

Think Tank Report

2/2018 Insights into the agendas of international think tanks



CYBER SECURITY

When democracy becomes critical infrastructure

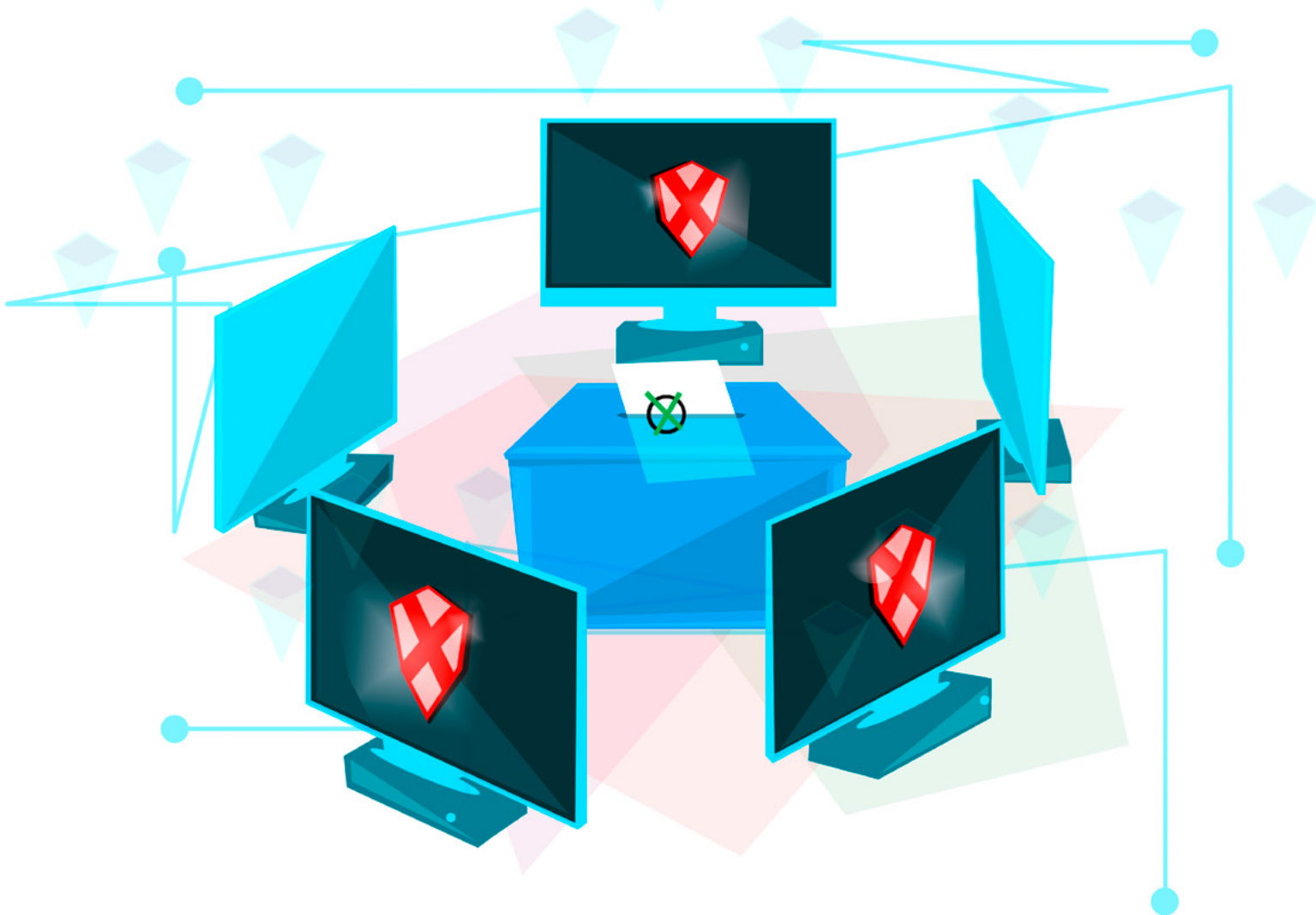
Even soft targets must be protected from attacks from the network

The Russian intervention in the presidential elections in the United States and France leads to questions regarding the need and ability of democratic countries to better protect their own elections. The *Israeli Institute for National Security Studies* (INSS) therefore comes to the conclusion that electoral processes should also be classified as critical infrastructure and therefore worth protecting. In their study the authors explore the question of how foreign players can be hindered from jeopardising a democratic process without simultaneously paralysing the extensive

use of social networks and electoral systems. This presents a new challenge for democratic countries for which the INSS demonstrates various possible approaches. *Institute for National Security Studies*, Tel Aviv, Israel

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[@INSSIsrael](https://twitter.com/INSSIsrael)



BUSINESS AND FINANCES

Finance market forensics

How financial crimes can be identified using new investigative methods

Do we need more police officers? Yes: the majority of politicians agree on this. Yet where exactly – and what shape should this take? It is not easy to find suitable personnel when it comes to controlling the financial market and combating organised crime in it. In the future, therefore, there will not only be a need for more personnel, but also for more and, especially, for new tools to systematically investigate financial crime. The foundations here too are the achievements of artificial intelligence and big data – since every transfer leaves behind a digital footprint that can be checked in the event of suspicion of criminality. To locate these traces and clarify significantly more finance market crime requires separate financial market forensics, however. How this could look and how to deal with sensitive data outlines the *Royal United Services Institute*, London, UK.

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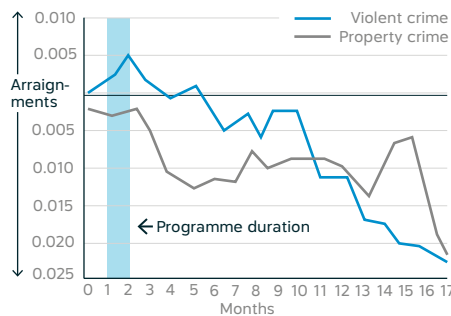
THE WORLD OF WORK

The summer of your life

Insights from the Boston “Summer Youth Employment Program”

A “summer employment programme” somehow sounds like a camp and the 19th century – but this is not the case however. These types of summer work programmes for young people with difficulties integrating – developed in Boston and other cities along the East Coast of the USA – are becoming increasingly popular in the United States. There is now an initial impact assessment: these programmes reduce the subsequent number of violent crimes among the participants by 35 per cent in the first 17 months following the end of the programme; the number of property offences decreases yet further by 57 per cent.

Difference between treatment and control groups in the number of arraignments



Source: Metropolitan Policy Program at Brookings, 2017

In addition, extremely positive changes in the areas of social and emotional capabilities can be measured among the participants, e.g. handling their own feelings better and resolving disputes with their peers without resorting to violence. *Brookings* therefore projects a very rosy future for the summer employment programme even in the 21st century. *Brookings*, Washington D.C., USA

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ENERGY SECTOR

The tiger in the tank

What other countries can learn from India’s biofuels programme

According to *British Petroleum* (BP), India will record the strongest growth of all major national economies with regard to national energy demand by 2035. BP predicts that the demand for natural gas will increase by 162 per cent; for oil by 120 per cent; and for coal by 105 per cent. The demand for renewable energy is even predicted to rise by 699 per cent. In order to be able to meet these challenges fossil fuels need to be supported by a separate biofuels programme and significantly more renewable energy sources generated by the country itself. India’s biofuels programme is very different to those of other countries in this respect, since the government concentrates on the production of biofuels derived from non-feedstocks, which are grown on “degraded soils or wasteland” that is unsuitable for agriculture. This avoids a possible conflict situation in densely populated areas between food security and energy security. In this way India has succeeded in uniting both the population and industry behind its plan. The *Institute for Defence Studies and Analyses* (IDSA), New Delhi, India, proclaims this a clever idea and advises emulating it.

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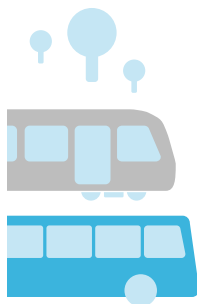
TOWN AND COUNTRY

Genuinely important infrastructure

The way in which infrastructure projects can be aligned with political goal-setting

The discussion about infrastructure policy generally focuses on how much money can currently be set aside or spent on which project. What is often overlooked in the process is how this list of projects is actually put together. Which are the critical investments that we should be supporting financially in the years to come? How are these projects identified and selected? Moreover, which political objectives (economic growth, increased efficiency, equal opportunities, etc.) can be fulfilled as a result? Large infrastructure projects require a planning horizon of 20 to 30 years before they commence operation. This requires a “lifecycle cost analysis” according to the *Urban Institute*, citing local public transport in the USA as a best-practice example. A new study shows how this might look. *Urban Institute*, Washington D.C., USA

Quality ranking 2017: Sustainable Public Transport



1. Hong Kong	65.3 %
2. Zurich	65.0 %
3. Paris	64.5 %
4. Seoul	64.4 %
5. Prague	64.3 %
6. Vienna	63.7 %
7. London	63.6 %
8. Singapore	62.7 %
9. Stockholm	62.7 %
10. Frankfurt on the Main	61.8 %

Source: Forbes 2017 nach Arcadis Sustainable Cities Mobility Index

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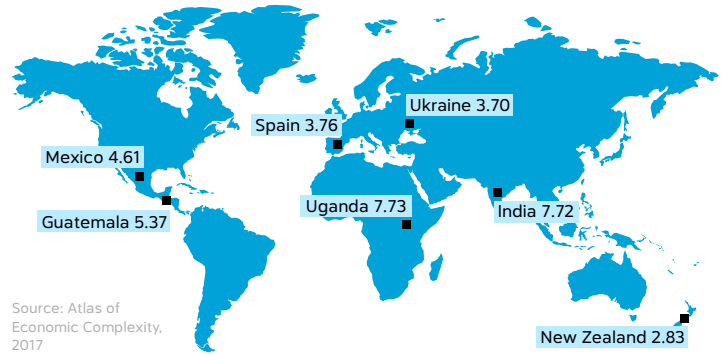
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GLOBAL ECONOMY

Studying growth

How sustainable economic growth is achieved and which policies are required for this to happen

Economic complexity global growth projections: Growth by region (in per cent)



Source: Atlas of Economic Complexity, 2017

Sustainable economic growth is an important determinant for the ongoing rise in living standards and the alleviation of poverty. The ten wealthiest countries continue to command over 145 times more income than the ten poorest. This rate of poverty illustrates the inability of many countries to generate sustainable growth using their own resources. In order to understand these questions surrounding the growth dynamic and to translate the findings gained into more effective policy development for developing countries the *Harvard Center for International Development* set up its *Growth Lab*. It presents the interesting results of its research in the *Atlas on economic complexity*: it breaks down the key economic potentials and opportunities for 128 countries. *Growth Lab*, Harvard, MA, USA

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INTERNATIONAL POLITICS

Is there life in the old dog yet?

2018 could be the decisive year for international order

The Trump presidency and Great Britain’s vote for Brexit have led to a crisis in the liberal system. After 1945 both nations designed and helped construct a wide range of international institutions. Yet now they seem to reject these themselves, or at least to demand that they be fundamentally reorganised – primarily to better serve their own national interests. At the same time it could usher in a new phase

of international framework: more nationalistic, more state-centred and more multi-polar. For 2018 the question is therefore: how relevant is the liberal system in today’s unstable and rapidly changing world? And can it be used to develop a road map for navigating in a new, possibly non-Western-led world order? *Chatham House* believes that, ultimately, the liberal international order can still be convincing – even more

because neither China nor Russia can offer a model that the rest of the world finds appealing. *Chatham House*, London, UK

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CLIMATE CHANGE

Downshifting to overtake

When shared climate success is only possible through renunciation

If the world's nations seriously intend to implement the climate goals agreed in Paris their citizens need to prepare for sizeable changes when it comes to production, consumption and employment. Technical progress, as well as improvements and possible savings in the use of resources will not be sufficient in themselves in order to achieve the self-defined objectives. The *Stockholm Environment Institute* is firmly convinced that the Paris Agreement can only be implemented by means of conscious sacrifice and the concomitant reduction in consumption – by states, businesses and individual citizens too. Exactly what this means and what effects this could have on stability, growth and employment is described by the new “downshifting scenario”. *Stockholm Environment Institute*, Stockholm, Sweden

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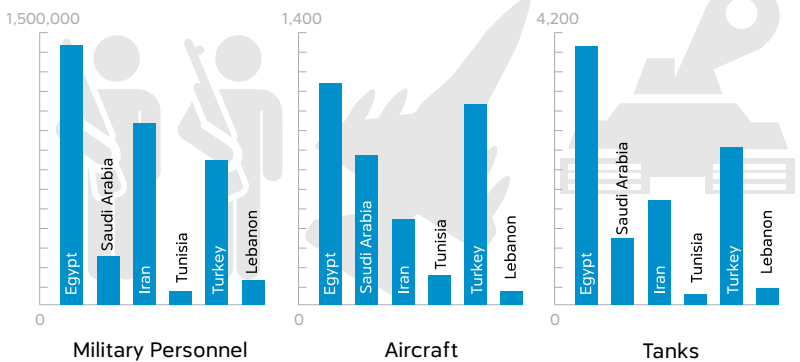
MIDDLE EAST

Power and the military

Seven years after the Arab Spring the role of the military in the Middle East remains unclear

Since the Arab Spring the Middle East has been in a permanent state of upheaval. At the heart of the matter is the question of which role the Arab armies or military organisations in the respective countries take on against the backdrop of increasing polarisation and the Saudi-Iranian rivalry bound up with it. In 2011 the armies were crucial actors – either for regime change, for continuity or for the counter-revolution. The *Italian Institute for International Policy Studies* is researching how the military and military institutions have developed since that point and how the military collaboration between the Arab armies has changed as a result. With the aid of six case studies it examines the current evolution of the Arab armies and aims to decode trends and differences. *Italian Institute for International Policy Studies*, Milan, Italy

Military strength in the MENA region



Source: Global Firepower, 2017 Military Strength Ranking

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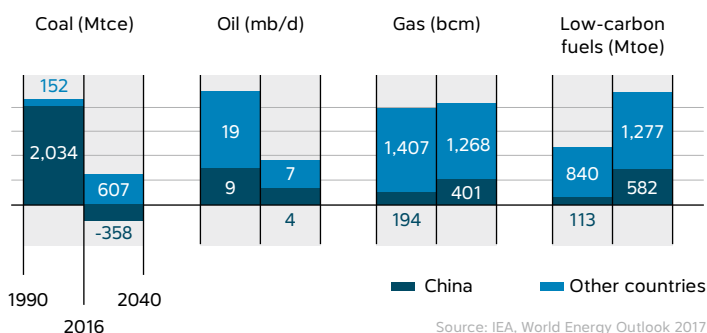
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ENERGY SECTOR

Coal maths

The role of coal in the global energy supply of the future

Change in world primary energy demand by fuel



Source: IEA, World Energy Outlook 2017

Whether and how coal should be looked to as a future source of energy is a provocative subject, and not only in Germany. Within just five years India has increased its coal mining by 800 per cent, while China is attempting to reduce mining of coal. In order, for example, to curb air pollution in many Chinese cities, in some northern provinces of the country this winter it was forbidden to use coal for heating and a changeover to natural gas and electricity was mandated. This in turn led to short-term bottlenecks in the gas supply of some other Asian countries. The *Institute of Energy Economics* conducts analysis into how exactly things might now proceed in the Far East with the “dirty gold”, and what could lie in store for us in the years to come. *Institute of Energy Economics, Japan* (IEEJ), Tokyo, Japan

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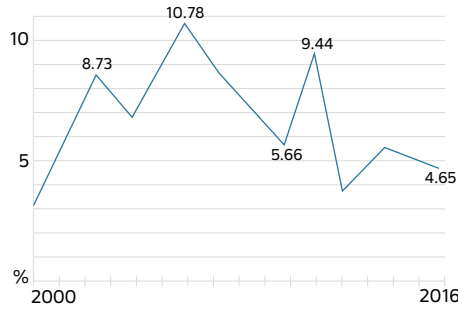
GLOBAL GOVERNANCE

More democracy? No thanks, there are other ways to do it!

On the correlation between economic growth and democracy in Africa

After barely a decade of high economic growth rates the Ugandan people's desire for more democracy has weakened considerably, as the *Afrobarometer* observes. Up-to-date survey data show a large degree of ambivalence among the population towards their governmental system and political leaders. On the one hand the people do indeed want more democracy and are unsatisfied with the present political elite; on the other, however, those surveyed also appreciated the continued economic success. Lastly, the people of Uganda want to avoid endangering the system through "troubled conditions" at all costs. According to researchers from the *Afrobarometer*, this dichotomy is leading to a "satisfaction gap" between perceived and real democracy that has increased in Uganda from five per cent in 2000 to 34 per cent in 2017. In fact, there is no more direct democracy in Uganda; due to the continuing economic success, people's focus is increasingly shifting to other topics. Could this become a template for other economically prospering states in Africa? Furthermore, does this mean that economic success decelerates the wish for more democracy in Africa? The paper from the *Afrobarometer*, Kampala, Uganda, provides first answers.

GDP of Uganda 2000-2016



Source: The World Bank 2017

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STATE BODIES

Trust is good, control is better

The way in which the parliamentary control of the police promotes good governance

The method by which citizens judge good government leadership in their country is inextricably linked to how the police structures work. As the highest supervisory authority Parliament has a special responsibility. The *Geneva Centre for the Democratic Control of Armed Forces* is researching how this interplay between different levels of government can work better and thereby promote democracy and, above all, the "good governance" experience in the population. The comparative analysis encompasses findings and insights from eight country case studies including Belgium, Germany, India, Indonesia, the Netherlands, the Philippines, Thailand and the United Kingdom. *Geneva Centre for the Democratic Control of Armed Forces* (DCAF), Geneva, Switzerland

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INTERNATIONAL POLITICS

Russia Reloaded

How Russia is reclaiming its place on the world stage under

Since 2012 Russia has led a successful campaign to extend its global influence at the expense of the USA and other Western countries. Especially in places with traditional US influence (e.g. in the Middle East or Asia) Russia is attempting to profoundly expand its influence. Russia's return as a global superpower is therefore closely linked to the strengthening of Vladimir Putin's legitimacy domestically, as well as the promotion of its commercial, military and energy policy objectives. Indeed, the foreign-policy campaigns by the Russian President occasionally appear more opportunistic, nevertheless the Kremlin is working single-mindedly on consolidating a multipolar world with its own claim to be a Great Power. The *Carnegie Endowment for International Peace*, meanwhile, considers this to be an enduring characteristic of Russian foreign policy. A new study elucidates how the West ought to react to this and which scenarios this will give rise to in 2018. *Carnegie Endowment for International Peace*, Washington D.C., USA

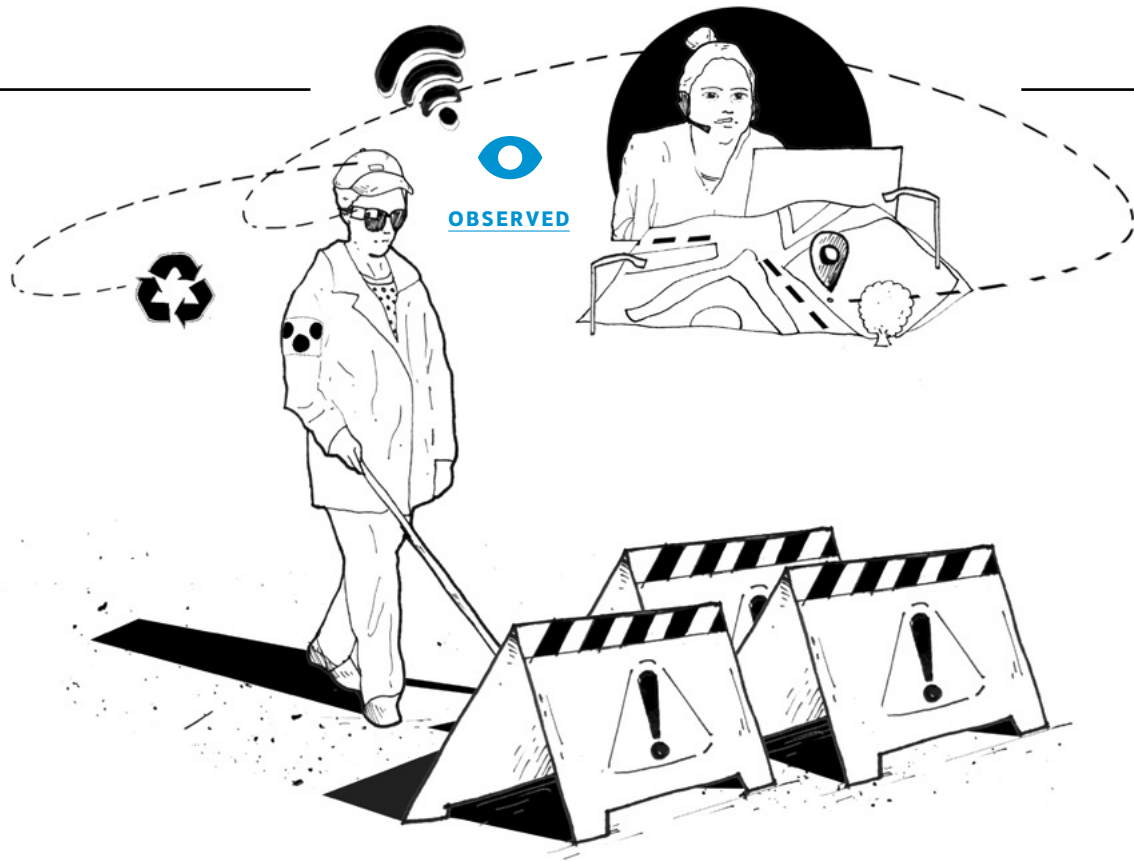
Russian military installations outside Russia



Source: CEIP 2017

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ENVIRONMENT AND SUSTAINABILITY

Clean diesel generators?

A start-up based in Delhi is aiming to improve India's air

Diesel generators operate in almost every country in the world – especially frequently in major cities. If we compare the data from the ten cities worldwide with the most polluted air these are all located in developing countries. The Indian start-up *Chakr Innovation* (“chakr” is Hindi for circle) has now invented a device that can be retrofitted and that means approximately 90 per cent of the particulate emissions from standard diesel generators can be avoided, without adversely affecting the performance of the engine. The black carbon that is attached to it can be collected and then further processed to be used as a dye. With this “*Chakr shield*” the company wants to ensure clean air in India's major cities and create a new, sustainable circular flow from the diesel waste products.

Chakr Innovation, Delhi, India

SUSTAINABILITY

Not a matter of old hat

How recycled waste is turned into new headwear

In recent years Indonesia has evolved to become one of the world's most important locations in the global clothing industry. The global production of textiles is increasing due to the ever shorter usage lifespan for clothes. The result is a loss of more than 80 billion items of clothing a year. This clothing waste is often ultimately illegally discarded – and a stop will now be put to this in Indonesia. To generate more publicity for this problem and establish a recycling chain the start-up *Topiku* (Indonesian for “my hat”) is manufacturing new headwear under fair working conditions from recycled clothing waste. For this purpose scraps of material are collected from landfills and leftover scraps from production are reused straightaway. This concept won *Topiku* the final entry place for the *Wrigley Sustainability Prize*. *Topiku*, Jakarta, Indonesia and Los Angeles, USA

ARTIFICIAL INTELLIGENCE

A third eye

Augmented reality is changing everyday life for blind people

When tech developers Suman Kanuganti and Yuja Chang became friends with the blind communications expert Matt Brock in 2014 the idea was born to use the latest augmented reality technology in a targeted way to make the lives of blind people simpler. With the help of Google Glass technology Kanuganti and Chang developed a real-time assistance service for blind people. Thanks to the remote assistance technology, by wearing special glasses and using an augmented reality dashboard blind people can be connected to a network of specially trained and qualified contacts all over the world. These contacts mirror the blind person's field of vision on their computers in real-time and then act as visual interpreters both in emergency situations and in a variety of everyday tasks and activities. *Aira*, San Diego, USA



FACES



WEAPONS INDUSTRY

Only your finger can pull the trigger

Each year, around 21,000 people die from the use of firearms in the USA alone. Despite this, children and young people still have relatively free access to weapons in approximately 1.7 million US households. The 20-year-old MIT student Kai Kloepfer has now developed a biometric weapon that can only be unlocked and locked by fingerprint. This is designed to prevent unauthorised use primarily by children and young people and create an intelligent system that limits the use of the weapon to its owner. The aim of *Biofire* is primarily to reduce the number of approximately 1,300 children killed by firearms each year in the USA.



biofire.io



WATER MANAGEMENT

Pouring clean water

According to the United Nations more people die each year from the consequences of polluted drinking water than from all forms of violence, including all wars. Particularly in large urban conurbations many people consume polluted water that, in addition to chemical contaminants, also contains biological pathogens. Leticia Pereira de Souza and João Gabriel Stefani Antunes have now developed a technology that allows polluted water to be cleaned by means of the seed extract from the *Moringa Oleifera* plant. The coagulation properties of the seed enable various organic materials to be broken down in the waste water and, in addition, to reduce the number of microorganisms present to such an extent to make the polluted water drinkable. This method of water purification is not prohibitively expensive, and is also completely biodegradable. A number of Brazilian cities and municipalities now want to initiate a pilot scheme – a clean-cut issue.



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SPACE EXPLORATION

Rocket science

Rockets and the satellites they transport are of key importance – not only for space exploration, but also for many aspects of modern society, including global positioning systems, environmental research, communication, weather forecasting and education. In addition to its drive system each orbiting rocket also requires its own control and guidance system that determines the fuel consumption and therefore the maximum range and payload. At just 17 Charlie Fenske has now developed a new, highly efficient rocket control system that, thanks to a specially designed control unit, considerably reduces the fuel consumption of rockets and satellites and, at the same time, increases their resilience upon leaving and entering the Earth's atmosphere. This achievement won Fenske the *Virgin Galactic Pioneer Award* at the *Google Science Fair*. Both NASA and the new private aerospace companies have already expressed an interest in Fenske and his invention.



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