

FLASHES

A MONTHLY MAGAZINE ON KNOWLEDGE AND DEVELOPMENT
BY THE MOHAMMED BIN RASHID AL MAKTOUM FOUNDATION

OCTOBER 2015
ISSUE 12

Internet of Everything & the Smart City

Unleashing technology to
realise the full potential of
a Connected Community

LITERACY

The Arab
Reading Challenge

INNOVATION

Hi2 gives wings to
entrepreneurs

SCIENCE

Café Scientifique:
A grassroots movement



add life to life



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FOREWORD

Even as the curtain fell on the Sustainable Development Goals 2015 Summit held at the United Nations last month, the UAE has taken an admirable stand. It has pledged that it “will leave no one behind” and to shift the world on a sustainable and resilient path to a better future.

Achieving literacy, health and well-being for the citizens in the Arab world and also keeping in step with the global economy through innovation and investing in technology and human resources is important. At the same time, protecting the environment and aiming for sustainability in its march towards development has been a hallmark of UAE’s leadership.

It is in this light that we view the ‘Arab Reading Challenge’ launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to encourage students to read, with

more than a million students committing to read 50 million extracurricular books during every academic year.

In this respect, the Mohammed Bin Rashid Al Maktoum Foundation’s ‘My Family Reads’ initiative is gaining pace in Dubai with the circle of beneficiaries expanding to more institutions linking their staff members and families to join in this marvellous journey of culture and knowledge.

The UAE Water Aid Foundation, part of Sheikh Mohammed’s vision, has launched projects to provide safe drinking water in five countries – Somalia, Tajikistan, Afghanistan, Ghana, and Benin. These humanitarian efforts serve to underline UAE’s commitment to achieving sustainable development for all.

HE Jamal Bin Huwaireb

MD of the Mohammed Bin Rashid
Al Maktoum Foundation



Sheikh Mohammed launches 'Arab Reading Challenge'

**LARGEST ARAB INITIATIVE OF ITS KIND,
WITH DH11M IN INCENTIVES**



It is a renaissance that will do the region proud: His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, earlier last month, launched the Arab Reading Challenge, the largest Arab project to encourage students in the Arab world to read, with more than a million students committing to read 50 million extracurricular books during every academic year.

Launched in collaboration with the MBC group, the Arab Reading Challenge has a generous set of incentives for the nation's future intelligentsia: a student who comes first will get \$100,000 to \$150,000 (Dh367,172 to Dh550,758) towards his or her university tuition fees and \$50,000 (Dh183,586) will go to the student's family. Moreover, Dh1 million in prizes has also been allocated for Arab schools with the highest participation in the programme.

The awards for outstanding supervisors are valued at Dh1.1 million. The total value of the incentives will be

\$3million (Dh11 million). HH Sheikh Mohammed was forthright in the challenges facing the region vis-à-vis the depleting interest in reading among the youth. "The Arab world is suffering from a reading crisis whose consequences we see and feel every day in this region. The 50 million book challenge is the first of many steps we are taking in the hope of creating a long-term impact that would change this reality," he said.

And the written word can indeed go a long way in making progress: public libraries and schools in Dubai say the Arab Reading Challenge will create a culture of reading and elevate the use of the Arabic language among youth. "This Arabic reading challenge initiative could not have come at a better time as the use of the Arabic language is diminishing in favour of English, which is now used in most of our schools, universities, souqs and businesses," said Fahad Al Mamari, Director of The Dubai Library, which comes under The Dubai Culture & Arts Authority. [▶](#)



Towards establishing a culture of innovation in public healthcare

Sheikh Mohammed tours DHA workshops that focus on initiatives for developing services

His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, last month (September 17), attended a part of the sessions for the first creative lab workshops launched by the Dubai Health Authority (DHA). The workshops are a part of DHA's strategy to develop the healthcare system in Dubai.

During his visit, Sheikh Mohammed was accompanied by HH Sheikh Hamdan Bin Mohammed Bin Rashid Al Maktoum, Dubai Crown Prince, and HH Sheikh Maktoum Bin Mohammed Bin Rashid Al Maktoum, Deputy Ruler of Dubai.

Sheikh Mohammed was briefed on smart initiatives launched by DHA over the last two years.

He toured a number of workshops that focused on initiatives for developing the healthcare sector in Dubai. The workshops also touched on ways to benefit from and utilise smart initiatives in order to develop healthcare services rendered by DHA.

Praising the fruitful ideas launched by experts and DHA's medical and technical cadres, Sheikh Mohammed called for the practical implementation of these initiatives that establish a culture of innovation in DHA and can improve and develop the authority's services. He stressed that a person's health is the foundation for building a society that can move forward with the UAE's social and economic stability and development. †





UAE WATER AID FOUNDATION TO PROVIDE SAFE DRINKING WATER IN FIVE COUNTRIES

Humanitarian services extend beyond Dubai and the UAE to help the needy around the world

Six projects have been launched last month by the UAE Water Aid Foundation to provide safe drinking water in five countries.

“We are working with the Mohammed bin Rashid Al Maktoum Charity and Humanitarian Establishment on water-well projects in Somalia, Tajikistan, Afghanistan, Ghana, and Benin. These efforts support the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, to promote the UAE’s position globally and participate in initiatives and humanitarian aid to improve the living conditions of the poor and affected communities in various countries, and achieve the sustainable development for all mankind,” said Saeed Mohammed Al Tayer, MD & CEO of Dubai Electricity and Water Authority (DEWA), and Chairman of the Board of Trustees of the UAE Water Aid Foundation.

The projects are a result of the five-year Memorandum of Understanding (MoU) signed with the Mohammed bin Rashid Al Maktoum Charity and Humanitarian Establishment enhancing the strategic partnership between the two

organisations to address water scarcity.

Al Tayer commended the efforts by the two organisations, whose humanitarian services extend beyond Dubai and the UAE to help the needy around the world.

“We collaborate with the Mohammed bin Rashid Al Maktoum Charity and Humanitarian Establishment on projects to provide potable water to the needy, the disadvantaged, and those who are in distress around the world. We support studies and research to develop solutions for water production using solar power. We also finance and support water technology projects to combat drought,” said Mohammed Al Shamsi, Acting Executive Director of the UAE Water Aid Foundation.

“These countries have been carefully selected as they are the areas in most need of water projects because they suffer from drought and water scarcity,” said Ibrahim Bu Melha, Dubai Ruler’s Advisor for Humanitarian and Cultural Affairs and Deputy Chairman of the Board of Trustees of the Mohammed bin Rashid Al Maktoum Charity and Humanitarian Establishment. †

FROM COMPUTER SCIENCE TO SPACE

How the Arab world is making quantum leaps in various fields

According to the latest statistics by recruitment search engine Monster, the UAE is transforming itself into “a regional and global hub for innovation and technology”. This trend is reflected in the fact that demand for software, hardware and telecommunications professionals in the Middle East has increased by 78 percent year-over-year increase regionwide, according to a July 2015 report from the Monster Employment Index. Sanjay Modi, managing director of Monster, also cited Gartner, a US-based research and advisory firm focused on technology, which said the Middle East and North Africa region will spend \$11.97 billion on information technology products and services in 2015. This bodes well for students and professionals from the field in the region.

Moreover, the news is encouraging on various other socio-economic fronts as well: for instance, the NYUAD Women in Computing in the Arab World Conference 2015 was indeed an apt event for an apt epoch: while female enrollment in Computer Science in the United States declined from 37 percent in the early 80s to a startling 20 percent today, initial findings from research studies suggest that female students comprise the bulk of undergraduate Computer Science students in various Arab nations.

Strides are being made on the professional front as well. The UAE government recently announced the selection of three UAE innovators as members of the World Economic Forum’s Young Scientists Community based on their contributions in their respective fields. Professor Ali Al Naqbi, Dean for Research and Graduate Studies and Chair of the Mechanical Engineering; Dr. Habiba Al Safar, Director of Khalifa University Centre for Biotechnology (KUCEB), and Sarah Amiri, Deputy Project Manager of the planned UAE Mars mission, are the three prominent game changers. Founded in 2008, the Young Scientists Community has cherry-picked 50 members and scientists whose efforts have had an especially profound social impact.

Dr. Habiba, who has been recognised as one of the most powerful women in the Arab world, led by her research that focuses on identifying the genomes responsible for the spread of Diabetes Type I and II, said that she was delighted to be selected as a member of the Young Scientists Community. In the meanwhile, Sarah Amiri, who helms the team of the UAE Mars mission’s scientific objectives, goals, instrumentation and analysis programmes, said she is working on collaborative ventures with national universities and international institutions. †



Dr. Habiba Al Safar, Director of Khalifa University Centre for Biotechnology



Sarah Amiri, Deputy Project Manager of the planned UAE Mars mission



Professor Ali Al Naqbi, Dean for Research & Graduate Studies & Chair of the Mechanical Engineering

Vision of a networked FUTURE

Flashes speaks to Rabih Dabboussi, Managing Director, Cisco UAE, on the Internet of Things and Smart City

What do you regard as the most interesting use of the Internet of Things?

The Internet of Things (IoT), the networked connection of devices where we are today, is the foundation for the next wave of the internet which we are already witnessing nowadays, the Internet of Everything (IoE), will connect people, processes, data and things, creating unprecedented opportunities. When people, process, data, and things are brought together seamlessly through intelligent networked connections – institutions are transformed. They can then offer new customer and citizen experiences, improved operational efficiencies, breakthrough innovations and entirely new economic models for services and growth.

Over the next decade, the IoE will deliver \$19 trillion of value to individuals, businesses and countries.

Similarly, driven by Dubai's Smart City vision, we predict that Dubai's public and private sectors can achieve a potential Dh17.9 billion (\$ 4.87 billion) in value from the IoE by 2019. The IoE will create value by lowering

costs, improving employee productivity, generating new revenue, and enhancing citizen benefits. In the private sector, additional benefits include improvements in innovation, supply chain and asset utilisation.

The IoE's value potential is likely to strongly appeal to Dubai's smart city ambitions, which span six key pillars (life, society, mobility, economy, government, and environment), and more than 100 initiatives focusing on transport, communications, infrastructure, electricity, economic services, and urban planning.

What are the factors that would most accelerate the benefits of the Internet of Things?

In order to reap the utmost benefits from the IoT today and the Internet of Everything (IoE) era of the future, organisations are going to need to adopt strategies for countries, and organisations both large and small must become fully digitised. According to Gartner, by 2020, 75 percent of businesses globally will be a digital business or will be preparing to become one. While many organisations

Rabih Dabboussi,
Managing
Director,
Cisco UAE



have digital business transformation initiatives planned or underway, Gartner predicts that only 30 percent of these efforts will be successful due to lack of talent and technical expertise. Becoming a digital business requires an agile IT model, and the ability to rethink core processes for the digital era. Embracing new security, cloud, mobile, social and analytics technologies required to fully digitise takes imagination, investment and expertise.

How will the Internet of Things (IoT) help us make better decisions and how will the Smart City make use of IoT in its functioning?

The role of IT within organisations in the Middle East region will continue to evolve as IoT/IoE gathers pace, giving CIOs, IT Directors and business leaders ever more opportunity to influence the strategic direction of the business. The value to be gained through the Internet of Everything will ensure a place for IT strategy within the boardroom, presenting a new level of opportunity for technology leadership. IT will be in the spotlight to enable actionable information, build new connections and open new revenue streams.

With the proliferation of connected devices, people and processes, we can also expect to see a shift towards operational technologies, and an amalgamation of IT and operational technology in some organisations.

Together with an ecosystem of partners, at Cisco we have created a powerful, integrated platform that incorporates top technology, applications and business models to help governments improve the way communities and smart cities are designed, built and run – from lighting to waste management, from parking and traffic services to safety and security.

The IoE/IoT's impact on cities is not theoretical. Today, Global Smart Cities have already reduced water consumption by 50 percent, enhanced energy savings by 30 percent, and reduced traffic by 30 percent.

Dubai is not being left behind either. For example, the deployment of citywide Wi-Fi will form the backbone of smart, mobile government services, with the Dubai Smart City Executive Committee guiding public sector access to systems, collaboration tools, and business insights. Likewise, smart transport such as the public transport Nol card, the Salik electronic toll gate, and driverless Dubai



Metro have reduced traffic fatalities, and the percentage of the population using public transport growing from 6 percent in 2005 to 12 percent in 2014, according to the Dubai's Roads and Transport Authority.

How do we protect ourselves when connected devices open up the possibility of security issues and intrusions into our privacy?

With security being a growing concern in the region, and a lot of the technology introduced still fairly new, education and training play a pivotal role in the success of the security solutions.

As networks continue to grow, it greatly expands the attack surface and creates opportunities for attackers to compromise a non-critical asset and pivot from there to attack more critical assets and data.

The Cisco Midyear Security report 2015 findings also underscore the need for businesses to deploy integrated solutions vs. point products, work with



trustworthy vendors, and enlist security services providers for guidance and assessment. Organisations will have to start building a more integrated and scalable enterprise-class network security architecture in the short term. It's not enough to just add more security components to the network; it will be essential to truly converge the various components so that they work together.

How will IoT enable faster and better conversion of data into useful info that everyone can use? What effect will IoT have on our daily lives?

The IoT/IoE will create value by lowering costs, improving employee productivity, generating new revenue, and enhancing citizen benefits. In the private sector, additional benefits include improvements in innovation, supply chain and asset utilisation. In public sector alone, Dubai can benefit from four overarching IoE themes: public sector productivity, transportation, city management, and other benefits.

In Dubai, what do you think life will be like when it becomes a fully Smart City?

City operations are an important part of the IoE future and are expected to could contribute the following values over the next 10 years. Part of this value can be achieved through the following city operations use cases:

- Smart buildings (\$100 billion) can lower operating costs from reduced energy consumption through the integration of HVAC and other systems.
- Gas monitoring (\$69 billion) can reduce meter-reading costs and increase the accuracy of readings for citizens and municipal utility agencies.
- Smart parking (\$41 billion) can provide real-time visibility across a city, enabling improved planning and demand-based pricing.
- Water management (\$39 billion) can connect the household water meter to an IP network for real-time insight on any device.
- Road pricing (\$18 billion) can implement automatic payments for vehicles entering busy zones of cities, improving traffic conditions and raising revenues. ↗



Space Milestone Lifts Off

The 500th manned space rocket blasted off from Yuri Gagarin's launch pad

A Soyuz spacecraft carrying a Russian, a Dane, and a Kazakh blasted off on September 1 from the Baikonur Cosmodrome for a two-day trip to the International Space Station, marking a historic milestone for space exploration. It was the 500th manned space rocket to be launched into orbit. Coincidentally, the three cosmonauts took off in the Soyuz TMA 18M rocket on schedule at 0437 GMT from the very same launchpad that Yuri Gagarin used for mankind's first entry into space.

That first human spaceflight took place on April 12, 1961, when cosmonaut Gagarin made one orbit around the Earth aboard the Vostok 1 spacecraft, launched by the Soviet space programme. In 1963, Valentina Tereshkova became the first woman in space aboard Vostok 6.

The big bang of human space travel, in one sense, was the development of the 'Space Transportation System' by the United States in the 1980s. Never heard of it? Don't worry, it's just a roundabout way of saying 'Space Shuttle'. On April 12, 1981, Space Shuttle Columbia blasted off from Kennedy Space Centre in Florida, carrying Commander John W Young and Pilot Robert L Crippen. It was a milestone in space travel. Previously, any vehicles used to enter space had to be discarded after use. But now, astronauts could travel and return safely – and reuse the same spacecraft. The US eventually built four more: Enterprise, Challenger, Discovery and Atlantis. However, two tragedies mark the history of the space shuttle – the Challenger disaster of 1986 and the Columbia disaster of 2003.

Since the retirement of the US Space Shuttle in 2011, only Russia and China have maintained domestic human spaceflight capability with the Soyuz programme and Shenzhou programme. Currently, all crewed flights to the ISS use Soyuz

vehicles, which remain attached to the space station to allow quick return whenever required, especially in the case of emergencies.

Recent reports also convey that NASA, working on the Orion spacecraft, which is being built to further explorations of Mars and other distant planetary and otherwise destinations, may be delayed by two years, until 2023.

UAE ventures into space

Nearer home, the UAE has already had some success in space with its wholly-owned satellites – DubaiSat 1 (launched in 2009) and DubaiSat 2 (launched in 2013) – both which continue to orbit the planet capturing stunning images.

Spearheading the UAE's space efforts is the UAE Space Agency founded in 2014, with its headquarters in Abu Dhabi, and the Mohammed bin Rashid Space Centre in Dubai set up in 2015.

With the ongoing preparations for the launch of the KhalifaSat in 2017 for an unmanned Mars probe, the UAE is getting into its stride in its space ambitions.

Called Hope or Al Amal in Arabic, the UAE's Mars mission set for 2021, will send an unmanned probe to search for signs of life and potential for habitability on the Red Planet on a 60 million-kilometre.

The UAE will be the first Arab country to explore to another planet – coinciding with the 50th anniversary of the formation of the Union.

One of the major benefits of UAE's space efforts and its Mars mission is that it will enable its youth to take up study and research into aerospace science and space technology. For example, the KhalifaSat, the third and most advanced UAE satellite in the making will be 100 per cent developed by Emirati engineers. †

3 Trillion Trees

The world has more trees than estimated, but the news isn't all good

The number of trees on Earth was previously estimated using satellite imagery. However ecologist Thomas Crowther, who conducted a study from Yale University together with his colleagues, combined this method with ground-based counts. What were their findings? There are three trillion trees in the world, seven times more than the number previously estimated: 428.5 billion. This may sound like good news, but only for a second. "It's not like we discovered new trees," says Crowther. "Rather, we added another layer of information that allowed us to revise much of the previous estimates." When you compare this total with the number of trees at the onset of agriculture about 12,000 years ago, we learn that there has been a drop of 46 percent.

A recent report by the United Nations' Food and Agriculture Organisation has stated that the rate of deforestation around the world has slowed down by more than 50 percent. Despite this deceleration, 15 billion trees are cut down every year and around five billion are planted back.

It is clear now that it is human activity that controls tree density. "The scale of human impact is astonishing," says Crowther, now at the Netherlands Institute of Ecology in Wageningen. "Obviously, we expected humans would have a prominent role, but I didn't expect that it would come out as the

strongest control on tree density." It is also important to note that most of the forests being planted now are for commercial purposes. This means that natural forests are being destroyed for young, less diverse forests, which are less valuable from a biodiversity point of view.

Of the three trillion trees, approximately 1.39 trillion are located in tropical and subtropical forests, 0.74 trillion in boreal regions, and 0.61 trillion in temperate regions. National forest inventories from every continent except Antarctica, provided the ground based data for this survey. For the purpose of this survey, the authors defined a 'tree' as a plant with a woody stem that is at least 10 centimetres wide at breast height.

Conservation and afforestation efforts are definitely helping. An additional 150 million hectares of forest lands have been granted protected status since 1990. In local efforts, schemes such as the Khalifa International Date Palm Awards, which award best practices in research and conservation of date palms, go a long way. There are also organisations such as 'Give a Ghaf' that organise individual and corporate planting sessions. Ghaf is a drought tolerant, evergreen, indigenous species. UAE also holds the record for the most palm trees planted in 10 years between 1999 and 2009, which is 42 million. [↑](#)



3 Trillion trees means 400 trees for every person on the planet





Novel Use for Coffee Waste

Activated carbon derived from waste coffee grounds enables stable methane storage

Methane is a gas, which although anthropogenic in nature, has the potential to be a clean fuel. It is a highly potent greenhouse gas, which is created from a lot of natural and man-made sources such as decaying plant matter, livestock, industry and waste. Today, a lot of research is being carried out on alternatives to fuels that emit anthropogenic gases when used. The rise of these gases in the environment is leading to climate change with as yet unknown consequences. There is also the issue of increased waste generation with their improper disposal, leading to pollution. Both these issues are being addressed by new research that formulates a way to store methane gas with the use of waste coffee grounds.

This research is important for two reasons: it can either be used to keep methane from entering the atmosphere or for methane fuel cells. There are several problems with traditional methane gas storage such as heavy and unsafe gas cylinders. Therefore, there is a need for low weight absorptive materials which will make the storage of methane much more feasible.

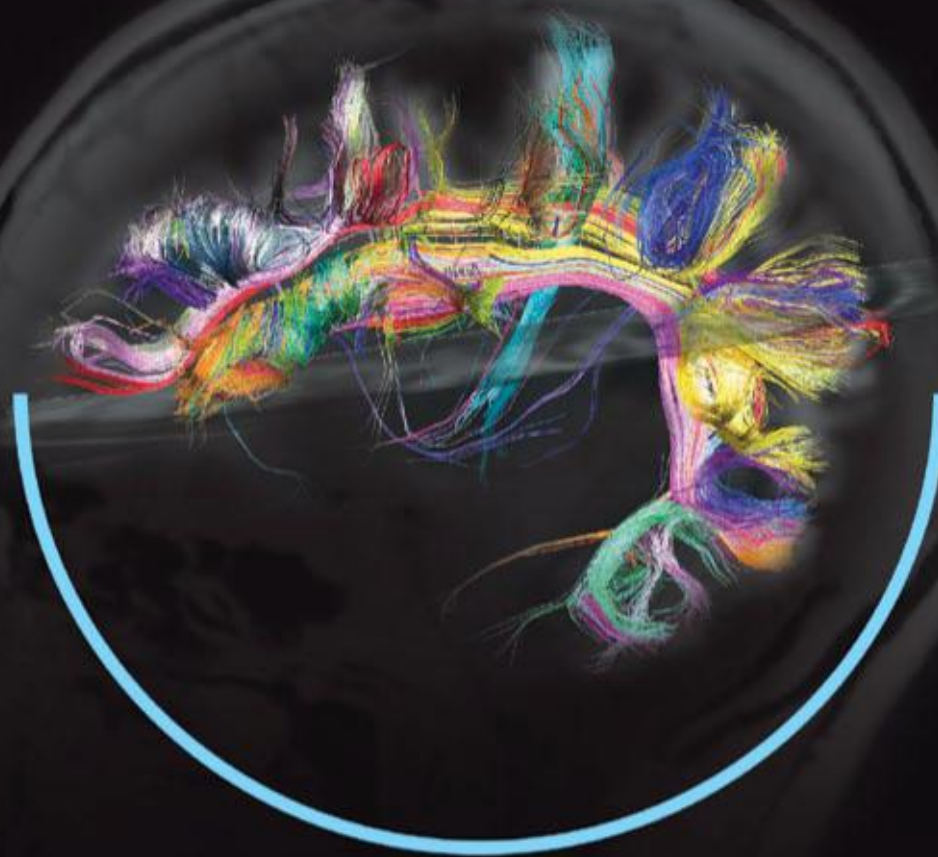
The process of preparing this material involves the use of potassium hydroxide, deionised water and spent coffee grounds. The coffee grounds are soaked in a 7M potassium hydroxide (KOH) solution and stirred at 65 degree C for a day. This

solution is then heated to 100 degree C in a crystallisation dish to remove excess water. This, when activated at the right temperature, gives a favourable porosity and surface area for absorption.

This material seems promising as it only takes a day for its generation, which is a fraction of the time it normally takes to produce methane-absorbing materials. Due to the high absorbency of the coffee grounds, it is possible to eliminate the filtering and washing process during production and it can absorb up to 7 percent of its weight in methane. It is also very cheap and makes use of waste materials that would otherwise have found their way to a landfill.

The process was developed by researchers based at the Ulsan National Institute of Science and Technology (UNIST), South Korea and the results of their work were published in the journal Nanotechnology. As part of the research, the team also demonstrated the ability of the new material to store hydrogen at cryogenic temperatures (-150 °C/-238 °F to absolute zero) The eventual goal is to develop hydrogen storage in the activated coffee grounds at higher temperatures to make the product more practical for common applications.

Coffee lovers never needed a reason to love the beans, but now they've another reason. ☕



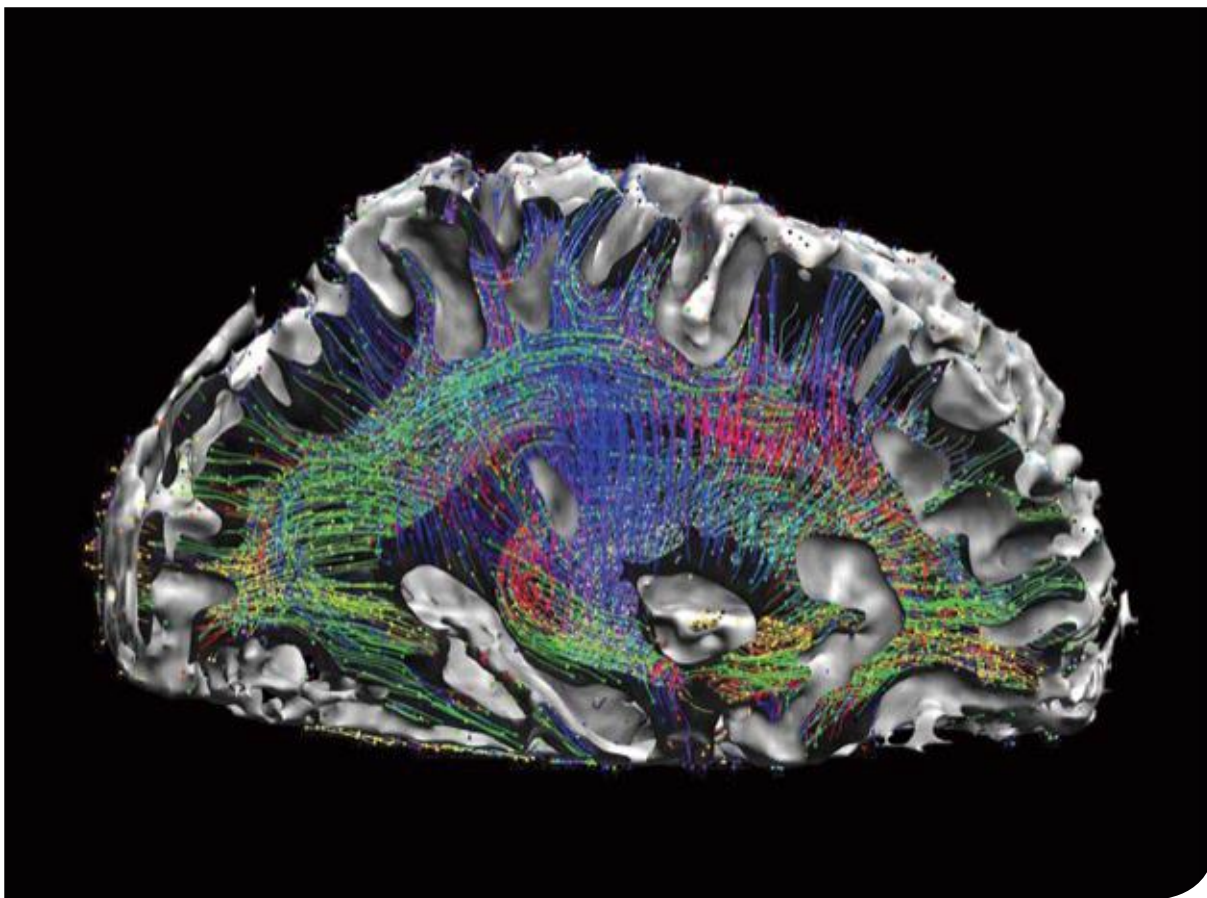
Brain Game

The BRAIN Initiative by President Obama hopes to shed light on this mysterious organ

The BRAIN initiative, which stands for Brain Research through Advancing Innovative Neurotechnologies, is a public-private enterprise that was announced by President Obama in April 2013. It aims to do for neuroscience what the Human Genome Project did for genomics to better understand the mysteries of the human brain. To date, the Human Genome Project is

the world's largest collaborative biological project. Similarly, the BRAIN initiative is looking for the support and participation of companies, universities and philanthropists.

The working of the brain is still one of the greatest mysteries and challenges in medicine. Researchers hope to produce a new revolutionary dynamic picture of the brain that will show



how individual cells and complex neural circuits interact in both time and space. It will help with the cure and prevention of brain disorders such as Alzheimers and schizophrenia. It will also give unprecedented information about how exactly the brain enables the human body to record, process, utilise, store and retrieve vast quantities of information.

Major goals of this initiative are to develop new optics and photonics technologies to tackle challenges and fund innovative peripheral neurotechnologies and provide unrestricted access for research purposes to all intellectual property. Several universities have dedicated research going into different aspects of this project such as infrastructure, developing new imaging technologies etc.

The initial expenditure for fiscal year 2014 was proposed to be around \$110 million from the Defense Advanced Research Projects Agency (DARPA), The National Institutes of Health (NIH) and the National Science Foundation (NSF). The initiative is only growing to five participating federal agencies with the addition of

the US Food and Drug Administration (FDA) and Intelligence Advanced Research Projects Activity (IARPA).

The first study of the initiative reveals a way to manipulate a lab animal's brain circuitry with the ability to switch off and on behaviours. It is hoped that a technique for identifying brain wiring underlying any behaviour can be perfected. Activating or deactivating neurons can then control these behaviours. Most neurological disorders are now linked to 'chemical imbalances'. However, there is now a shift in approach to tracing them to misfiring in neuronal circuits.

The challenges faced by this project are skyrocketing costs in developing these new tools and also the logistical issue of the massive amounts of data created. Most of the brain activity monitors are of limited use and use invasive techniques for implantation.

The initiative also aims to set a guideline for ethical standards for the BRAIN initiative and other advances in neuroscience. The Presidential Commission for the study of Bioethical Issues released these reports in May 2014. [↑](#)



PUTTING DUBAI ON TRACK TO BECOME A BIOMEDICAL RESEARCH HUB

The UAE's first multi-disciplinary research centre is at the cutting-edge of the field

Pushing Medical Excellence

The Al Jalila Foundation, a global philanthropic organisation dedicated to transforming lives through medical education and research, was founded by His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, in April 2013, to position Dubai and the UAE at the forefront of medical innovation.

Al Jalila Foundation's vision stems from the vision of Sheikh Mohammed and the UAE's Vision 2020 focusing on scientific and medical research programmes and activities as well as training programmes for UAE nationals.

On the first anniversary of Al Jalila Foundation, Sheikh Mohammed announced the launch of the Al Jalila Foundation Research Centre, a Dh200 million state-of-the-art medical research centre.

On the occasion, Sheikh Mohammed expressed satisfaction over the project, affirming the importance of promoting a culture of research and studies in all specialties in order to advance and improve the healthcare sector in UAE and achieve patients' happiness and welfare, providing cure for their illnesses, stressing that the well-being of a society can only be achieved through maintaining a healthy society.

Praising the efforts of the staff at Al Jalila Foundation and the generosity of the donors, Sheikh Mohammed

expressed hopes that the new facility will position itself as a regional and global research centre that can match internationally-recognised research centres in fame and status.

The research centre is fully funded by Al Jalila Foundation. It will have an independent governance structure and a board of scientific advisors who will report to the Board of Directors of Al Jalila Foundation.

The UAE's first independent multi-disciplinary research centre will bring together local and international biomedical researchers and scientists to develop cutting-edge research that addresses the country's most prevalent health challenges: cancer, cardiovascular diseases, diabetes, obesity and mental health.

Set to open in 2017 at Dubai Healthcare City, scientists will be able to carry out basic, translational, and clinical research in collaboration with hospitals.

"Research is expensive. Medical research requires huge investment in infrastructure, people and research programmes. To this end, Al Jalila Foundation is actively engaged in fundraising to invest in medical research. We are calling on philanthropists, corporates and individuals to join us in our mission. Our efforts today will benefit future generations," says Professor Sehamuddin Galadari, Academic & Research Advisor of Al Jalila Foundation.

Forging Global Linkages

Professor Galadari heads the Foundation's medical research strategy which aims to create a sustainable research platform in the UAE by developing national resources and capabilities on par with international standards.

Internationally-renowned Professor Galadari brings a wealth of philanthropic, scientific, medical and Board-level expertise to Al Jalila Foundation.

"The dream is big, but it is within our reach thanks to the many who have already pledged their support to our vision to transform lives through pioneering scientific advancements. Research is a life-long commitment and for it to be truly rewarding requires life-long investment," adds Professor Galadari.

The centre, when open, will collaborate with world renowned research institutions to foster international scientific collaborations, nurture home-grown biomedical researchers and introduce best practice in the region.

On the kind of global linkages being sought for this Research Centre, he explains that "In order to expand our capabilities and to ensure that we build a research culture in Dubai, we need to collaborate with leading research institutions be it through exchange programmes or joint research activities."

"We are currently engaged with institutions in North America, Europe and the Far East. We have signed collaborative agreements with Harvard Medical School and are in the process of concluding partnerships with

a well-known hospital in Boston and other institutions in Britain, France and South Korea."

On the outcomes that he expects from the Research Centre, Professor Galadari says that "it is expected not only to be a centre of excellence for research output and discovery, but also the cradle to prepare future scientists and a vibrant research environment."

"We would like to encourage more biomedical research to be carried out in Dubai. To fulfill that mission, we offer seed grants to encourage young doctors and scientists to carry out research to enable their idea to be tested and discoveries to be made. Additionally, we offer international research fellowships to young biomedical Emarati professionals to pursue research training at world renowned institutions.



The AJF Medical Research Symposium

Vision for a Healthier Future

“Through these activities we feel the outcome of which will be a vibrant research environment engaged in addressing national health issues and contributing to finding answers and providing basis for future cures and interventions.”

Moreover, he says that it is hoped that the research centre will be “the cornerstone for future biotechnological and innovation industrial spin-offs, as well as, being attractive to biopharmaceuticals and research companies eager for expansion in the region.”

Based on several local and international studies, Al Jalila Foundation identified five health priorities prevalent in the UAE: cancer, cardiovascular diseases, diabetes, obesity and mental health.

According to the World Health Organisation non-communicable diseases (also known as lifestyle diseases) are becoming epidemic.

Asked how the Research Centre has zeroed in on the five health priorities for research, Prof. Galadari says: “Today, we are facing global health challenges of unprecedented magnitude. Not only have NCDs become a health-care burden, recent studies estimate that by 2030 they will be a global economic burden.”

“This does not mean that we will not explore other focus areas; our research priorities will be dictated by the current and evolving health challenges in the UAE and the region. But for now, we have a mighty task ahead with the 5 chosen research themes.”

In line with the vision of His Highness Sheikh Mohammed Bin Rashid Al Maktoum to position the UAE at the forefront of global medical innovation, the Al Jalila Foundation is paving the way for a thriving medical research community. “We are seeing great enthusiasm and a genuine interest in science from young and aspiring researchers and scientists,” says Prof Galadari.

“To fulfill their ambitions we offer a number of funding schemes, including seed grants and international fellowships. In 2014, we awarded Dh3.85 million for 15 research projects. We have seen an increase in the number and quality of applications and expect to award a larger number of seed grants this year.”



Professor Sehamuddin Galadari, Academic & Research Advisor of Al Jalila Foundation

However, to cultivate a research culture among youth, “we need to work with authorities and institutions to ensure that the youth get the right opportunities to pursue their research ambitions; we need to make sure they get sufficient time for research work while also working for their respective institution. Research is vital to progress and as such we need to reward research productivity and see it as a contribution to the organisation.”

Professor Yusuf Hannun, Director of the Stony Brook Cancer Center and Joel Strum Kenny Professor of Medicine in Cancer Research in the US, and an internationally-acclaimed researcher whose contributions in lipid biology opened up new fields of investigations in cancer therapeutics, says: “Al Jalila Foundation is blazing a trail in medical research and is on track to become a biomedical research hub. As a forward-thinking country, inspired by visionary leadership, the UAE has all it takes to place itself on the global map for medical research. The talent that I saw in Dubai is at par with developed countries in the west; what is needed now is an environment where they can progress their thinking and capabilities.”

“IN 2014, WE AWARDED DH3.85 MILLION FOR 15 RESEARCH PROJECTS”

CAFÉ SCIENTIFIQUE, A GRASS ROOTS MOVEMENT IN DUBAI

How a cup of coffee is all it takes to find your Eureka moment!

From Leeds to Dubai

Set outside an academic setting, can a lay person explore some of the cutting edge developments and latest concepts in science and technology? In Leeds, UK, way back in 1998, this simple concept called Café Scientifique was launched. All it costs is the price of a cup of coffee or beverage. It caught on in other parts of the world and became a wider movement.

Now for the last three years, Café Scientifique is thriving in the new climate of Dubai, helmed here by Rohan Roberts and Raya Bidshahri, co-founders, who are strong advocates of Science and are committed to promoting a public understanding of science and STEAM (Science, Technology, Engineering, Art, Mathematics) education among schools, universities, the wider community and the general public. Both are techno-optimists and share a background in Literature and Science.

The first Café Scientifique event was held on Friday, April 26, 2013, and discussed 'The Edge of the Universe'.

"We both agree that science is the best tool we have to make sense of reality and that science is more than just a body of knowledge, it's a way of thinking. We share a passionate interest in Astronomy and Neuroscience. And we were inspired to share that passion with the rest of the community. We wanted everyone to see how amazing science can be," says Roberts, head of professional development at The Winchester School, Dubai.

He wears many hats, including that of organiser of the successful SciFest Dubai, a major regional festival of the Arts and Sciences, also into its third year.

"We also read the same books – by Steven Pinker, Peter Diamandis, Ray Kurzweil, Bertrand Russell, David Deutsch and so on... and we realised that technology and the changing zeitgeist is actually making the world better – and not worse – contrary to what mainstream media tells us."

Bidshahri says she found that the general public hardly ever engaged with science and technology in their everyday lives. "Most people often forget about science after they completed school. STEM – Science, Technology, Engineering, Mathematics – fields are perceived as academic areas that are only accessible to a few people with PhDs. Of course, that is far from the truth because science affects us in our everyday lives in so many different ways. It's not just about appreciation; a lack of scientific understanding can actually hurt our species in the long run."

The diligent duo are also part of Intelligent Optimism, a Dubai-based movement which promotes positive thinking in society, which has caught on especially among school children.

"Science literacy is an essential component of human progress and survival, and more people need to understand its essence and how it impacts our lives.







That's where both Café Scientifique and Intelligent Optimism come in: there is an incredible need for the public engagement with science. With Intelligent Optimism, in particular, we want to get people excited about the future of science and technological advancements," says Bidshahri.

Café Scientifique Dubai is now in its fourth season and meet on the last Friday of every month and have a different theme each time. Says Raya: "Our last event was about 'Space Exploration in the UAE' and before that about 'Artificial Intelligence and The Technological Singularity'."

"In the past we've talked about de-extinction, astronomy, neuro-education, neuroscience and renewable energy. The central theme to the discussions is often about how these different areas and advancements in science affect society and how we can utilise them in the best way possible."

The sessions unfold in a social setting. "It's important to add that Café Scientifique events are not conferences. Café Sci is social meet-up group," adds Roberts.

The focus is not on lectures but on conversations and the aim is to meet new people and have interesting conversations and learn about science away from a classroom or lab or lecture hall. The idea is to talk about science in a friendly and informal setting over a cup of coffee.

Far from a uniform profile for the attendees, they are between the ages of 16-65. They come

from all nationalities and varied professions. "We have artists, musicians, fashion designers, school principals, students, corporate executives... and so on. It's not just a forum for science nerds. It's a place where anyone who is curious and is interested in having stimulating conversations is welcome," says Roberts.

Bidshahri reels off a list of prominent speakers and the subjects tackled. "We've had some exciting guest speakers, such as NASA astronaut Dr Donald Thomas and Mars-One Candidate Mikolaj Zienliski. We've also had Hasan Al Hariri, the founder of Dubai Astronomy Group, and Saeed Al Gergawi of the UAE Mars Mission team."

The last session on UAE's space exploration efforts by Al Gergawi had over 80 people, with the audience taking part enthusiastically in the discussions and conversations. Those who tried to reserve a bit late could not get access. "It was an extremely exciting event. Saeed was a superb speaker and a great representative of the UAE's efforts in the field of space exploration. There was a real buzz and a fabulous vibe," according to Roberts.

Feedback

He says that over the last four seasons, they have been growing in numbers, with Facebook followers of over 25,000 people. And regularly Café Scientifique has between 80-100 people in attendance at

Café Scientifique session in progress in Dubai



the live event. “We’re very active on Facebook and have stimulating discussions about current developments in science. The audience just loves these meet-ups and we’ve been getting more and more popular. This is a good thing for science.”

Roberts reminds us that Café Scientifique is not meant to be a lecture or a conference. “Ideally we’d like to cap numbers at around 60 so the events have a small intimate feel. However, often we have to raise the limit to 80-100 because people request repeatedly to be allowed to join. We have thought about expanding – but that would just spoil the current format. Sometimes it’s about quality and not quantity. And we’re quite pleased with the quality of our events.”

On whether the Café Scientifique movement can lead to a wider movement for knowledge and creativity in the UAE and the Gulf, this is what he says: “There are now Science cafes in over 80 cities in the world. Café Scientifique in Dubai was the first of its kind in the Middle East. We’ve grown to over 25,000 followers. SciFest Dubai, led by Lara Matossian who is the CEO and Founder, is the entity under which Café Scientifique operates has over 100,000 followers on social media. So judging from the attendance and

online membership, it would seem that people are definitely interested in acquiring knowledge and scientific literacy.”

SciFest Dubai is a platform to promote creativity, critical thinking, innovation, and STEAM education. The aim is to promote a love for science and a deeper understanding of the scientific method. “On discovering that students in the United States were lagging behind many other developed countries, Congress authorised massive funding for STEM education. Sadly, however, after several years of funding, change has been slow and progress among American schools has been unremarkable,” according to Roberts.

“What high school educators want to see is greater student participation, higher motivation, and an increased interest in relevant issues. What Universities and big companies want are students who are creative, analytical and capable of thinking critically.”

Persuasive research, particularly from the field of neuroscience, seems to indicate that one way of ensuring this is to integrate skills, strategies, and activities from the Arts into the teaching of STEM subjects. “The idea is to move from STEM to STEAM,” concludes Roberts. ♪

Saeed Al Gergawi (second from left) of the UAE Mars Mission team, with Raya Bidshahri, Co- Founder of Café Scientifique (left), Lara Matossian, CEO and Founder, SciFest Dubai (third from left), and Rohan Roberts, Co- Founder of Café Scientifique (right).

GCC BETTER PLACED TO FACE VOLATILITY

Flashes speaks to Dr Nasser H. Saidi, Founder and President of Nasser Saidi & Associates and Former Chief Economist and Head of External Relations at the DIFC Authority and Executive Director of Hawkamah, on the volatility in global financial system and its effects in the Gulf region

When do you think the market will stabilise from the current massive volatility in local stock markets, as also the plunging oil prices?

The precipitous fall in oil prices has continued since June 2014, with factors like weakening demand and geo-political risks adding to its further fall. I believe that oil prices are likely to remain under the \$65- mark in the medium term. However, the current volatility in local stock markets can also be attributed partly to spillover effects from the Chinese stock market movements, where the government has been intervening to take remedial measures and continued uncertainty as to the timing normalisation of US monetary policy, which is negatively affecting portfolio flows to emerging markets.

How would the potential rate hike in the US impact the local and regional markets?

The peg to the US dollar means an absence of monetary policy independence and little room for the GCC countries to manoeuvre if the US raises policy rates – it will lead to higher domestic rates and credit tightening for the private sector; governments' borrowing costs are also likely to increase, while domestic liquidity has been falling due lower current account surpluses. Given

that lower oil prices are dampening economic growth in the region, a hike by the Fed will only further slow growth in the GCC. However, given the large international reserve and fiscal buffers and their Sovereign Wealth Fund (SWF) assets, the GCC are better placed than the rest of the Emerging Market Economies (EMEs). Nevertheless, the GCC countries do not have the exchange rate flexibility that other EMEs have used through exchange rate depreciation to adjust to the external pressure of capital outflows.

Which sectors would benefit from the rate hike and the lower oil prices? And would the banking and financial sector be a good bet?

A US rate hike is likely to be modest, some 25 basis points, and the immediate impact on borrowing costs will be marginal. What will matter is that the process of normalisation has started implying upward pressure on future interest rates. GCC countries announced 2015 budgets with most countries announcing budget deficits and cutting down on 'non-strategic' spending and delaying projects as a result of lower oil prices. This will negatively affect the construction industry. However, lower energy prices will favour industry and activities – including transport and

Dr Nasser H. Saidi, Founder and President of Nasser Saidi & Associates



tourism -- which are energy intensive. The banking and financial industry can benefit from higher lending rates which will tend to increase spreads and margins. More importantly, the financial sector can benefit from the development of the government debt market as governments turn to financing budget deficits through issuing debt as well as medium and longer-term bonds and Sukuk to finance infrastructure projects.

How do you think the GCC economies should handle this volatility in oil prices?

Given the high dependence of GCC governments on oil revenue (which represents, on average, 85 per cent of revenues), the falling oil prices have meant that the impact on budgets is large: deficits of US\$113 billion or about 8.5 per cent of GDP. The GCC countries, however, can draw on accumulated financial and fiscal buffers and substantial international reserves to offset the negative effects on economic growth. But this is a short-term palliative and cannot be sustained given the unfavourable prospects for oil prices.

The GCC should introduce fiscal reforms and develop programmes and incentives for greater private sector participation, privatisation of public sector activities (e.g. education) in response to the lower oil prices. Budget consolidation is required to ensure fiscal sustainability and preserve resources for future generations, along with the introduction of new policy tools for economic management. This can take the form of expenditure reduction (phasing out subsidies), new sources of revenues or a combination. The time is therefore right to introduce fiscal reforms: the UAE has already taken the first step in phasing out the subsidies – the rest of GCC, I believe, will follow suit. This should be accompanied by raising prices of public utilities (water, electricity, as initiated by Abu Dhabi) alongside increased revenue diversification via the introduction of broad-based taxes like VAT, corporate profit tax and excise taxes on commodities like cigarettes, alcohol, luxury cars etc.

How about Iran and its impact for the region, given the recent nuclear deal?

The GCC countries, along with Iraq and Lebanon, will be major beneficiaries of a post-sanctions Iran, despite the downward pressure on oil prices as Iran increases its exports. The immediate benefit would come from a revival of trade, with

the UAE and Oman being major beneficiaries, along with major trade partners including China and the EU. The UAE, particularly Dubai, as a regional business, trade and financial hub with an active Iranian diaspora and Lebanon's banking system stand to gain from Iran's opening. Iran will need massive investments in infrastructure. The capital-rich GCC countries would benefit from high return investment opportunities, while their construction and real estate development companies can participate in infrastructure and development projects. Renewed ties with Iran would also mean lower sovereign risk premium resulting in a lower cost of capital for companies operating in the Gulf. It could mean an unprecedented boom for the region.

When will China find its foot back? What would be the potential trigger?

The current data seem to suggest a slowdown in the Chinese economy. However, even at around 6.5 per cent to 7 per cent growth rates, the economy is moving at a faster pace relative to the rest of the world. China is going through a big transformation, a structural change. The economic indicators that were relevant to measure economic performance in the past may not be accurate or relevant in this new phase of growth. China is gradually shifting away from investment and export-led growth towards services and consumption. While this happens, growth diminishes. But this rebalancing will be beneficial in leading to less volatile growth, along with the government's policies of greater financial liberalisation, internationalisation of the renminbi, reforms of its state-owned enterprises and a greater role for the private sector and markets (to name a few). In addition, China is also developing the New Silk Road Economic Belt and integrating more regional economies into its global value chain. This along with the mechanisation and industrialisation of Chinese agriculture will be dominant themes in the coming decade. On the financial side, the trend is clear: a multi-polar global economy is heading to a multi-polar monetary system with three major currencies, the US dollar, the Euro and the renminbi (RMB). Given the prominence of China as the GCC's trade partner, with oil the main link, it is not long before we see the RMB being used to finance, clear and settle trade between the Middle East, the GCC and China.



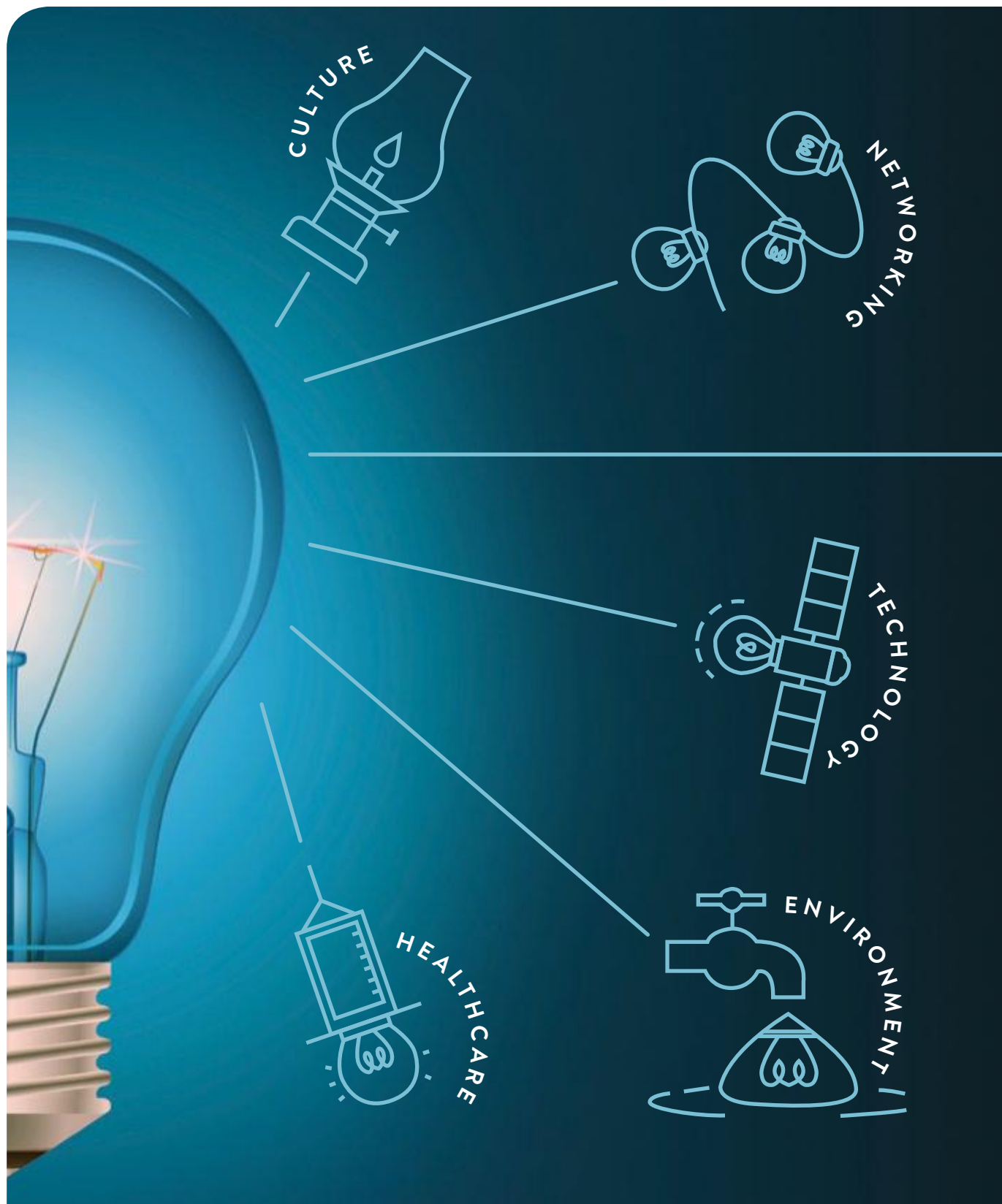
How would you see gold and bonds in the current market scenario? As a safe haven?

Gold, so far, has been a relative safe haven – gold demand tends to increase in times of volatility. But absent high inflation rates, we cannot expect a higher trend in gold prices. Given that many countries in the region have already issued and/or announced bonds/ Sukuk to finance government budget deficits, the region should use this opportunity (of lower oil prices) to develop its own local currency bond market. A broad, deep and liquid government bond market will help the countries of the region to get long-term finance for its infrastructure and other development projects. The GCC countries should finance infrastructure by issuing securities backed by future cash flows from the infrastructure services. It will also provide institutional investors with instruments that satisfy their demand for safe and stable long-term yields as well as be the building block for a corporate bond market.

And do you think globally, that instead of focusing on economic reform, there is over reliance on Central Banks who are propping up economies?

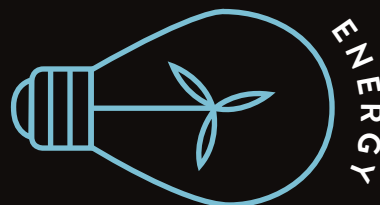
CHINA IS GRADUALLY SHIFTING AWAY FROM INVESTMENT AND EXPORT-LED GROWTH TOWARDS SERVICES AND CONSUMPTION.

Central banks tripled or quadrupled the size of their balance sheet post-financial crisis, namely through credit easing or quantitative easing. This has been a massive and historically unprecedented monetary easing. Despite this, we have seen a tepid and fragile recovery in the advanced countries and business investment has not recovered. Borrowing was encouraged at the time of historically low interest rates; but the real question is how the central banks will tackle deleveraging when the interest rates start to edge higher, cost of debt rises and bond prices fall. We might be looking at the beginning of the next financial downturn. How will you wean away the baby from the soporific of low interest rates and plentiful liquidity? A successful exit from this leverage trap should include appropriate fiscal and macro-prudential policies, together with the restructuring of private-sector (bank, household, corporate) debt and sovereign debt where required. †



HAMDAN INNOVATION INCUBATOR GIVES WINGS TO YOUNG ENTREPRENEURS

A can-do attitude and the conviction to make it happen are what sets Dubai apart from many other business hubs across the region and the rest of the world



"In new Dubai, young people single-mindedly pursue their dreams, trying to achieve the impossible," is what Paul Coelho says when speaking about the Emirate.

It is in that spirit that Dubai SME, the agency of the Department of Economic Development (DED) in Dubai mandated to develop the small and medium enterprise (SME) sector, launched the 'Hamdan Innovation Incubator,' in September last year. It is a complete support environment to stimulate and foster innovative entrepreneurial projects of the youth, under the patronage of His Highness Sheikh Hamdan Bin Mohammed Bin Rashid Al Maktoum, Crown Prince and Chairman of the Executive Council of Dubai.

As it completes the first year, Yousuf Lootah, Senior Manager, Hamdan Innovation Centre (Hi2), Dubai SME, elaborates on its operations and activities and how it has impacted the entrepreneurial ethos in the Emirate.

Can you tell us the main aim behind this initiative and the progress made since its launch?

The initiative sought to build on the Incubation Centre of Dubai SME that was in existence since 2002, for more concerted efforts to foster innovative businesses run by Emirati entrepreneurs, empower Dubai as the entrepreneurial capital of the region, and to spread the culture of innovation among young UAE entrepreneurs.

Within one year from its launch, and with over 11 years of accumulated experience, Hi2 has incubated more than 20 new innovative enterprises, besides the 40 that were already in the incubation stage. Hi2 also helped 13 inventors in the region to develop their inventions, create prototypes, and secure their intellectual property rights with the help of the Ministry of Economy. After studying the needs of the market, Hi2 has also launched a membership that supports students, inventors, UAE nationals and residents as well as GCC nationals.

What are the facilities and support structure for Hi2's activities from Dubai SME and DED?

Hi2 services consist of four main aspects, and many additional ones. The main ones are:

The Idea Lab: helps entrepreneurs build their business plan, and evolve their idea through specialist consultations.

Incubators: Hi2 helps entrepreneurs start executing their business after building it, through their office within Hi2, and a free DED license. It also connects them to a network of entrepreneurs, professionals, and key people in the ecosystem. The Mentorship programme: Entrepreneurs are introduced to Hi2 mentors pool that is well versed in all aspects of the business. Such help from serial entrepreneurs and CEOs with massive experience in the start-up world enables aspiring entrepreneurs become experts in specific business activities.

TO CREATE INTERNATIONAL GROWTH OPPORTUNITIES FOR ITS MEMBERS, HI2 DEVELOPED THE SME HUB PASSPORT PROGRAMME IN COLLABORATION WITH IMPACT HUB.

Mohammed Bin Rashid Fund: Provides financial assistance of up to Dh50,000 for start-ups to grow in the competitive Dubai market.

Additional services are being introduced to Hi2 on a daily basis as per entrepreneur needs. The purpose is to fill any gaps existing in the entrepreneurial growth environment.

What are the partnerships that Hi2 has forged with other institutions to further its aim of encouraging youth entrepreneurship?

Hi2 is developing partnerships and programmes according to the needs of the entrepreneurial ecosystem. Accordingly, it co-operated with the Higher Colleges of Technology (HCT) to open an Incubation Centre at Dubai Women's College to offer opportunities for the students and graduates to start developing their business ideas at a young age.

Hi2 also collaborated with the Dubai World Hospitality Championship to open a specialised Incubation Centre for the hospitality and food and beverage (F&B) sectors.

To create international growth opportunities for its members, Hi2 developed the SME Hub Passport programme in collaboration with Impact Hub. The Hub members, or Hubsters, are able to gain from the experience of over 70,000 entrepreneurs across the world, and benefit from the services of 25 different hubs across the world.

Under a memorandum of understanding (MoU), Hi2 is assisting Dubai Police to develop the existing talent capital in the force as well as their innovative employees. Hi2 also supports the City Builders initiative as a part of the Blue Team that fosters and develops young talent in the UAE.

Who is the target group of the Hamdan Innovation Incubator? How do you promote the message of Hi2 among this group?

Hi2 targets innovation and talent across the UAE in different kinds of industries but its primary focus is on four sectors – ICT, Design, Health, and Education – key sectors on which Dubai's 2020 strategy is also focused. Hi2 also supports all kinds



of professional and commercial businesses in various sectors in the market.

Hi2 delivers its message across various channels, including regular events and gatherings, roadshows and workshops, and across social media and news.

Hi2 specifically aims to facilitate early development among start-ups. As these new businesses start moving forward, what are the support measures provided to ensure that they are successful in the market?

The start-up gets incubated for three years, and then goes through regular evaluation of its operations development and financial analysis to make sure it is moving in the right direction.

At Hi2 we aim to equip companies to launch on their own in the market after their graduation from the programme. However, members will stay a part of Dubai SME even after graduation, to benefit from different SME services, such as the Fund, and the Government Procurement Programme (GPP).

Yousuf Lootah,
Senior Manager,
Hamdan
Innovation
Incubator (Hi2),
Dubai SME



SOME OF THE START-UPS THAT WERE LAUNCHED THROUGH HI2 INCLUDE:

Go Glocal (Dr. Tarifa Al Zaabi): Go Glocal was launched through the Dubai SME Incubation Centre in 2010 as a social enterprise in educational consultancy and training. The company stood apart by using LEGO facilities and playing methods in its training for the first time.

More than Events (Maryam Shahin): Launched in 2013 as an innovative event service that takes care of everything related to events, from planning and marketing to supply and execution.

Xpoze (Fatma Mudharreb, Buthaina Al Marri, Rawdha Al Marri): Launched in 2010 by a team of Emirati ladies who were all passionate about creative interior design, with the goal of presenting a new design perspective.

Jalees Home Healthcare (Dr. Aisha Al Mutawaa): Launched in 2012 to provide a unique bespoke home care service for the elders.

Codic Studio: Launched in 2011 and has been growing ever since in the graphic design and creative concept building segment.

Omniyati (Ashwaq Al Hashimy): Launched in 2011 as the first prosthetic sculpting centre to help disabled people.

Gafra Jewellery (Abdulla Bil Jafra & Hamad Bin Shaiban): Launched in 2013 as a high-end Arabian jewellery brand that brings Emirati culture on modern art pieces.

Genie (Mohammed Al Janahi): Launched in 2015 with a smart services bundle that delivers all you can think of to you, when you need it, through a telephone call.

What is the modus operandi of selecting start-ups for the Incubator?

Entrepreneurs are selected into Hi2 based on their business idea. The value proposition of the business idea in terms of innovation is the most important factor in the selection process. The business sector is also a factor, as some sectors cannot be incubated in Hi2, for example, F&B, and general trading.

Till now how many start-ups have been launched through Hi2? Can you please tell us in detail about two of the most successful ones (with their remarks if possible)?

Since its launch in 2002 (starting with the Incubation Centre in Dubai SME), Hi2 has helped launch

700 small companies through its three-year programme. Many of these companies developed faster than the set pace of the incubation programme and graduated within 16 to 18 months of their launch.

What are the future programmes of Hi2?

Hi2 develops new programmes regularly based on market study and entrepreneur needs. Currently Hi2 is working on a six-week start-up development programme to help entrepreneurs take their business to a higher level in a shorter period and enable them get the required funds. Hi2 is also building a programme that will bring together the start-up community to target growth beyond the region. ↗



2nd Knowledge Conference 2015 to focus on innovation

The Mohammed Bin Rashid Al Maktoum Foundation (MBRF) has announced on August 23, 2015, that the second edition of the Knowledge Conference, to be held from December 7 to 9, 2015, at Grand Hyatt Dubai, will focus on innovation as its key theme.

His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, witnessed the inaugural event and the announcement of the winner of the Sheikh Mohammed Bin Rashid Al Maktoum Knowledge Award, which honours an international personality for his or her contributions to the dissemination of knowledge.

His Excellency Jamal bin Huwareb, Managing Director of MBRF, said the second edition of the Knowledge Conference will feature innovation as the main theme in line with the directives of President His Highness Sheikh Khalifa bin Zayed Al Nahyan declaring 2015 as the Year of Innovation.

HE Bin Huwareb announced that Knowledge Conference 2015 will have three core pillars – education, information technology and scientific research. “Education has been chosen as a major pillar considering its significance to the progress and development of the society. The quality of education is closely linked

to social development. They are two sides of the same coin, as building human capital is critical to achieving sustainable development and social justice to improve the quality of life of the people,” he said.

The first session of the Knowledge Conference witnessed the launch of the Third Arab Knowledge Report and the start of work on the Arab Knowledge Index, an indicator that monitors the status of knowledge in the Arab world on an annual basis. The three-day event discussed key issues on the knowledge domain that touch the lives of people and paved the way for effective dialogue on the development of knowledge. [f](#)



مؤسسة محمد بن راشد آل مكتوم
MOHAMMED BIN RASHID
AL MAKTOUM FOUNDATION



MBRF Oxford Workshop

Extending horizons with vibrant discussions on Arab Knowledge Report



(L-R) HE Jamal bin Huwareb, Managing Director of Mohammed Bin Rashid Al Maktoum Foundation; HH Sheikh Mohammed Bin Maktoum Al Maktoum, 1st Secretary- Head of the Economic Department, UAE Embassy in the UK; and Prof Nick Rawlins, Pro Vice Chancellor of the University of Oxford; at the fourth global workshop organised in the University of Oxford in collaboration with the United Nations Development Programme as part of Arab Knowledge Report workshop series in Arab and international cities.

Mohammed Bin Rashid Al Maktoum Foundation (MBRF) concluded its fourth global workshop organised in Oxford in collaboration with the United Nations Development Programme (UNDP) on September 8, 2015 as part of its Arab Knowledge Report workshop series in Arab and international cities. This is the fourth workshop building upon workshops held in Amman, New York and Paris, which have helped highlight best international practices in the field of knowledge, education and employment.

The workshop held at St. Anthony's College in the University of Oxford hosted a number of specialists and academics in the areas of knowledge and employment. In his opening speech on the occasion, HH Sheikh Mohammed Bin Maktoum Al Maktoum, 1st Secretary- Head of the Economic Department, UAE Embassy in the UK, stressed on the importance of enhancing capabilities, so as to ensure that society moves towards a progressive future. He said that building a knowledge society requires comprehensive development of the knowledge sector, including measures to make education available at all levels, establishing adequate training centres and more.

Also speaking on the occasion, His Excellency Jamal bin Huwareb, Managing Director of MBRF, said the workshop in Oxford contributed to MBRF's preparations for the Knowledge Conference, which will be held later this year.

During the first session of the workshop, Dr. Khalid Al Wazani, core team member of the 'Third Arab Knowledge Report' presented the most important results of the third 'Arab Knowledge Report', explaining how the report involved a field survey in which over 5,000 Arab youth from the UAE, Jordan, Morocco and Tunisia participated.

The second session tackled the use of technology to improve education and employment opportunities. The following session examined examples of successful employment creation. The roles of major corporations as well as active entrepreneurs were seen as key elements of creating employment for young Arabs.

The fourth and final session had presenters emphasise the value of evidence and analysis, the role of women, and the challenges faced by youths in the Arab region. The workshop was wrapped up with closing comments and recommendations along with plans for actions leading up to the Knowledge Conference in Dubai on December 7 to 9, 2015. †

Dubai International Programme for Writing: Germany calling

How literature will pave the path to a glorious cross-cultural renaissance



It is a cross-cultural initiative that epitomises MBRF's noble mission: a UAE-Germany collaboration to make the world of literature richer. MBRF launched the next phase of its Dubai International Programme for Writing's 'Writers Exchange' by signing an agreement between MBRF and the Goethe-Institut of Germany. In this phase, which begins on November 1, 2015, three writers from Germany will be hosted in the UAE and offered an opportunity to experience the lifestyle in the country to inspire them to narrate their experiences in literary works. Announcing the Writers Exchange, with Germany, at a press conference in Dubai, His Excellency Jamal bin Huwairb, Managing Director of MBRF, said the Foundation's cooperation with Goethe-Institut reflects its keen interest to build cultural bridges between the UAE and other countries around the world. The Writers Exchange between the UAE

and Germany marks another major milestone for the Dubai International Program for Writing in its efforts to prepare young authors and motivate them to develop their writing capabilities to enhance their expertise at the global level, HE Bin Huwairb said.

"MBRF is committed to building a knowledge-based society in line with the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, and the directives of His Highness Sheikh Ahmed bin Mohammed bin Rashid Al Maktoum, Chairman of the Foundation," stated HE Bin Huwairb.

"We believe that our cooperation with Goethe-Institut will strengthen the UAE's cultural relations with Germany. The launch of the first phase of the Writers Exchange between the two countries will offer new avenues in the dissemination and transfer of

knowledge and create opportunities for young talent," he added.

Speaking on the occasion, Dr. Gabriele Landwehr, General Manager of the Goethe-Institut, Gulf region said: "The partnership between Goethe-Institut and MBRF is a major step that will contribute to broader cooperation between Germany and the UAE, especially in the light of the close cultural ties between the two countries. The partnership with MBRF reflects the great respect that the famous German writer Goethe had for Arab culture," Dr. Landwehr added.

Emirati writers too will benefit vastly from this cross-cultural exposure to German culture and civilisation. Teams from each country will work on three books to produce a total of six books on Germany and the UAE, to be published by the Foundation and German publishers. After all, the meeting of two great civilisations makes for a fertile breeding ground for creativity. †

The Online Oxford Arabic Dictionary free for all

Users can search more than 330,000 words and phrases

Oxford University Press (OUP) and Mohammed Bin Rashid Foundation (MBRF) announced that the online Oxford Arabic Dictionary (OAD) will be freely available to all universities, schools, public libraries, and government institutions in the UAE. Compiled by a world-class team of translators and advisors using Oxford's renowned language research programme, the OAD is the first resource of its kind to be based on real modern evidence of both English and Arabic usage. "As a leader in the dissemination of knowledge and development projects, MBRF is committed to develop knowledge-led societies in the

region and around the world. Our partnership with Oxford University Press paves the way for wider access to the online OAD, supporting MBRF's efforts to create sustainable societies and economies," said, Jamal bin Huwairb, Managing Director of MBRF

His Excellency Hussein Al Hammadi, Minister of Education, lauded the idea, describing it as a step towards the development of knowledge and education. Considering that the dictionary comes from one of the best international



Jamal bin Huwairb with His Excellency Hussein Al Hammadi

publishing houses, it will serve as a reliable resource for many, not only in the UAE but at the international level, HE Al Hammadi said. ⚡

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BY THE MOHAMMED BIN RASHID AL MAKTOUM FOUNDATION

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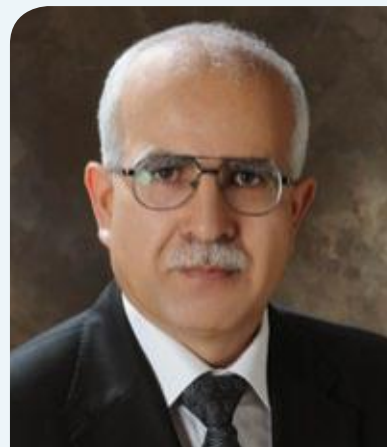
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SNAPSHOTS FROM THE REGION

A big moment for Jordanian science

A Jordanian scientist, Shaher Momani, has been nominated for the Nobel Prize in physics for 2016. Momani, a professor of Applied Mathematics and Dean of the University of Jordan's science faculty, was nominated for the prize by a group of Jordanian and Arab scientists. This is the first time that a Jordanian scientist has been nominated for the prize. Egyptian US-based scientist Ahmad Zewail won the Nobel Prize in Chemistry in 1999 and Egyptian novelist Najib Mahfouz won the prize in literature in 1988. "The move seeks to break the psychological barrier for Arab scientists and encourage their

nomination for the prize," Momani said in a telephonic interview to The Jordan Times, while also stating that no Arab-based scientist has so far won the Nobel Prize in a scientific field before. Professor Momani is the author of over 250 research papers in reputed international science journals; he is also the editor of over 30 research journals. "I have received a lot of messages from local, Arab and international scientists who expressed their support," he said. The Nobel Prize trust was founded by Alfred Nobel to reward luminaries in the world of physics, chemistry, medicine, literature, and work for world peace. ↗



Shaher Momani, Jordanian scientist nominated for the Nobel Prize in Physics

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Oman: Saving the Arabian Sea Humpback Whale

In environmentally challenged times such as these, it is indeed refreshing to see initiatives such as these: Shell Oman recently signed a sponsorship agreement with the Environment Society of Oman (ESO) to fund a study on acoustic research of Arabian Sea humpback whales in Oman. The agreement was signed by Chris Breeze, Shell's Country Chairman in Oman; Adil bin Ismail Al Raisi, Managing Director of Shell Oman Marketing Company; and Her Highness Sayyida Tania bint Shabib Al Said, President of the Environment Society of Oman.

The numbers are dire and action is urgent: ESO estimates that there are less than 100 Arabian Sea humpback whales left in Oman's waters. Crucial research will be required to protect this endangered and genetically unique sub-population of humpbacks. It is indeed music to our ears to hear of how the study will be conducted: it will focus on processing acoustic recordings of Arabian Sea humpback whales from recorders deployed between 2011 and 2013 at Halaniyat Bay and the Gulf of Masirah. Through the detection of vocalising whales, ambient noise analysis and humpback whale song analysis, the project will become a wealth of information on critical habitats, the impact of



noise-related human activities and overall whale behaviour. Other initiatives by Shell include the promotion of an environment curriculum (in partnership with the Ministry of Education) and the sponsorship of the Chief Scientist of British Schools Exploring Society's expedition to Oman, the Global Flyway Network in Barr Al Hakman, a series of books about the environment, including *Birds in Oman* and *Whales and Dolphins of Arabia*, and a study about Egyptian Vultures. ↑

Egypt: A groundbreaking desalination technique

Think of these numbers: 70 percent of our globe is covered by water, of which less than 3 percent is saline and thus not potable. The ability to transform brackish water into drinkable water has been embarked upon, especially by nations from the GCC region, but the costs and ecological footprint is prohibitive.

But there is the dire reality that by 2025, a decade from now, 1.8 billion people won't have access to clean water. It therefore makes us tumescent with pride that researchers at Alexandria University in Egypt have claimed that they've built a new desalination technology that's low cost, made in a lab with local materials, and turns salty water into drinkable water in minutes.

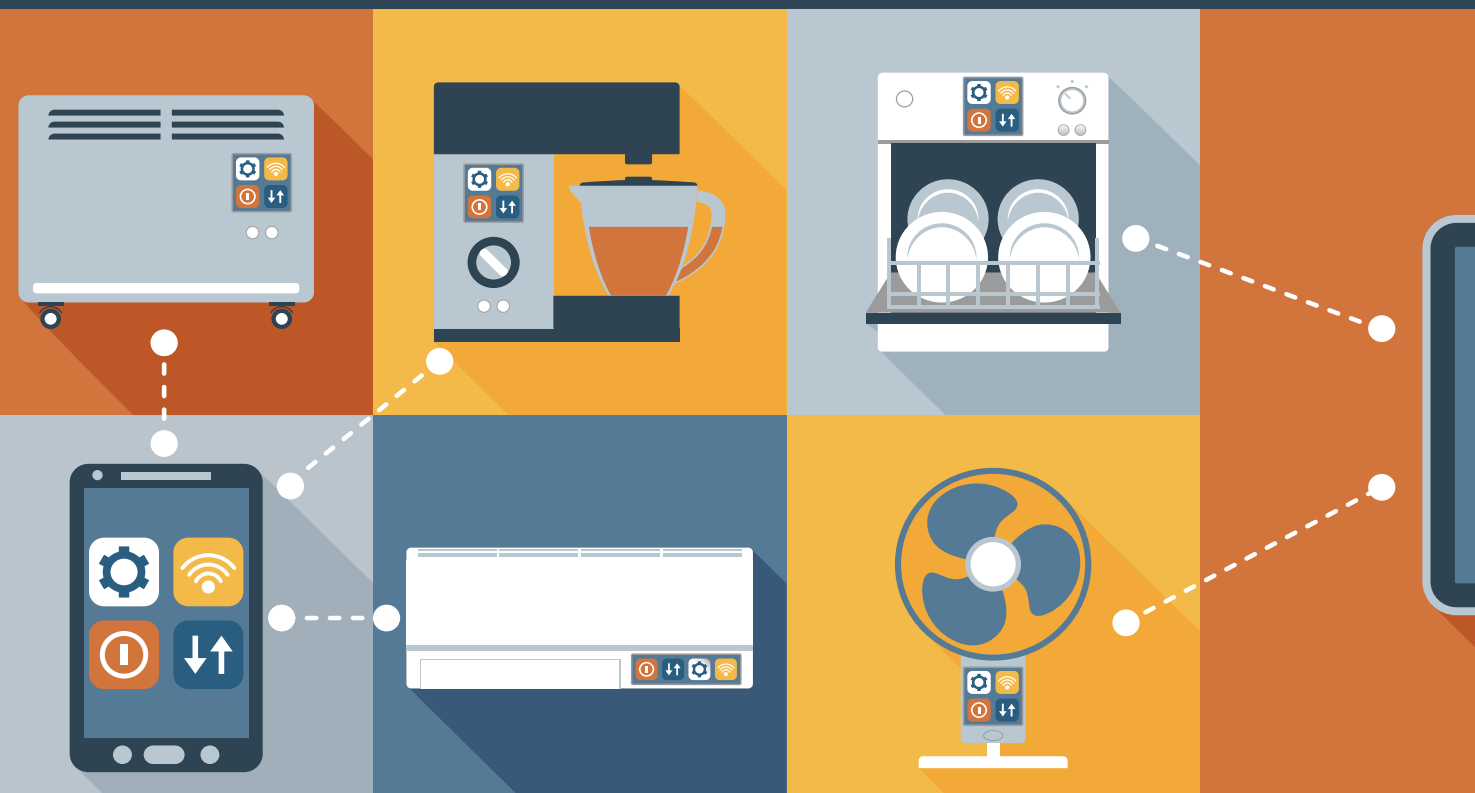
Alexandria University's method is based on a technique called pervaporation –water is filtered through synthetic membranes to remove large particles in the water first. Then, the water is heated until it evaporates. To remove the small particles, the water is condensed to yield clean, drinkable water. Two reasons make this technique attractive to developing countries in desperate need of clean, drinkable water. Firstly, the whole process doesn't require electricity. This makes it an inexpensive and reliable option for locations that don't have a consistent power supply. Secondly, by using local materials abundant in developing countries it becomes

easier for communities to create a new water source.

"The technology implemented in the study is much better than reverse osmosis, the technology currently used in Egypt and most of the countries in the Middle East and North Africa," said Helmy El-Zanfaly, a professor of water contamination at Egypt's National Research Center. "It can effectively desalinate water with high concentration of salt like that of the Red Sea, where desalination costs more and yields less." Even more interestingly, this new desalination method can also be used to tackle different sorts of contamination such as sewage and dirt. ↑



Internet of Everything & the Smart City





The ubiquitous role of Information Technology in basic infrastructure and service backbone of a city has led to the emergence of the concept of a Smart City. In terms of applied technology it refers to smart grids, smart meters and infrastructure for power, water supply and waste disposal

Dubai and the IoE

The Internet of Things (a network that connects physical objects) and Internet of Everything (IoE) (the networked connection of people, processes, data and things) will become so widespread and have the same impact as the development of electricity and transportation networks a century ago.

The Dubai Smart Government project was launched in 2000 enabling joint efforts by all government departments. Initially called Dubai eGovernment, the department's name was changed in June 2013 to Dubai Smart Government, by His Highness Sheikh Mohammed Bin Rashid Al Maktoum, UAE Vice President, Prime Minister and Ruler of Dubai, in line with his initiative to transform to an era of smart government.

It is a pioneering initiative in the region to provide government online services across the spectrum of corporate and community life in the emirate and overseeing the eTransformation in Dubai Government.

Dubai is progressing at great speed on its plans for a fully mobile government, with many services now available on mobile platforms.

At the first Internet of Things Expo (IoTX) held in Dubai in June this year, Ahmad Bin Humaidan, Director-General of Dubai Smart Government, said that IoT can add more value to the customer experience and can help in health care and transport. "It has a big role to play in Smart City and smart services offered by the government."

According to Ahmad Bin Byat, Chairman of Smart Dubai Executive Committee, the top priority for Smart City is smart building, transport, energy and water. "There is no point in calling it a Smart City if people don't benefit from it. Building a smart service is for people to use it, otherwise it is a total waste of money," he said at IoTX.

The Dubai Strategic Plan 2021, released on December 17, 2014, puts the people of Dubai first, while describing the future of Dubai based on six themes, which together form the smart city's vision up to 2021.

The six themes are: A city of happy, creative and empowered people; an inclusive and cohesive society; the preferred place to live, work and visit; a smart & sustainable city; a pivotal hub in the global economy; and a pioneering and excellent government.

Global Scenario

In February 2013, Cisco released a study predicting that \$14.4 trillion of value (net profit) will be at stake globally over the next decade, driven by connecting the unconnected — people-to-people (P2P), machine-to-people (M2P), and machine-to-machine (M2M) — via the Internet of Everything (IoE).

The benefit of IoE is derived from the compound impact of connecting people, process, data, and things, and from the value this increased connectedness creates as "everything" comes online. In this respect, IoE provides a clear answer to the question of future sources of value.

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THE NEXT DECADE



\$2.5
TRILLION

ASSET UTILISATION

IoE reduces selling, general, and administrative (SG&A) expenses and cost of goods sold (CoGS) by improving business process execution and capital efficiency



\$2.5
TRILLION

EMPLOYEE PRODUCTIVITY

IoE creates labour efficiencies that result in fewer or more productive person-hours

**EMPLOYEE
PRODUCTIVITY
(\$2.5 TRILLION) —
IOE CREATES
LABOUR
EFFICIENCIES
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FEWER OR MORE
PRODUCTIVE
PERSON-HOURS.**

The \$14.4 trillion in IoE 'Value at Stake' — the potential bottom-line value that can be created, or that will migrate among private-sector companies and industries based on their ability to harness IoE over the next decade — is being driven by five key areas:

- Asset utilisation (\$2.5 trillion) — IoE reduces selling, general, and administrative (SG&A) expenses and cost of goods sold (CoGS) by improving business process execution and capital efficiency.
- Employee productivity (\$2.5 trillion) — IoE creates labour efficiencies that result

in fewer or more productive person-hours.

- Supply chain and logistics (\$2.7 trillion) — IoE eliminates waste and improves process efficiencies.
- Customer experience (\$3.7 trillion) — IoE increases customer lifetime value and grows market share by adding more customers.
- Innovation, including reducing time to market (\$3.0 trillion) — IoE increases the return on R&D investments, reduces time to market, and creates additional revenue streams from new business models and opportunities.



\$2.7
TRILLION

SUPPLY CHAIN AND LOGISTICS

IoE eliminates waste and improves process efficiencies



\$3.7
TRILLION

CUSTOMER EXPERIENCE

IoE increases customer lifetime value and grows market share by adding more customers



\$3.0
TRILLION

INNOVATION INCLUDING REDUCING TIME TO MARKET

IoE increases the return on R&D investments, reduces time to market, and creates additional revenue streams from new business models and opportunities

Four Themes

For Dubai, Cisco found that the primary drivers of IoE value at stake in the public sector to be aligned with the emirate's vision enabling Life, Economy and Tourism.

Over the five years (2014-2019), the value at stake for Dubai's public sector was Dh4.3 billion at conservative estimates, and the value at stake for the private sector was Dh13.6 billion.

Four overarching themes emerge from the study: Public sector productivity (Telework, Collaboration, BYOD, Smart Building);

Transport (Buses, Parking, Street Light, Travel Avoidance); City Management (Video Surveillance, Water, Electricity, Waste); and Other (health, learning, transmission grid and smart payment).

Future of Government

About the future, top consulting firm Deloitte's recently published a special report titled, 'Gov 2020: A Journey into the Future of Government'.

It mentions seven key trends that will fill this gap between the government and

DID YOU KNOW?

SONGDO INTERNATIONAL BUSINESS DISTRICT IN SOUTH KOREA IS A NEW SMART CITY OR "UBIQUITOUS CITY" COMPRISING 600 HECTARES (1,500 ACRES) OF RECLAIMED LAND ALONG INCHEON'S WATERFRONT. IT IS CONNECTED TO INCHEON INTERNATIONAL AIRPORT BY A 12.3-KILOMETRE BRIDGE, AND ARCHITECTURAL HALLMARKS LIKE NEW YORK CITY'S CENTRAL PARK AND VENICE'S WATERWAYS WILL BE MERGED INTO ITS DESIGN.



**FIRMS LIKE
PANASONIC
IN JAPAN,
IN TANDEM
WITH
OTHER
PRIVATE
SECTOR
COMPANIES
AND THE
PUBLIC
SECTOR, ARE
SETTING
UP SMART
CITIES.**

its people: First, the government is a supporter rather than being a traditional problem solver; second is the delivery of specialised services; third is distributed governance; fourth is being a smart data government; fifth is finding alternative forms of government funding; sixth is having a timely mannered civil service; and finally; the seventh trend is identifying new foundations for achieving national prosperity and gross domestic product.

Companies like Panasonic in Japan, in tandem with other private sector companies and the government, are setting up Smart Cities. Japan officially opened in November 2014 in Fujisawa Sustainable Smart Town (SST), touted as one of the world's most cutting-edge examples. Conceived around a vision that seeks to cater for the evolving needs of the town and its residents over the next 100 years, Fujisawa features amenities and systems that react to both automated and human feedback to realise a city that is the perfect union of man and machine.

Following the successful completion of Fujisawa, Panasonic has announced plans for a second "smart" city, Tsunashima SST, in Yokohama.

Takeshi Arakawa, Manager, Fujisawa SST Management Team, Panasonic Corporation, says, "We envision a future in which people can enjoy smart and eco-friendly lifestyles underpinned by optimal and stable use of renewable energy sources. The Sustainable Smart Towns of Fujisawa and Tsunashima are a blueprint for

that future, with the aim of achieving maximum energy efficiency through state-of-the-art smart houses designed to promote self-creation and self-consumption of energy."

According to Rabih Dabboussi, Managing Director, Cisco UAE, "In order to realise the full potential of a Smart and Connected Community, a strong public-private partnership approach is necessary, beyond the silos of existing city infrastructure providers. Asset-bundling and new partnership models will enable the creation of a connected public infrastructure that delivers value to both city administrators and citizens, enhancing the livability of a city."

Dabboussi says efficient IoE infrastructures for cities require two elements:

- Smart, innovative solutions that break away from traditional, energy-intensive, waste-generating approaches
- Solutions that eliminate silos of information within a city, allowing for more efficient and open sharing and utilisation of information and resources.

Cities investing in the long-term efficiency of their infrastructure aim to make their infrastructure intelligent, with shared operations. These cities not only see their energy usage and carbon footprint diminish — they also enhance their livability as safe, vibrant cities, thus attracting both citizens and tourists. ‡



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