time? This is the beauty of science - it is changing all the time. What is certain is we will have achieved many of the things people once deemed science fiction as scientific fact, in the near future. For all the Trekkies and Star Wars fans, I think this is the century which will deliver your hopes and dreams - and as a result of further research, we may be able to assist those with specific neurological conditions, to create an experience of better life.

Written by: Harley Nieslony
Title: Writer, Amnick
Designed by: Toby Boyd

Sources

- [Musk's Investment Into Solar Energy Stats](#)
- [Elon Musk's Wealth](#)
- [CNN Article About The Brain Implant](#)
- [FDA-Reason For Disapproval; and Monkey Study Details](#)
- [Details About Anti Seizure Implant/VNS](#)
- [Dr Michio Kaku: The Possibility Of Telepathy Through Using Computers](#)
- [Epilepsy Statistics-United Kingdom](#)

Future Thinkers Podcast Review

Episode 32 - Aric Dromi - Smart Cities of the Future

The Future Thinkers podcast is centred around evolving technology, society, and consciousness. Hosts Euvie and Mike invite expert guests for insightful, relevant topics about how our lives can, as they become increasingly integrated with technology, transcend its current state.

Episode #32 welcomes guest Aric Dromi, founder of Tempus Motu and Chief Futurologist at Volvo, to envision the future of smart cities and the possibilities, challenges and prospects that these developments will offer humanity.

"The future of society is written in code"

- Aric Dromi

Dromi stresses that technologies like artificial intelligence and blockchain are positioned to radically transform how our cities and industries will function.

Case in point: Dubai. The mega metropolis has become one of the first cities to run its government on blockchain technology, along with Singapore, which seeks to optimise the way the city functions by harnessing data via new data-capturing methods.

"Technologies such as AI and VR will enable cities to create digital citizenship models, which by default will recreate GDP structures."

- Aric Dromi

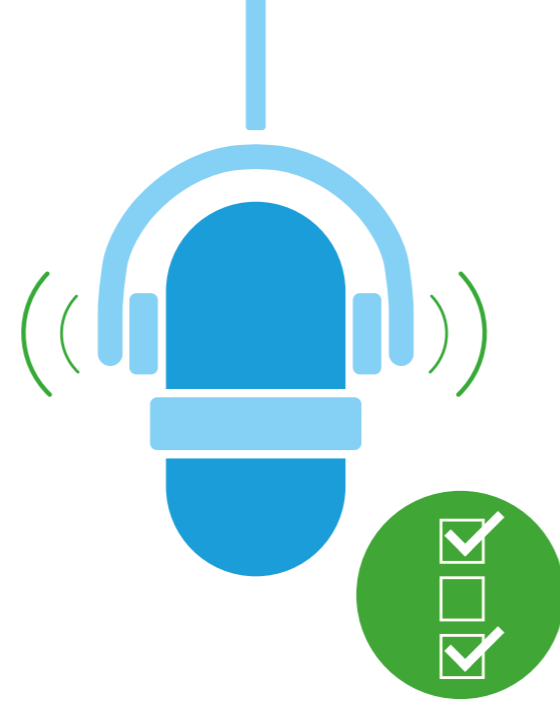
Critically, Dromi predicts that cities of the future will have to function more like large corporations to survive change. These future cities may be unrecognisable when compared to the cities which we currently know.

Meta-layers of connectivity through blockchain, the internet of things, artificial intelligence and augmented reality could make cities less geographically defined. For example, you could physically be present in one location, whilst attending a conference at another. These are some of the cutting-edge ideas this podcast dives into.

It is a must listen for any inquisitive mind who seeks to expand and challenge their view on smart cities.

The presenter's sense of humour, experience and thorough questioning made this a joy to listen to.

To listen to the Podcast, please click [HERE](#)



Written by: Victoria Tarawally
Title: Writer, Amnick
Designed by: Stuart Kinnear

Survival of the fittest: Why Industrial Internet of Things is No More an Option but a Necessity?



Although the ongoing pandemic has elevated the idea of digitalisation, many organisations are still unsure about its needs and benefits. Indeed, many German companies have no clear plans for digitalisation and big companies actually want to “maintain the status quo” (Source: German companies are crawling after digitisation). products? How can digitalisation benefit our business?”. How can digitalisation benefit our business?”. I was recently confronted with questions like these, and here is my argument.

The iPhone's success cannot be associated with its features like touchscreen, camera, or internet access. Brands like IBM, Nokia, Kyocera, and LG were the first to launch these features, a decade earlier than the launch of iPhone 2G in 2007. Interestingly, it is not the hardware but a digital product – the Appstore – that gave iPhone that competitive edge. The Appstore revolutionised the way we use phones by providing access to the vast digital marketplace.

It contains millions of applications for all interest groups, which can be accessed anytime and anywhere. Activities or transactions like ordering a meal, booking tickets, authorising payments, streaming music or videos, weather updates, daily news etc. have never been so convenient.

The Appstore not only turned the iPhone into the product of the century but also it helped Apple to boost its digital economy and to create new business models. Another example is Uber. What may sound like a “taxi company” does not own even a single taxi. The success of Uber lies in its App and the business model around it. Uber has shown that one does not need to run big manufacturing lines and manage multiple assets or busy salespeople to achieve success. But again, Uber was not the first brand to introduce ridesharing (Taximagic introduced the idea in 2008 in San Francisco).

What can we learn from examples like these? Let's first try to understand the manufacturing world's problem: If you are producing industry goods like machines, motors, pumps, compressors etc. then you know it is quite challenging to enhance the product after a certain period. This is what we call the late “maturity stage” of a product within its life cycle. Once in this stage, the product features are no more considered unique, competition is at the peak, and sales numbers stagnate.

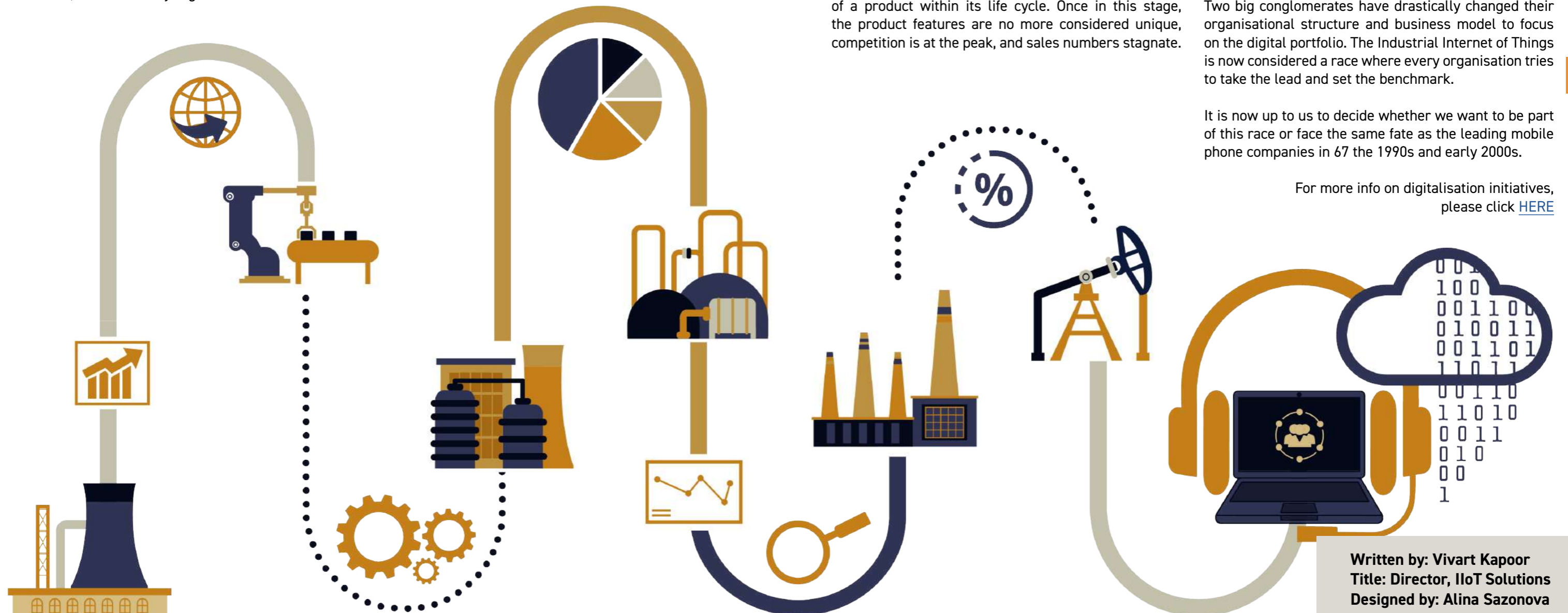
With manufacturers worldwide catching up fast with new manufacturing techniques and skills, product commitments or statements like “German quality” or “Japanese precision” will soon be considered indifferent. The industrial product in its present form would lack substantial differentiation factors. Thus, resulting in a downturn.

“Innovate or die” as Peter Drucker once said, we must become the “Apple” or “Uber” of the manufacturing world and bring in that game-changing element. Turning products into “IoT ready” and creating new “digital products and services” on top of that is the need of the hour. Data is the new gold and providing access to device-related data is the key to success. Utilising the device data for complex applications like process monitoring, process optimisation, analysis, and prediction is a win-win situation for both the supplier and the process owner or end-user.

Not the product itself, but the ease of integrating it into digital infrastructure and its usability to derive valuable process insights will determine its unique selling point. Several organisations worldwide have started investing massively in digitalisation initiatives. Two big conglomerates have drastically changed their organisational structure and business model to focus on the digital portfolio. The Industrial Internet of Things is now considered a race where every organisation tries to take the lead and set the benchmark.

It is now up to us to decide whether we want to be part of this race or face the same fate as the leading mobile phone companies in 67 the 1990s and early 2000s.

For more info on digitalisation initiatives, please click [HERE](#)



Written by: Vivart Kapoor
Title: Director, IIoT Solutions
Designed by: Alina Sazonova

Direct Energy Weapons, Leading Battlefield Science into the Next

DEWs, otherwise known as Direct Energy Weapons, are a type of weapon that does not require ammunition to fire. It is based on laser and frequency defences. According to Penny Mordaunt, the Defence Secretary back in 2019: "Laser and Radio Frequency technologies have the potential to revolutionise the battlefield by offering powerful and cost-effective weapon systems to our Armed Forces."

Its purpose: To both disrupt and destroy enemy drones, as well as incoming missiles.

This form of weaponry is coming into use for the Royal Navy in the UK by the year 2023. The Ministry of Defence is intending to invest up to £130 million into this new technology of directed energy weapons. This investment includes the establishment of a new Joint Programme Office to oversee the project and its management.

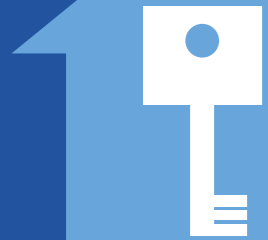
The future is beginning to take shape in the present time. The next frontier of technological advancement is here, and will be a modern technology in a handful of years.



Written by: Harley Nieslony
Title: Writer, Amnick
Designed by: Matina Fylaktou

The Rise of the Human Microchip

Microchips are something that pet owners are very familiar with, but could they become common for us too?



In mid-2019 Steven Northam, director of medical equipment manufacturer BioTeq, predicted that human microchipping was on the rise and will slowly become commonplace in the next decade or so. But what does this mean?

The process of being microchipped is relatively painless as a small grain of rice sized RFID chip is injected under the skin between the index finger and thumb of the user. An RFID chip is a small two-way radio chip which can contain and transmit information that the user programs it with. This means that when the chip is scanned it can do a multitude of things from opening doors that have chip scanners to paying for your morning coffee on the way to work.

The future of microchipping, although not entirely known, could potentially impact human daily life in the following ways;

Medicine: Microchips can be used to store medical data, making it easier to treat patients who may not be able to communicate due to an injury or disability. This could reduce waiting times at local surgeries and hospitals and reduce pressure on emergency services as paper files would not be necessary.

Retail: Just like the contactless chip in your payment cards, the chip in your hand could be programmed with this information meaning society could in essence become cashless. This could also lead to the end to forgetting or losing cards and money in general.

Security: Many companies already use microchip technology as a security system. This is typically incorporated into having microchips in company.

But, what if those lanyard chips were under your skin?

No more forgotten lanyards and security would become a lot tighter due to the fact that obtaining a chip would be far more difficult. This could also be translated into home security with front doors being microchip activated therefore reducing the risk of burglaries, making the home owners feel safer. It also eliminates the risk of you losing or forgetting your keys. I don't know about you, but I have forgotten my fair share of lanyards and keys so microchipping looks pretty good to me. However, there are some risks.

Critically, microchips can hold substantial amounts of important information. Microchip users could become a target for hackers, who could not only copy the microchip information, but rewrite or erase the information altogether. This could make identity theft more an everyday occurrence.

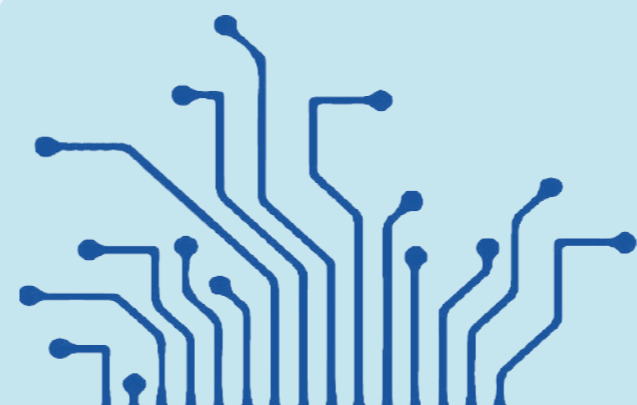
Another issue with Microchipping is that the chips may pose a threat to our health. Due to the volume of information going onto the chip you may need more than one. However, these chips don't always stay in their place meaning they can migrate to other areas making them problematic or even ineffective in a medical emergency.

Other microchipping risks include electrical hazards, infections and reactions with medical devices for example we could see a situation where one microchipped patient would not be able to undergo an MRI scan due to the embedded metal microchip. Thus, we would be left to weigh up which holds more importance.

In conclusion, the popularity of the human microchip is rising... but at what cost?



Written by: Emily Tuck
Title: Writer, Amnick
Designed by: Bridget Jones



Shifting Patterns, Safety and Social Exclusion

- Interview with Jennifer Terry



In this interview, *Jennifer Terry* Associate Director Amnick, USA, delves deep into the effects of recent events on the transportation sector, with an eye towards the future

Despite many societal changes throughout the coronavirus pandemic, what has been the biggest change in terms of transport?

US deaths due to vehicle crashes shockingly increased 8% from 2019 to 2020, despite Americans driving 13% fewer miles in 2020. The fatality rate per 100 million miles driven increased 24%, the largest annual percentage increase since 1923 (National Safety Council quoted in USA Today). Increased speed and use of drugs are contributing factors. Crime has risen on some US transit systems as ridership dropped. I hope behavioural science researchers delve into these phenomena and other pandemic anti-social conduct to improve education, engineering (design), and enforcement associated with delivery of transport systems and services.

What will be the long-term effects on transport after the pandemic is over?

I think that travel will shift among modes, days of the week, and time of day. I hope that these changes reduce the intensity of peak period, peak direction travel, allowing more people to travel under less congested conditions and incentivising mass transport providers to shift resources to non-peak period, non-peak direction travel to serve low-income people

Tell us about yourself and your role in the transport sector?

I am an urban planner with experience in local, state, and federal government and the private and non-profit sectors for transport, land use, and digital equity planning. My interest in transport stems from a realisation of its vital importance in connecting people to the people and activities that make life meaningful and a recognition that transport access is fraught with serious equity issues.



who are more likely to work non-traditional hours, have non-traditional commutes and to rely on mass transport.

What area of transport requires the most attention in light of the pandemic? Has the pandemic revealed or highlighted any issues surrounding transport?

To control the pandemic, society must reach herd immunity. Therefore, we must either transport people to the vaccine or the vaccine to people. Wealthy nations must provide sufficient vaccines to less wealthy nations for all nations to reach herd immunity at roughly the same time. Within nations, governments must help vulnerable people to overcome barriers to vaccination like poor digital access and skills (which affect appointment scheduling) and inadequate transport, which can impact people's ability to travel to an appointment.

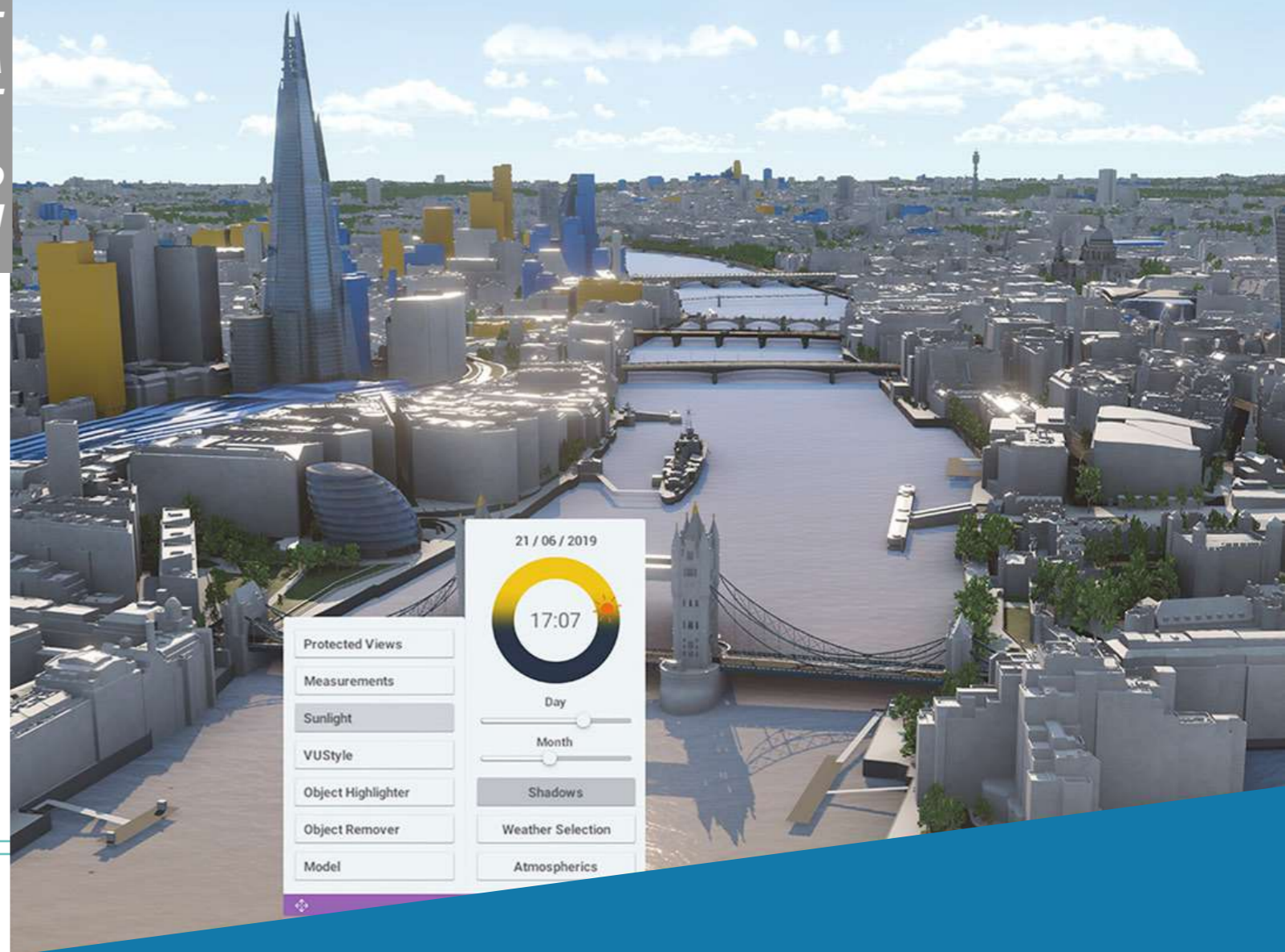
Safety has been a chief concern throughout the pandemic – what measures are currently in place and what more do you feel could be done to protect employees as well as transport users?

Transport riders and employees deserve a safe environment. Agencies should continue requiring masks system-wide (at vehicles, stops, and stations); offering employees free vaccines onsite or paid leave for offsite vaccination; and offering paid sick leave to address COVID illness for themselves or family members. Some agencies also offered mental health services to help employees process the death of colleagues, family, and friends; this should continue. Agencies should offer employees mental health services to deal with the stress of incidents with unruly riders who refused to mask. Agencies also may consider how to shift enforcement of mask compliance to law enforcement.



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What are the mechanisms by which transport impacts inequality in urban areas and vice versa?

Adequate transport facilitates access to education, employment, healthcare, recreation, other activities, friends, and family. Inadequate transport prevents people from accessing activities and loved ones by not serving desired destinations or times of day, being infrequent, being unaffordable, or being inaccessible to people with disabilities. Therefore, inadequate transport cuts people off from loved ones and opportunity and exacerbates inequality across all spheres of life.

What role does transport play in the issue of social exclusion? What can be done to improve accessibility to transport?

The pandemic cast a spotlight on glaring inequities between and within countries in access to transport, internet access, and digital skills and the roles these play in obtaining employment, healthcare, education, socialisation, etc. Because use of digital tools can eliminate some trips, to recover sustainably and equitably, cities and nations should provide both multi-modal transport with adequate time of day, frequency, and geographic coverage AND access to high-speed internet and digital skills to reduce inequities. Both must be affordable and accessible to people with a range of physical and cognitive disabilities to reduce social exclusion.

Finally, what does the future of transport look like to you – in the new normal?

In the near term, some people will fear public spaces and avoid mass transit, rail, and airlines. Many will drive, but others may prefer to walk or bike as a healthy, affordable alternative to driving and transit. Others are eager to travel by any means possible. Accessible, multi-modal transport can serve both sets of people. In the long term, constraints dictated by climate change, congestion in many modes of the transport system, and the unaffordability of some modes for many people suggest that multi-modal transport will remain important.

The views and opinions expressed herein are those of the author and do not reflect the official policy or position of any other agency, organisation, employer or company, to include any federal, state or local entity.

Interviewed by: Eleonor Merry
 Title: Writer, Amnick
 Designed by: Lena Privalenko

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Intelligent Transport

Episode 13 - Podcast Review



The 13th instalment in the series, 'Intelligent Transport Podcast' stars Luisa Wahlig – director of industry solutions for [HERE](#), a Dutch company that provides mapping and location data to both individuals and corporations, alongside Innovation and Development Manager, Julian Renninger.

This episode discusses intermodal transport and the ever-changing system of mixed-mode commuting to the public and the transport industry. It aims to predict the future direction of the global community and the necessary steps to transcend a privately-owned car dependent system. This includes the balance between private and public sector control of certain services and the impact of Covid-19 on the industry.

Intermodal transportation is by no means a new concept. In today's society we view it as a broader concept. People are willing to use multiple modes of transport as long as it is unobtrusive and convenient; cycling is preferable when there is good weather. Intermodal transport is therefore not determined by time constraints but more so by personal preferences and lifestyle.

Two issues highlighted in this podcast: Limited access to public transport and the lack of integration of different modes of transport. In rural areas public transport links are scarce and often limited to peak travel times only. Low frequency of public transport is also an issue within major cities; night services are not reliable transport methods.

Another issue is how isolated transport systems prevent efficient intermodal transportation; bus, train, tram and even air transport systems all operate independently of each other, with differing schedules and locations.

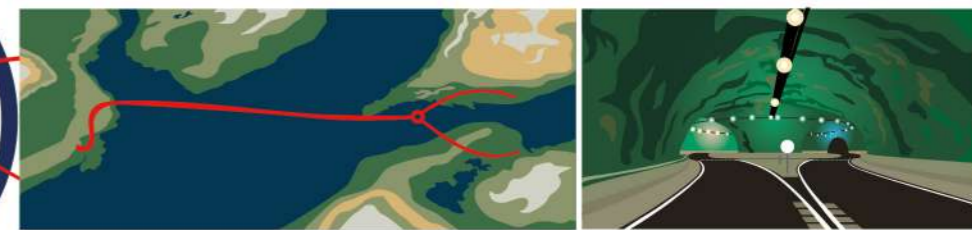
If intermodal transport is to become more widespread it is vital that these systems become integrated. The difficulty with this is the balance between the public and private sectors of transportation services, with the primary motive of privately owned transportation systems being financial gain whilst those that are nationalised are developed for passenger efficiency.

Several thought-provoking comments about the transportation networks in modern society, as well as a thorough analysis of consumer behaviour and patterns, are given. Covid-19 is also brought in as a developed analysis of how global events influence intermodal transport habits. Overall, a concise technical podcast!



To listen to the Podcast, please click [HERE](#)

Written by: Dipo Balogun
Title: Writer, Amnick
Designed by: Emily Rawlings



News Bites: TRANSPORTATION

Go-Ahead

Transport corporation Go-Ahead have developed the first fully-electric bus fleet that will operate in the North East of England. This comes less than 2 years after the Government pledged to go 'net zero'. The convoy consists of 9 vehicles, all electric, which will provide transport for approximately two million passengers annually across Newcastle and Gateshead. CEO David Brown said: "The COVID-19 pandemic has put an incredible strain on the country, the economy and public transport, but tackling climate change remains as important as ever."

All-electric Forecourt

Gridserve, an international sustainable energy business, has created the UK's first all-electric, car charging forecourt, which opened in December 2020. Essex will be home to Britain's first electric forecourt providing 100% renewable energy. This will be the first of over 100 sites established by Gridserve as part of a nationwide £1bn programme across 5 years. Electricity for the forecourt is generated from both the solar power canopies above the chargers, and a network of hybrid solar farms, making its power completely renewable.

Morgan Stanley's Space Summit

Morgan Stanley held its 3rd annual space summit virtually last year due to the coronavirus pandemic, but Analyst Adam Jonas told CNBC that hundreds of investors and observers participated in the event on Tuesday.

SpaceX was a topic of discussion at the summit, with the multi-billion-dollar corporation being noted as the "apex player" in the field. The influence that the company has on the space industry cannot be understated; it was indeed mentioned that SpaceX's growth has enabled the growth of other organisations in the industry.

Undersea Tunnel Network

After more than 3 years in production and US\$166m in expenses, The Faroe Islands are opening up an underwater roundabout tunnel. This connects the Streymoy and Eysturoy islands spanning 11km. The network of tunnelling will cut down journey time for local residents by almost 1 hour, travelling between the two islands.

The project is being developed by Eystur-og Sandoyartunlar, a company set up by the County Council of the Faroe Islands, an autonomous territory comprising 18 islands within the Kingdom of Denmark.

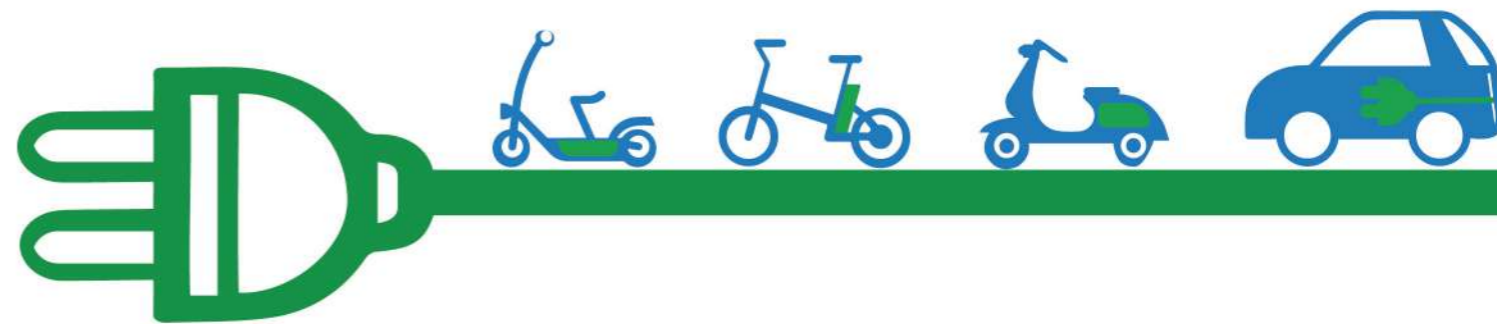
German Hydrogen-powered Train

Two German corporations, Siemens and Deutsche Bahn, have begun development of a hydrogen fuel cell train. As governments are now encouraging technologies that reduce the environmental impact of transport systems, many companies are following suit.

Both companies announced that trials will start in 2024 with the model using a combination of lithium-ion battery and fuel cell battery. When the year-long pilot gets underway, the hydrogen train will take the place of diesel trains. It's hoped the trial will cut down on 330 tons of carbon dioxide.

Co-mobility Hubs

Sharing is Caring for a Carbon-neutral World



As the world emerges from Covid, many cities are looking to change how their services work and improve them for local residents. Transport is a key target for improvement, especially with the current environmental concerns. The UK government declared a climate emergency and is committed to making the country reduce carbon emissions to net zero by the year 2050. One method that many councils are looking at to improve transport services in an eco-friendly manner is co-mobility hubs. These hubs are already in use in North America and Europe and be seen in a city near you.

As the UK is aiming to reduce carbon emissions, it is of vital importance to reduce our carbon emissions from transport. Transportation carbon emissions make up 27% of all greenhouse gas emissions in the UK according to the Department for Transport. CoMoUK, the national charity for the public benefit of shared transport, has been instrumental in bringing co-mobility hubs to the UK, believing that co-mobility hubs will play an important role in getting those emissions down to net zero. Shared and active transport options will cut down on the use of cars, as currently out of 34 million vehicles in use on UK roads, 28 million of them are cars.

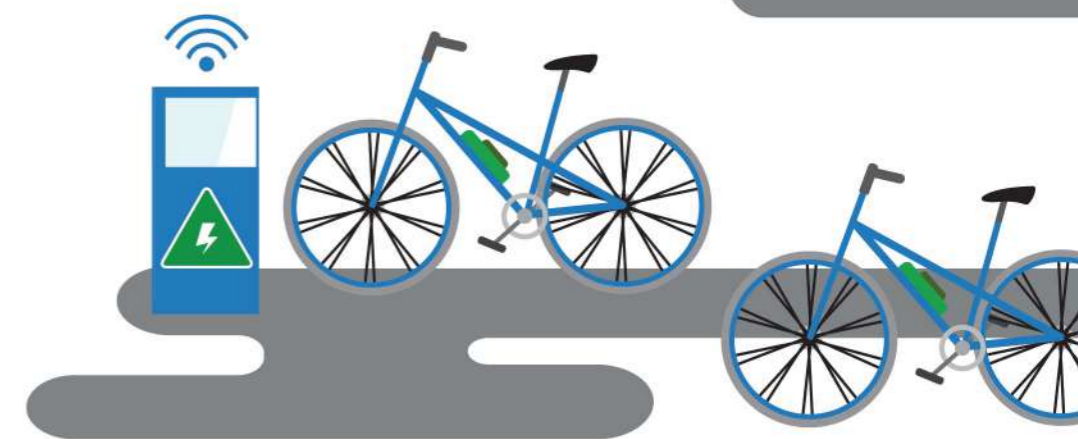
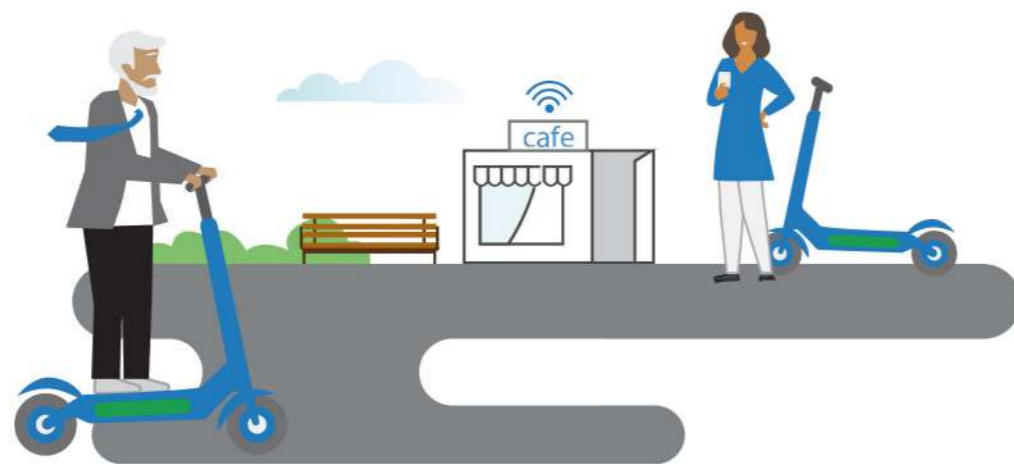
A co-mobility hub brings together several modes of shared and active transportation in one place. These hubs can be adapted for the needs and space in each particular location. In general, they can include charging ports for electric cars, pick up points for e-scooters and bikes, bus stops and other forms of transport. It can also have other logistical uses, such as package pickup and drop off, and lockers for storage. The aim is to encourage people to use active and shared modes of transport, rather than private car usage.

The benefits of co-mobility hubs are not just environmental but also aim to improve the lives of residents with more active modes of transport such as bikes and scooters, making it easier for residents to get active and exercise. The hubs should make things logistically easier to connect and move round in each city. Co-mobility hubs are being proposed and are currently being consulted on in Scotland, with hopes that they will contribute to 20-minute neighbourhoods.

This is a plan to meet all residents' needs within a 20-minute walk from their home, in order to encourage walking over driving and to create more socially connected neighbourhoods. Co-mobility hubs could support this by encouraging shared transport in a short walk from people's home. Hubs can also be a good space to include community facilities to encourage these more social and connected neighbourhoods, like cafes, parks and green spaces, outdoor exercise facilities and charging and WiFi facilities. At a time where communities have to be more socially distanced and isolated than ever, co-mobility hubs are an appealing proposal to combat this.

Plymouth is aiming to introduce 50 co-mobility or multi-modality transport hubs, through the Transforming Cities Fund, over a three-year period. The city hopes to enable residents and visitors alike to plan their journeys on public and shared transport around the city, as well as journeys into Devon and Cornwall. Their hubs will consist of "300 electric vehicle charging points, 400 e-bikes, car club, 0.5 megawatts of solar carports and a smart booking system".

This aligns with Plymouth's governments' aims to improve connectivity and to be net zero by the year 2030, which is an exciting proposition for the residents. Co-mobility hubs could soon be a reality in the UK, transforming our cities and our travel away from private car use. With their potential to reduce carbon emissions and encourage more co-operative and social ways of travelling, and to increase the connectivity of cities and towns, they are an innovative and exciting solution to current transport issues.



Written by: Emma Toves-Phillips
Title: Writer, Amnick
Designed by: Lena Privalenko



Interview with Pam Turton

Asst. Director for Transportation
Portsmouth Council, UK



Efficient, Safe, Reliable Buses Keep the Doctor Away

Pam Turton is a passionate champion for promoting sustainable connectivity through improving public transport. As the first Public Health Practitioner to be registered with the UKPHR from a transport background, she predicts that changes made to our transport systems will have a profound effect on the future health of local residents and the UK.

The Assistant Director for Transport at Portsmouth City Council shares her insight with readers of City Pulse on introducing a new transport network (SEHRT), in line with the UK government's National Bus Strategy (March 15th 2021).

South East Hampshire Rapid Transit is a transport network that will transform the future of travel in south East Hampshire. The £100m investment made by Portsmouth City Council, Hampshire and the Isle of Wight Council to establish a new transport network will improve connectivity, as well as provide better access to education and housing.

It is evident that in the south-coast region, poor access to good quality public transport is a real barrier to people accessing jobs and in particular, educational opportunities. As Ms Turton asserts,

“Transport has had a disproportionate effect on people with lower incomes.”

A 2011 census shows that 2 out of 5 jobseekers think that a lack of transport is the biggest barrier to getting a job, and roughly 1/3 of Portsmouth households don't own a car, which makes them completely reliant on public transport as their main way of connecting with facilities and opportunities. Overcoming the challenge of providing reliable, sustainable public transport is a route to future prosperity and provides a framework for communities to connect.

The economic impact is also an important factor. Accessing key employment as well as education opportunities, existing labour markets and proposed developments will be improved by the changes to public transport, as it will open up

new routes to reach them. In turn, people will have a greater choice and therefore be more productive.

It is crucial to understand exactly how the SEHRT transport network will transform the way people travel between Portsmouth and the surrounding towns. Ms Turton explains,

“Having a frequent, reliable bus service supported by good walking and cycling facilities will speed up times and provide a better experience for customers across all stages of their journey. Well-designed, environmentally conscious public transport networks will potentially enable the community to prosper in all its forms by empowering people to become more independent, reach their potential and live longer, happier and healthier lives.”

The improvement to long-term public health outcomes will be revolutionary and futuristic. Jason Corburn from the University of Berkeley California, discusses the concept of 'city planning as preventative medicine'.

Fostering a multi-disciplinary, holistic approach to city planning, whereby cities are engineered with public health as a priority, can lead to future transformative opportunities. In a similar way, planning for more efficient transport may also help to reduce health inequalities in any city.

In terms of health, Portsmouth is in the top 20% of most deprived local authorities in England, with pockets of high levels of deprivation. Residents in the most deprived areas of the city have a substantially lower life expectancy than those in the least deprived areas; 9.4 years and 7.8 years lower respectively for men and women. As a result, they are likely to possess less vitality during their lifetime than both the regional and English average. Perhaps the main contributing factor to poor health and premature death in Portsmouth is widely spread recreational facilities. However, according to Ms Turton, this is going to change dramatically.



85

“Passengers will have to exercise an average of 20 minutes a day as part of their journey, so by making transport more accessible and efficient, obesity will decrease. Overall, it will lessen sedentary lifestyles, which has long-term benefits for mental health and chronic conditions.”

Besides obesity, air pollution is widely identified as the greatest environmental risk to public health in the UK. According to WHO, approximately 7 million people die worldwide every year from air pollution; the separation of interdependent communities on the periphery of the coastal city region of Portsmouth results in increased car usage and air pollution, as well as congestion. SERHT is a ‘solution’ to help reduce the carbon footprint and lowering carbon emissions (Carbon neutral by 2050).

While a class B charging Clean Air Zone will be implemented in the south-west of the city in a couple of years, the SEHRT transport network will deliver a more instant increase in the number of passengers travelling.

Ms Turton says, *“By removing around 3,100 person trips by car per day will improve air quality within the city region. First Bus and Stagecoach have committed to investing in 29 new high-quality low-emission Euro 6 buses for the network, over a 3 year TCF funding period. Newer Euro VI buses emit 95% less NOx than Euro V which will have a significant impact on pollution levels.”*

Besides planning strategies, having the flexibility to adapt to all community users and comprehend a wide range of complex needs is crucial. For example, a survey from Imperial College in 2020 shows that there is a distinct difference in gender perceptions regarding safety on public transport. The majority of women claim they feel significantly less safe than men and an appropriate response is needed.

To address this, South Hampshire Council has set up a diverse community panel consisting of 840 people to enable local users to shape the transport programme. It has also partnered with its local disability forum to give a voice to wheelchair users.

Surveys, focus groups and engagement activities are to provide ongoing engagement and discussion, as well as behaviour change campaigns, with marketing a step taken to ‘de-mystify’ bus travel.

Ultimately, as we emerge from the Covid pandemic, the Council is presented with a unique opportunity to change society, as well as the bus industry and to build back better. The question is, how do we create the foundations of communities that people want to live in?

“The ‘Bus Back Better’ strategy calls for all people who are involved to come together; authorities and operators must unite to ensure passengers across England benefit from frequent, more reliable, easier to use and better coordinated bus services. This is what we are working towards.”

Ms Turton’s answer emphasises working together with all people who are involved, because that inevitably is what creates unity, as well as focusing on the needs of passengers and local communities.

However, there could be the risk that while planning for a “new normal”, councils might forget to keep the people at the centre.

As Ms Turton warns: *“Retrenchment into old habits and silos, or planning in isolation for the AM peak and point to point commute is something we need to avoid. We do this by being curious about what makes a transport system work for all residents and taking a partnership approach.”*

It is clear that striving to understand the multiple needs and perspectives of the community will allow for a system which truly delivers for all.

86

Interviewed by: Fiona Tovey
Title: Writer, Amnick
Designed by: Stuart Kinnear

CALL FOR CONTRIBUTIONS

Corporate Social Responsibility and Covid-19 Pandemic in Global Health Services

Deadline for Abstracts: 16th August 2021

Editors: Samuel O Idowu, London Metropolitan University, UK
Mary T Idowu, NHS England, UK
Abigail O Idowu, Independent Consultant

Description

The pandemic that besieged our world in late 2019 – the Coronavirus 2019 commonly referred to as COVID-19 has affected all countries of the world. The pandemic has reshaped our world in an unimaginable way. More than 4 million global citizens have lost their lives because of the pandemic, hospitals and other health service institutions that cater for people were brought to a point of no return. Private hospitals in some parts of the world were turning prospective patients away because there were no beds for them or health personnel to look after them. It was an unforgettable experience that will be remembered for centuries to come. How have health service institutions, governments, corporate entities, individual citizens, and society in general coped or are still coping with the pandemic?

Papers are now being solicited by us on the international experiences of COVID-19 in terms of CSR since 2019 and present day. The book will be published by Springer International, Switzerland. Contributors to this book will choose any country they are familiar with and research CSR and COVID-19. The book therefore intends to explore how Health Service institutions around the globe have coped and are still coping with their health obligations towards their citizens. Several countries' experiences of the pandemic and CSR will be included in this global study. The objectives of the study are several.

First, to increase our understanding of the many impacts of the pandemic both negative and positive on different areas of our lives including the health aspect, secondly to explore how these health service institutions could widen their capability in the attempt to cope with a similar health pandemic in the future without seriously affecting their ability to support other regular health issues.

The study hopes to dwell more on the CSR, Sustainability, Ethics and Governance aspects of the pandemic the current practices of CSR in each of the participating country making references to the literature, scholarly studies in the field of CSR and how CSR is perceived and understood in the relevant country when dealing with a worldwide issue. Contributions are welcome from researchers, industry personnel, practitioners from industrialised and emerging economies of the world. Thus, these editors seek original contributions that explore how CSR and its related areas have assisted in coping with the pandemic in different countries around the world. It is hoped that as many countries as possible worldwide would participate in the project.

Contributions

Contributors should be broadly familiar with various aspects of CSR in terms of COVID-19 pandemic in the country of their choice.

Each of the Chapters should be about 8,000 words.

Schedule

- **16th August 2021:** Deadline for abstracts (max. 300 words)
- **1st September 2021:** Notification of acceptance of contributions
- **21st April 2022:** Deadline for full paper (max. 7,000 words)
- **1st July 2022:** Reviewer's feedback
- **1st October 2022:** Final revised contribution

All papers shall be peer-reviewed by contributors. The submission deadline for initial expressions of interest in the form of abstracts of approximately 300 words is **Monday 16th August 2021**.

Abstracts should be sent as e-mail attachments to the editor: **Samuel O Idowu**, either to s.idowu@londonmet.ac.uk or samuelloluidowu87@gmail.com

The book will be published by a Springer International, Switzerland.



Samuel Idowu

Emergencies can happen in a **split second**.

Unknowingly, you may put people using your mobile application in harm's way.

Have peace of mind with Safe & the City's i3 Intelligence, to keep informed about unfolding real-world risks and emergencies to decide who needs to know to stay safe.

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Safe & the City

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Designed by: Sarah Williams

AD



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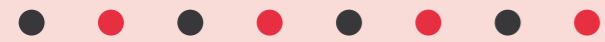
The BRAvery Trust



We are a Scottish based non-profit organisation providing underwear and sanitary products to young people through our partner communities in areas in need.

Period Poverty is a worldwide issue. In some countries, young people miss an average of 12 weeks work and education every year due to the inability to carry out daily tasks because of the lack of sanitary provisions. These young people are unable to finish their schooling and start employment.

At The BRAvery Trust we aim to reduce this issue by increasing awareness and providing support where we can. The BRAvery Trust will also work to raise the awareness and importance of self-checking for any signs of body irregularities.



If you would like to support our cause you can donate...

- Pre-loved bras
- New bras
- Packaged underwear
- Packaged sanitary towels (pads)

The BRAvery Trust communicates, thinks and acts together in order to achieve a lasting positive change in equipping young people worldwide with the bare essentials of underwear and sanitary towels.



thebraverytrust@gmail.com

Instagram: @thebraverytrust

Designed by: Jonathan Oke



HELLO

LAMP POST

Hello Lamp Post is a communications and engagement platform that connects people to their town or city, using AI.



By inviting people to playfully interact with objects, like bus stops, parking meters and statues in their everyday surroundings, Hello Lamp Post is:

- Making local information more accessible
- Improving the efficiency of local decision making, by gathering public sentiments

... all through text-based, mobile phone chats.

Hello Lamp Post is driving the way we shape local areas and services of the future, positively impacting places where we live, work and play.

www.hellolamppost.co.uk

contact@hlp.city

Designed by: Yuliia Martysiuk and Sarah Williams



EcoWorth_{Tech}

EcoWorth Tech is addressing the global issue of corrosion that is costing oil refineries millions of dollars. Corrosion control is dependent on accurate pH monitoring equipment which can easily foul due to hydrocarbons.

EWT's latest product launch is SUPEROF, an advanced oil filter solution for oil refinery operations. SUPEROF reduces oil fouling across pH analysers. The patented solution has been launched in a crude oil refinery with 40x ROI.

Benefits:

- Up to 40x in savings due to more precise chemical dosing
- 2x reduced maintenance of pH sensors & 2x longer uptime
- Reliable oil removal whilst maintaining pH
- User-friendly & ±8x cheaper

Superior Oil Filter for pH Analyzers

Corrosion is costing your oil refinery operations millions of dollars

Corrosion control using caustic & amine is dependent on accurate pH monitoring equipment, which can easily foul due to hydrocarbons. Current filters are unreliable in preventing oil breakthrough into the analyser system. This leads to poor process control resulting in costly corrosion damage to equipment and piping downstream.



Corroded heat exchanger from condenser

pH Analyser Pain Points



Unreliable pH measurement leads to imprecise chemical dosing and corrosion issues



Unpredictable fluctuations of oil content make preventive maintenance difficult to plan



Self-cleaning pH sensors are very costly and are only a re-active solution

Simple solution for a complex issue

SUPEROF - CFA Integrated Filter Solution



2x Reduced Maintenance
Due to high performance of CFA filter



Up to 40x in savings
Due to more precise chemical dosing and highly efficient filter solution



Zero pH Change
Maintains the pH of sour water for precise sensor measurements



User-friendly
Easy to install and maintain; small footprint and modular design

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Superior Oil Filter for pH Analyzers

Proven filter solution containing proprietary Carbon Fibre Aerogel (CFA)

CFA is a novel super-absorbent sponge technology that is capable of efficiently removing insoluble organic contaminants from aqueous environments through absorption. Derived from natural waste biomass and having very high absorption efficiency and selective removal of hydrocarbons, CFA is a superior and sustainable alternative to existing filtration media. The CFA filter is able to reliably prevent oil penetration into the analyser system maintaining pH sensor reading over an extended period of time even under process upsets.



Four Application Areas



Delivering real financial savings

Initial implementation	10,000 \$
CFA cartridges	3,000 \$/yr
Savings filter material	-5,000 \$/yr
Savings chemical dosing	-32,000 \$/yr

400% ROI

Other features



Contributes to ESG goals
Environmentally friendly



Waste-to-Worth
Waste biomass utilization & upcycling opportunities

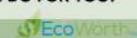


Modular & small footprint
Easy integration



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TO KNOW WHAT WE CAN DO FOR YOU!

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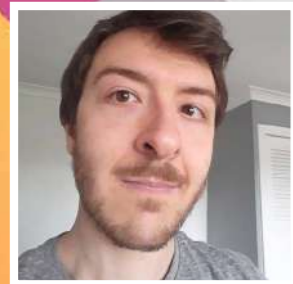
This magazine has been created and designed with passion by the Editorial and Graphic Design team, part of the Work Experience Programme.



Jonathan Oke - Graphic Design Team Leader, Magazine Coordinator

A real privilege of first-time experience in leading the graphic design team to produce the latest edition for Amnick's City Pulse magazine! As a graphic designer, I love experimenting the use of colour, composition, detail, and geometric shapes within magazine design. I'm always looking for new ways to express my design thinking across multiple formats. Being "Creative" to me, is about constantly learning, producing, and changing.

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Stuart Kinnear - Graphic Designer, Team Deputy

This magazine has given me good experience working on a tight deadline, multiple projects and paying attention to detail. I am very grateful for this experience keeping me on my toes and my skills sharp.

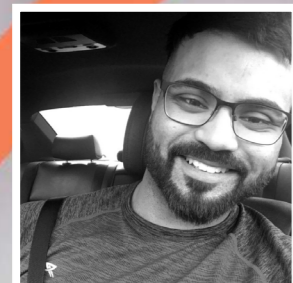
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Lena Privalenko - Graphic Designer, Team Deputy

As a magazine designer, I can combine my love for literature and creativity. I try to present all the information in such a way that the reader is interested in the content. The design of magazines and articles is a rather conservative area, but there is always room for experiments.

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Mo Alom - Graphic Designer, Former Team Leader

I have enjoyed my time at Amnick, I have met amazing new people and got involved in exciting projects that has given me creative freedom to express my creative thinking. I am a recent graduate from Oxford Brookes University, having this opportunity to gain some real-world experience has made me a stronger graphic design. I have done more in one-month than my whole final year in University.

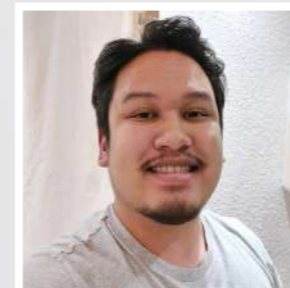
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Clare Gibson - Graphic Designer, Former Team Leader

I am eagerly building my experience in Graphic Design with the ability to adjust my visual language depending on what a project requires.

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Kim Muyano - Graphic Designer, Former Team Leader

I had the pleasure of working with Amnick for 3 months, the whole team was great to work with, I felt that I learned a lot and my skills grew exponentially, I am entirely grateful for the whole experience.

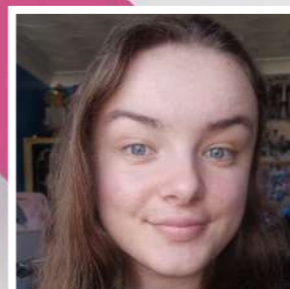
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Cherry Harris - Graphic Designer, Former Team Deputy

Amnick provided me with my first real graphic design work placement opportunity – and all during a global pandemic! They really gave me some hope and experience, which I will always be grateful for.

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Emily Rawlings - Graphic Designer, Former Team Deputy

Time at Amnick - Amnick provides a great supportive place to be able to learn and develop your skills across lots of different areas. During my time on the work experience program my confidence and range of graphics I was able to design grew a lot. The team always provides positive constructive feedback allowing individuals to really develop their skills, whilst all being in a very supportive and welcoming environment.

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Toby Boyd - Graphic Designer

I have been working as a magazine designer for over a year now. My techniques have improved throughout the year and I am able to create high quality articles.

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Rajveer Patter - Graphic Designer

During my current Graphics GCSE course, I have gained an insight of the role of a graphic designer. I am interested in logo design, architecture and graphics relating to music. I begin working on logo designs and illustrations by hand drawing, then I reproduce the works through Adobe Illustrator.

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Yuliia Martsyniuk - Graphic Designer

Freelance graphic and magazine designer based in Bristol. Studied Visual Arts and Design at University and worked in interior design before returning as a graphic designer in 2018. I am especially interested in typography and colour theory and I am experienced in designing logos, magazines, posters and other printed products.

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Sarah Williams - Graphic Designer

As a Graphic Designer I have worked on a wide range of projects including campaigns, editorial and branding. I have recently been involved with creating graphic advertisements.

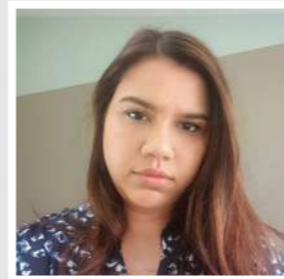
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Alina Sazonova - Graphic Designer

I am passionate about branding, typography, logo design, book design and motion graphics, I take extra steps in delivering excellent results. I enjoy the satisfaction of completing the task or project for a customer.

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Noorus Saba Khan - Graphic Designer

I love being creative and I found graphic design a great avenue to express my passion. I appreciate Amnick for opening up a window of opportunity for me, providing valuable work experience and helping me gain confidence. I am now a confident graphic designer with well developed design skills.

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Hafsa Sharif - Graphic Designer

My background lies in Architecture and Graphic Design. I am skilled in Adobe Photoshop and Adobe Illustrator. I enjoy working on new projects and have a passion for designing and creating my own artwork. I also love painting and sewing.

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Cintia Siqueira - Graphic Designer

Having been part of the Amnick team, improving myself to improve my teamwork, knowing how to deal with feedback and believing more in my potential as a graphic designer. I believe that being part of it helped me to develop new communication skills and improve my own skills like graphic design.

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Our Editorial Team



Matina Fylaktou - Graphic Designer

Graphic Design is always a passion of mine, especially in print and digital media. I have a background as both an employee and a freelancer, which has enriched and diversified my design and experience. I have strong understanding of print processes & creating print ready artwork.

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Tarek Elsabagh - Graphic Designer

My Experience with Amnick was the best learning experience I had since my graduation from college, it was a chance to work with highly creative people under no pressure. My time with Amnick made me a better designer.

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Bridget Jones - Graphic Designer

With a background in Print Design, I am also passionate about Graphic Design and always looking to learn and improve my skills. I enjoyed the Amnick programme as it allowed me to develop my skills further and work with a team of other designers from various backgrounds.

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PORTFOLIO: www.sluggy.wixsite.com/bridgetjones



Emma McCartney - Graphic Designer

I have always been passionate about clear, concise design. Throughout my professional career, I have constantly found ways and excuses to learn and implement my own designs regardless of the industry. Over the pandemic, I chose to dive in and become a full-time freelance designer and haven't looked back since.

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Alex Birch - Proof-reader, Editorial and Graphic Design Team

As a Magazine Editor, I help research, write, edit and reward content that has been uploaded. I look for topics associated within Amnick's Big 6 Start Ups. This has helped me pursue my career as a journalist/freelance writer by gaining experience in the industry. Amnick has helped me gain new skills and practices to help me improve myself and succeed in life.

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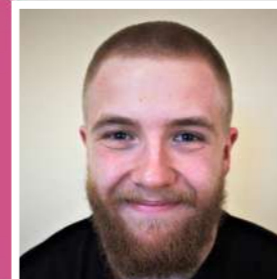
Kyle Wilson - Senior Team Leader, Editorial and Social Media Team

I had a wonderful time working on the magazine. This was a new and challenging experience that has helped me develop in so many ways. From management, to writing and editing, to my organisational skills the time spent with Amnick was extremely beneficial to me.

Thank you to all involved for their hard work. It was a real team effort that went into creating this edition and I am proud to have been a part of it. Thank you Amnick for the opportunity and letting me be part of this amazing piece of work.

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LINKEDIN: www.linkedin.com/in/kyle-wilson-458164192



Angus Harker - Team Leader, Editorial and Social Media Team

My work experience at Amnick Social Enterprise was beyond what I imagined. After starting at the bottom of the editing team, the work environment allowed me to progress through the ranks until I ended up leading the production process. I learned many new skills, such as managing a team, communicating through online meetings and editing submissions against the wider scope that the magazine was wanting to encompass. All in All, a thoroughly enlightening experience, one that gave me avenues to paths I never thought I'd walk down!

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LINKEDIN: www.linkedin.com/in/angus-harker-8022111b2



Julia Chiperi - Business Development Manager

This magazine is more than just articles. This magazine is about coming together to produce a positive impact and to celebrate the collaboration between our communities: our international collaboration team, professionals from different industries and our work experience programme members. Everyone involved played an important role by contributing in different ways from writing, editing, designing to challenge each other, helping each other, and all of this just for one reason - common growth and making this world a better place to live.

EMAIL: julia@amnick.com

Honourable mentions

Editorials:

Alisha Ahmad

Harley Nieslony

Victoria Tarawally

Dipo Balogun

Emily Tuck

Federico Lovo

Ellen Lamb

Fiona Tovey

Eleanor Merry

Emma Toves-Phillips

Rachel Wood

Sophie Cumber

Ponmile Lawal

Mashrik Zaman

Samli Miah

Graphic Designers:

Louise Oldbury



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You can submit your article to info@amnick.com