

FLASHES

DEC 2014

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

DIFFERENT THOUGHT PROCESSES

GNR approaches

OPENING THE EYES OF THE WORLD

Remembering
Ibn al-Haytham,
creator of
the camera

UAE: 43 YEARS OF SUCCESS

We salute
the building of
a Nation



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FOREWORD

December is a landmark month, not only for us at the Mohammed Bin Rashid Foundation – MERB – but also for those who are involved in the pursuit of knowledge. This month, we are hosting the Knowledge Conference – a first of its kind for the entire region. The Conference will be a powerful Arab platform for those who shoulder the responsibility of knowledge transfer and localisation. Here they will be able to exchange views, share their experiences and most importantly, learn best practices for the dissemination of knowledge.

Perhaps the most important aspects of the Conference are the introduction of the Sheikh Mohammed Bin Rashid Al Maktoum Award for Knowledge and the *Arab Knowledge Index*. The MBRF will use these two powerful tools to inspire individuals and organisations to proactively take up the task of knowledge distribution, measure the effectiveness of their initiatives and finally reward their efforts.

The other highlight is the release of the *2014 Arab Knowledge Report*.

This specially commissioned research highlights some of the most pressing challenges facing the Arab world in the creation of knowledge-based societies. This year's report focuses on the role of the most important members of our society, the Arab youth. Thought leaders, decision makers and influential experts from across the region will come together to discuss these challenges and provide innovative solutions that will pave the way for a future of sustained opportunities and growth.

MBRF is committed to the dissemination of knowledge and is an avid supporter of development efforts in the world. Our aim is to build a society and economy that applies knowledge to create sustainable development and prosperity for all people. And we are confident that the Knowledge Conference will be an important step towards the promotion of knowledge-based societies in the Arab world.

HE Jamal Bin Huwaireb

MD of the Mohammed Bin Rashid Al Maktoum Foundation

FOUNDATION UPDATES AND INITIATIVES





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



THE KNOWLEDGE CONFERENCE

This month sees the launch of the annual MBRF Knowledge Conference. A first for the region, the event is a crucial step towards creating a knowledge-based, sustainable future.

This month the Mohammed Bin Rashid Al Maktoum Foundation (MBRF) opens an important chapter in Dubai's efforts to create an economy and society that applies knowledge for sustainable development and prosperity.

The Foundation is hosting the First Knowledge Conference (FKC) bringing together influential thought leaders, knowledge mavens, experts and stakeholders to discuss ways to consolidate a culture of building a knowledge-based sustainable future.

Envisaged as an important international gathering in the sphere of knowledge dissemination. The Knowledge Conference will also play a pivotal role in cementing Dubai's reputation as a regional and even global leader in this field.

The three-day event from December 7 to 9 is being held under the patronage of HH Sheikh Mohammed Bin Rashid Al Maktoum, UAE Vice President and Prime Minister and Ruler of Dubai, and the direction of HH Sheikh Ahmed Bin Mohammed Bin Rashid Al Maktoum, Chairman of MBRF.

"Today knowledge has become the backbone of economic development and the main pillar of sustainable social progress and a cornerstone of prosperity for the people. This has necessitated an urgent need for an annual event that unites the efforts of knowledge transfer to ensure a brighter future for the coming generations," says Sheikh Ahmed.

"The coming together of knowledge influencers, experts and stakeholders

under one roof at an international annual gathering will give a new momentum to the knowledge movement in the region.

"The exchange of experiences and the introduction of best practices as well as recommendations and innovative solutions will serve as a road map to the development of scientific and technological research."

NEED OF THE DAY

As an entity that is focused on enhancing the role of knowledge in the development and prosperity of the Arab societies, MBRF realised the urgent need for an annual international gathering to highlight the knowledge status in the Arab world.

"It has become a priority to explore ways to spread knowledge, put forward innovative solutions and find the best ways to employ the knowledge of sustainable human development in Arab societies," says HE Jamal Bin Huwairib, Managing Director of MBRF.

"Today, knowledge is critical to renaissance and growth as it draws the lines between wealth and poverty, ability and disability, and achievements and failures. A state that is able to produce and spread knowledge has the potential to elevate its development, assist its nationals to grow and prosper and occupy the position that it deserves in the contemporary world."

Dr Ghaith Hamdi Fariz, Director and Coordinator of the Arab Knowledge Report in the United Nations

“...knowledge is critical to renaissance and growth as it draws the lines between wealth and poverty, ability and disability, and achievements and failures.”

Development Programme (UNDP), commended the country's efforts in building a knowledge society and stressed that the aims of the Knowledge Conference are in line with UNDP's international efforts to develop components of knowledge transfer and entrench its access at local, regional and international levels.

HIGHLIGHTS OF THE KNOWLEDGE CONFERENCE

Under the theme 'Empowering Future Generations', the first KC includes a power-packed programme of discussions and debates spanning the entire spectrum of knowledge creation, sustenance and innovation.

Highlights include the launch of the Sheikh Mohammed Bin Rashid Al Maktoum Award for Knowledge, The *Arab Knowledge Report 2014* and the *Arab Knowledge Index*. With these activities, KC will become the most important knowledge-related annual event in the region.

Sheikh Mohammed Bin Rashid Al Maktoum Award For Knowledge

Through this prestigious award the MBRF will honour a global figure for their contribution in the spread of knowledge. The award aims to create awareness as well as encourage individuals and organisations to establish initiatives and programmes that contribute to the distribution and transfer of knowledge.

Arab Knowledge Report 2014: Youth and Localisation of Knowledge

One of the Arab world's most important initiatives dedicated to the spread of knowledge, the *Arab Knowledge Report* (AKR) is a joint initiative between the MBRF and the UNDP's Arab Bureau. The report articulates a shared vision of the two organisations to shape and strengthen a knowledge economy in the region. It is expected that the 2014 AKR will gain further traction due to its launch as part of the first KC. It addresses youth and knowledge issues from two perspectives: the wider Arab region perspective and a specific UAE perspective.

The third edition of the report recognises the Arab youth as key players in the localisation of knowledge transfer processes. It seeks to address important concerns such as the status of the youth in the region, their understanding of knowledge transfer processes, the challenges they face and the elements required to involve them actively in the process of knowledge transfer. The report also aims to form effective strategies for activating the participation of youth in using knowledge for sustainable development.

"The *Arab Knowledge Report* confirms the MBRF's and the Arab Bureau's perseverance to provide sustained support to knowledge-based development of communities," says Dr Fariz.

"We see the report as another step by Dubai in its human development

The First
Knowledge
Conference

Empowering future generations

7-9 December 2014, Grand Hyatt, Dubai



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

مؤتمر
المعرفة
الأول
تمكين أجيال الغد
٧-٩ ديسمبر ٢٠١٤، فندق جراند حياة - دبي

جائزة الشيخ محمد بن راشد آل مكتوم للمعرفة - ٢٠١٤
Sheikh Mohammed Bin Rashid Al Maktoum Knowledge Award - 2014

جائزة الشيخ محمد بن راشد آل مكتوم للمعرفة - ٢٠١٤
Sheikh Mohammed Bin Rashid Al Maktoum Knowledge Award - 2014

Sharing Knowledge: the programme includes a power-packed programme of discussion and debate.


efforts and the building of knowledge based economy and society in the Arab region and the world as a whole.”

Arab Knowledge Index

What is the status of knowledge in the Arab world? How much progress has been made? How effective are a country's colleges, universities and research centres?

The annual *Arab Knowledge Index* seeks to answer these questions. The index will monitor the status of knowledge in the Arab world taking into consideration the specific situation of the region. It will include a number of sub-indices in the economic, social and knowledge levels that chart the progress towards knowledge-based societies and economies.

The sub-indices span an array of factors such as the number and effectiveness of colleges and universities, scientific research centers; government budgets allocated for the development of scientific research; the number of patents registered annually; the extent of private sector involvement in supporting and funding scientific research centers; the evolution of the telecommunications infrastructure as a major tool of distribution of knowledge; the number of books and translations issued annually; paper or electronic documentation efforts and content development efforts. Special classifications will be granted for the evolution of knowledge in every Arab country.

Through these markers the Index will provide a practical tool with which to measure knowledge in the Arab world and will provide accurate and practical information to decision-makers, experts and researchers to offer guidance in the formulation of development plans and policies. 

CONFERENCE AGENDA

The transfer and localisation of knowledge in the Arab world will be the focal point of discussion as renowned and influential experts from around the world gather for some highly engaging sessions during the first Knowledge Conference from December 7 to 9 at the Grand Hyatt Hotel in Dubai.

Day 1

The starting session will focus on the aspects of knowledge economy and knowledge societies. Through free and open discussions participants will debate whether or not the economic structure of the Arab world is conducive to the development of such societies.

Session two looks at knowledge through the lens of innovation and integration. It will explore the role of innovation in creating a knowledge system and see how knowledge networks can be used to enhance research and education as well the welfare of the community.

In the third session, participants will discuss how local knowledge pools can be created in the Arab region. Taking a futuristic look, the session will shed light on the financing needed in the creation of knowledge. It will also showcase UAE's success in producing and localising knowledge.

Day 2

On 8 December, the Knowledge Conference will examine the *Arab Knowledge Report 2014*. Separate sessions focused on the Arab world and the UAE will explore how young people can be involved in transmitting and localising knowledge. Experts will discuss the priorities of the youth and the impact such priorities have on the efforts to transmit and localise knowledge.

The sessions will examine the effectiveness of educational systems in achieving the



goals of a knowledge-based economy. They will also look at the role of knowledge transmission and localisation in combating unemployment in the region. Will knowledge-based societies create employment or lead to more unemployment? Do governments and society have shared responsibility in the preparation of the youth? Do Arab youth think of a larger global picture while creating local solutions – lively discussions and debates will be encouraged among participants to answer these questions and more.

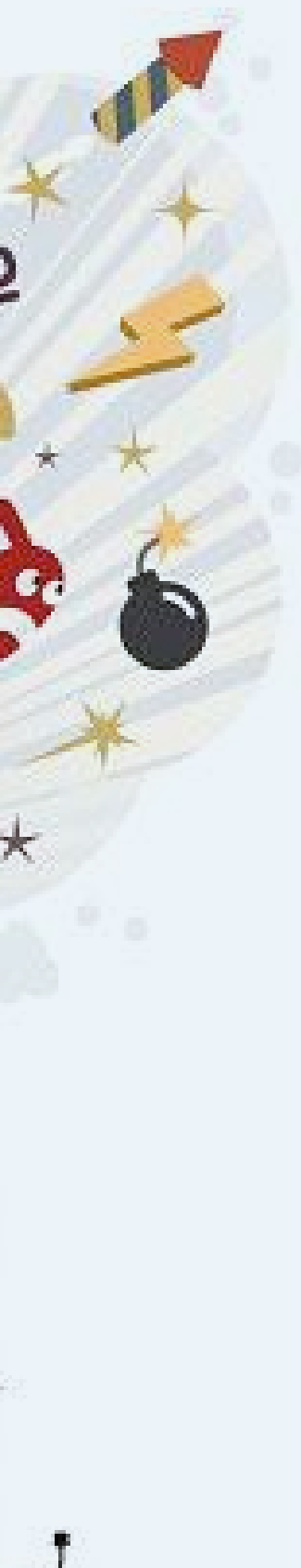
Panelists will also discuss a variety of topics such as the role of the internet in the transfer and localisation of knowledge; benefits of teaching foreign

languages to the Arab youth; the role of interactive knowledge and culture; opportunities, rights and duties in citizenship and national pride.

Day 3

The conference concludes with an evaluation of the *Arab Knowledge Index* looking at its most important features and mechanisms. It will examine the status of Arab knowledge in the light of the Arab Spring, analysing how the recent events in the region have affected the values of the society, and in what ways the Arab governments that were unaffected by the Arab Spring could assist governments that were affected.

Opportunities: Dr Gaith Hamdi Fariz (left), HE Jamal Bin Huwareb



ALL SYSTEMS ON GO

From innovation to internet technology, Dubai is racing ahead in every sector.

FOCUS ON INNOVATION

As The UAE is aiming to become one of the world's most innovative countries within seven years as part of the National Innovation Strategy launched by HH Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai.

The strategy focuses on seven sectors: renewable energy; transport; education; health; technology; water and space.

Phase one covers 30 national initiatives slated for delivery within the next three years including; new legislation; innovation incubators; investment in specialised skills; private-sector incentives; international research partnerships and an innovation drive within government.

The Strategy also comprises 16 indicators by which to measure progress.

Government-sector indicators include the percentage of innovative ideas and the proportion of budget allocated to innovation.

Private-sector indicators include R&D investment and the knowledge profile of the workforce.

Global indicators meanwhile encompass an overall measure comparing countries' innovation capabilities, as well as indicators for the protection of intellectual property, the creation of patents and the availability of scientists and engineers.

"The UAE is already the most innovative Arab nation. Our target is to be among the most innovative nations in

the world. The competitiveness race demands a constant flow of new ideas, as well as innovative leadership using different methods and tools to direct the change," said HH Sheikh Mohammed Bin Rashid Al Maktoum at the launch of the campaign.

"This innovation strategy is a national priority for our programme of development and progress. It is a primary tool to achieve Vision 2021 and an engine for the growth of distinctive skills and capabilities across the nation. We have always called for creativity in every field: this strategy is a concrete step to implement that vision. These initiatives will enhance quality of life in the UAE and take our economy to new horizons."

The strategy works along four parallel tracks.

The first track will anchor a stimulating environment for innovation in the form of supportive institutions and laws.

The second will develop government innovation by institutionalising innovative practices with the support of an integrated system of modern tools. The strategy requires all government entities to reduce spending by one per cent and to dedicate the savings to research and innovation projects.

Encouraging private sector innovation by stimulating companies to establish innovation and scientific research centres, to adopt new technologies, and to develop innovative products and services forms the third track.

The fourth track will qualify individuals with highly innovative skills

by concentrating on science, technology, engineering and mathematics, including the creation of educational material for schools and universities.

All in all the four tracks aim to establish a national culture that encourages innovation and entrepreneurship through partnerships among the public, private and media sectors.

Sheikh Mohammed added: "Innovation today is driven by effective institutions, strong policies, specialised skills, and an economy where all sectors work together to discover new ways to conduct business. A flexible and creative economy based on a national culture of innovation is the fastest and most sustainable way to reinforce the UAE's competitiveness on a global level."

The current annual investment in innovation is worth Dhs14 billion (\$3.8billion) in the UAE, of which Dhs7 billion (\$1.9billion) goes to research and development. However, it is anticipated that spending will rise significantly in the years to come.

DUBAI INTERNET CITY REVEALS DETAILS OF DHS4.5 BILLION INVESTMENT

The 15th anniversary of Dubai Internet City was cause for a double celebration this year

with HH Sheikh Mohammed Bin Rashid Al Maktoum, UAE Vice President and Prime Minister, and Ruler of Dubai, announcing a Dhs4.5 billion (\$1.2billion) innovation investment for the technology hub.

As part of his vision, Sheikh Mohammad is encouraging young pioneers to commit themselves to innovative projects, adding value to the national economy and boosting the number of patents registered for the UAE.

The plan aims to boost the number of companies in the content, knowledge, technology, education, development and research sectors to 10,000 and to grow the number of people employed in these areas to 100,000.

Dubai-based freezone operator Tecom Investments has now revealed further details for the investment.

The company, which operates clusters such as Dubai Media City, Dubai Internet City and Knowledge Village, said that the investment will be used to create innovation complexes, creative spaces, technology laboratories and smart buildings.

During the next decade, these initiatives are expected to increase the workforce in its business communities from 70,000 to 100,000; grow its business partner base from 4,500 to 10,000; and



Dubai Internet City to have a Dhs4.5 billion investment

provide an additional 10 million sq ft of commercial office space.

One of the initiatives includes a new Innovation Hub in Dubai Internet City, which will focus on sectors such as technology, new media, smart education and sciences.

The first phase of the 1.6 million sq ft business development will be delivered in Q1 2017. Expected to house a workforce of around 15,000, it will offer companies of all sizes – including start-ups, SMEs and multinationals – infrastructure facilities and other services.

Another new project is a Creative Community in the upcoming Dubai Design District (d3). Spread across one million sqft, it will be an incubator for emerging local designers and artists along with art galleries and studios looking to engage directly with the region. Phase one is expected to be delivered in 2016.

“Tecom Investments is a committed partner in the government’s efforts to transform Dubai into an innovation-driven economy. We see our role as enabling businesses and creative people to operate efficiently and effectively, but we are also seeking to actively engage, foster, and nurture talent and creative industries in order for them to have a positive impact on the UAE economy,” said Dr Amina Al Rustamani, group CEO of Tecom Investments.

DUBAI CARES ABOUT GAZA

Dubai Cares, the philanthropic organisation launched by HH Sheikh Mohammed Bin Rashid Al Maktoum, has announced the “Rebuild Palestine. Start with Education” initiative.

The Dh11 million (\$3million) programme will help alleviate the devastating effects of the military conflict on the education sector in Gaza by providing infrastructure and psycho-social support services to children.

A significant part of the programme will support access to education and help mitigate the psycho-social effects of armed conflict on the student population in Palestine.

Emphasising the urgency in helping the struggling educational infrastructure in Gaza, Tariq Al Gurg, CEO, Dubai Cares said: “We need to wake up to the situation in Gaza and prepare for the long-term impact of the current uncertain and volatile situation on its children. Palestine’s youngest citizens have suffered severe physical and psychological trauma over the course of the military conflict and the large-scale destruction of the educational infrastructure is going to further impair their futures. The time has come for the international community to mobilize resources, and ensure that schools have the



Dubai Cares volunteers preparing aid boxes for Gaza



capacity and the right capabilities to offer them quality education,” he added.

“Through this programme we aim to ensure that the children in Gaza have access to quality education. This means building up sound infrastructure and developing the relevant curricula as well as investing in teachers so that they can assist students dealing with trauma to develop coping mechanisms, thus successfully settling them back into their educational routines.”

The Dubai Cares programme, in partnership with the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), will work towards countering the effects of the conflict and strengthening the educational sector in Gaza.

As part of the programme, 175,809 children enrolled in 151 UNRWA schools will receive weekly arts and sports classes led by specialized teachers.

These will be structured around psycho-social counseling utilising arts and sports, and will also include teacher specifically for these classes.

In addition, 1,620 students in UNRWA schools will receive psycho-social support to develop their coping mechanisms and ease their distress. Individual support plans will be developed between the child and a counsellor to identify specific issues and vulnerabilities and then formulate a response and allocate resources.

The programme will also provide 1,500 students access to primary and lower secondary education through the construction of a 20-classroom school which includes furniture and water and sanitation facilities.

“Palestine already had significant systemic issues affecting the quality of education. The additional limits on finances, the growing student population, and the ongoing political instability, has led to the educational process in the country to take a serious pounding. However, Palestinian children need the security of education in order to grow their skill set and rise above the challenges they face today. As a global philanthropic organization, we are endeavoring to keep education on the agenda as Palestine recovers from the conflict,” concluded Al Gurg.

During the past seven years, Dubai Cares, with the support of the UAE community, has been facilitating change and development by providing children access to quality primary education in developing countries around the globe. Dubai Cares is now reaching more than 10 million children in 35 developing countries.

To date the organisation has: built and renovated more than 1,500 classrooms; provide 1,300 wells and potable water sources and constructed 3,400 latrines in schools; provided nutritious food every day to 504,000 children in schools; trained 38,000 teachers, kept more than 2.7 million children free from intestinal worms through its school-based de-worming activities; distributed 2.1 million books written in local languages and established 6,750 Parent-Teacher Associations.

SHEIKH MOHAMMED ATTENDS BOAO FORUM

HH Sheikh Mohammed Bin Rashid Al Maktoum, UAE Vice President and Prime Minister and the Ruler of Dubai, joined more than 350 high-ranking government officials, global finance leaders, policy makers and academics recently to attend the Boao Forum for Asia (BFA) Financial

Cooperation Conference. BFA is recognized as the most prestigious forum in the region and provides an open platform for discussing key financial issues confronting Asian countries and laying the groundwork for closer collaboration in the future.

HH Sheikh Mohammed bin Rashid was accompanied by Deputy Ruler of Dubai Sheikh Maktoum bin Mohammed bin Rashid Al Maktoum, Minister of International Cooperation and Development (MICAD) Sheikha Lubna bint Khalid Al Qasimi, and Director-General of Dubai's Protocol Department Khalifa Saeed Sulaiman. The former Vice Premier of the State Council of China, Zeng Peiyan, was also present at the conference which was held in Dubai.

Trade between the UAE and China reached Dh\$172.6billion (\$47billion) in 2013, with China now ranking as Dubai's second largest trading partner.

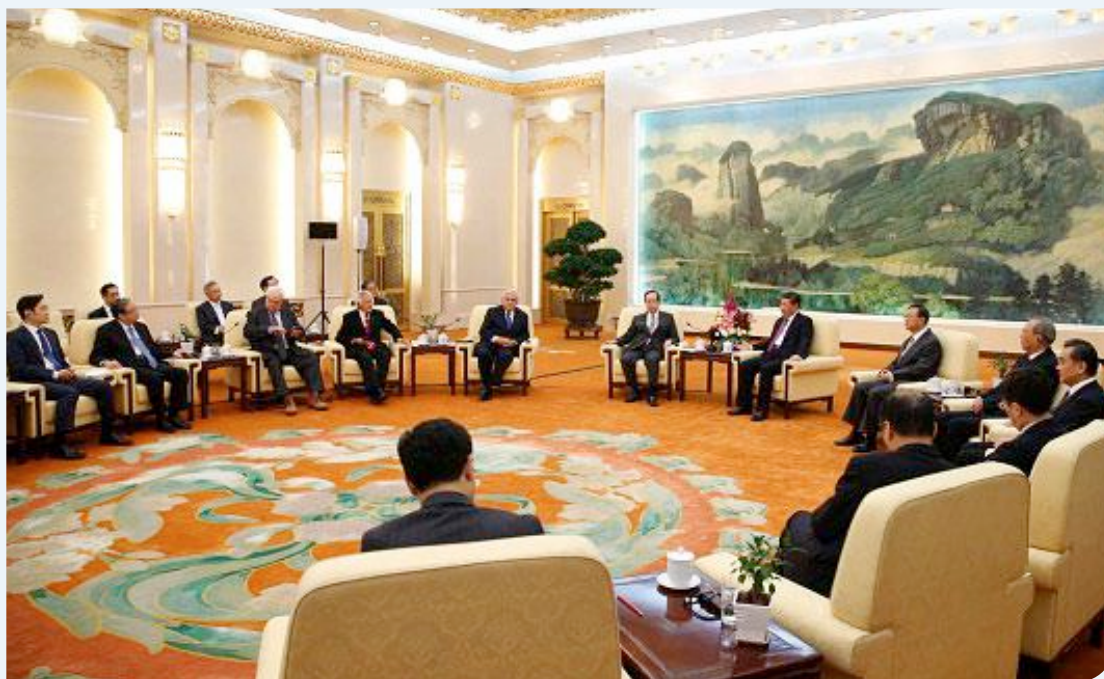
More than 4200 Chinese companies operate in the UAE in various sectors. There are over 200,000 Chinese nationals who live and work in Dubai accounting for 10 per cent of total number of residents in the emirate.

Secretary-General for the BFA, Zhou Wenzhong, said that the decision to stage the event in Dubai, strategically located at the crossroads between East and West, is testament to the city's growing importance as a conduit for finance, trade and exchange between East and West Asia.

It is also a testament to the role Dubai can play in financing infrastructure and energy investments that will help further integrate Asia into the world of economy. [f](#)



The Boao Forum for Asia Financial Cooperation Conference in progress







DEEPER *understanding*

Some may know of groundbreaking Educational Psychologists such as Maria Montessori, or David Weschler but, for most of us, their work has little bearing on our daily lives. Yet, for a significant group of children and young people their work is vital. *Flashes* talks to Dr Madeleine Portwood, Consultant Psychologist at Ebdaah.

› What is the role of an education psychologist?

The idea that a psychologist only works in education is perhaps misleading. The psychologist is the voice of the child who has any sort of difficulty. It is the responsibility of the psychologist to identify issues through assessment and communicate well with teachers, parents and other professionals to see how we can support the child and make a difference to their outcomes.

Why would a school make use of your services?

There are different levels at which we can support what's happening in schools; when the school is aware that the child has difficulties they can make changes to help. In order to support the school and parents we need to do good quality clinical assessments leading to advice that makes a difference to the child.

What could parents expect when their child sees an educational psychologist?

By the time that a parent decides to see an educational psychologist they will have concerns about a whole range of issues. It may be the child's learning or their emotional wellbeing. The role of the psychologist is first of all to listen to the parents' concerns and on that basis examine the child, then work specifically with the parents to improve the child's outcomes. A parent is the person with the greatest responsibility for the child since the child is in school for only 13 per cent of the time.

The first part of the assessment is getting to know the child. Then we undertake very specific assessments to see whether for example they have difficulties just with learning, with processing, with language, and so on. By finding the key

to the problem, we can be much more successful in determining how that child can best be helped. We would then provide programmes to support in those areas that have been identified.

What is your view of the UAE's provision for children with Additional Learning Needs?

In the region it is a challenge to find a professional who is able to assess children across the full age range, particularly for parents of children under the age of five. Having been here for some time, I'm aware that there is a need to underpin early identification of a child's needs. This is crucial if we are to change outcomes for the child. Starting early with a three years old can make a significant difference so that on entry to full-time education their progress is in the expected range.

Schools and parents are very keen to identify someone that will do high quality assessments, but the assessment is only the starting point. The clinical assessment provides the pointers and the keys about where to go next. A psychologist should also recommend particular programmes to support the child's development so that schools and parents know what to do.

Parents in the region are eager to gain access to local services for assessments. But it's not just for learning difficulties, or for social and communication difficulties, it's for youngsters who require immediate referral to paediatric neurological services. Parents and schools may not understand what's going on because they're not trained to pick up the signs, but increasingly schools in the area are gaining greater expertise.

A few years ago I was invited to give the keynote presentation to vice chancellors of universities in the UAE seeking to expand access to students with disabilities. I was very impressed by the tone of the conference. In his introduction the minister stated that the way we provide for young people and adults with disabilities is the

“There is tremendous goodwill on the part of these schools to work with increasingly complex presentations and it is essential that the staff in the schools have tools not just to identify but also to support these children.”

measure of our humanity as a nation. At one level we can work with children and young people, and support the families but we also need to work at a more systemic level by providing training to schools, nurseries, colleges and other professionals to help them understand how to meet the needs of those with additional learning needs and other disabilities so that Dubai becomes a center of expertise for the region.

Which trends if any are you detecting across the region?

Working with schools and with parents, enables me to see changes in the population internationally and especially here in the Middle East. There are increasing concerns about the number of children arriving in educational provision who have problems with language, social and communication skills. We are seeing an increase in autism presentation from one in 1500 cited about 20 years ago, to one in just over 60 now and it is an international phenomenon. I'm looking at the research to try and shed some light as to why that might be the case, because it's happened so quickly I believe a lot of it is environmental. Therefore if we can identify the children early, we can intervene early to make a difference.

What has been the impact of your research?

Professionals or parents need assurances that recommendations are evidenced – based and will make a difference. As a result I have written evidence-based books and guidance for both parents and professionals. My first book was on dyslexia, then I was invited by the British Dyslexia Association to write a book on my research into dyspraxia and I produced a screening tool that is used internationally to identify the condition. My most recent work was in early years. I wanted to create a pack of child development activities that gave parents everything they needed, including a DVD to see how to implement the ideas. That's particularly important when working in areas of multi-lingualism. Currently I'm doing a lot of work on the impact of diet in the behaviours associated with Autism Spectrum Disorder, ASD,

We are looking at genes, analysing blood and urine samples. Without doubt there is a genetic predisposition to ASD but if we can find out what's triggering it, then we can have very effective intervention programmes.



Voice of the child:
Dr Madeleine Porter

Is it a challenge for schools to meet the needs of the increasing numbers of children with additional needs?

I am delighted that there is a commitment in Dubai to engage in completely inclusive practice in the schools. There is tremendous goodwill on the part of these schools to work with increasingly complex presentations and it is essential that the staff in the schools have tools not just to identify but also to support these children. Training programmes for teachers and support staff are therefore vital.

The role of the psychologist is multi-layered. We look at the small detail through individual psychological assessments. However that doesn't mean that more children don't have needs. So many children don't present with sufficiently challenging behaviours or learning difficulties to warrant individual assessment. We can help schools with screening programmes to understand their intake of pupils, letting them identify the youngsters who need to be targeted through the school curriculum or for services delivered through specialists. †

Ebdaah is a multi-disciplinary consultancy providing specialist support to governments, key stakeholders, organisations and corporates to drive opportunities for people with disabilities across the Gulf. www.ebdaah.com



DID YOU KNOW...

After the first 24-hours of continuous frenetic swimming, newborn sea turtles become increasingly active in the day time only? Researchers link this behaviour to a survival strategy as many oceanic predators are most active during twilight and nocturnal periods. This innate swimming is thought to be inherited from the mother and further develops based on local ocean conditions.

Survival tactics

New nano tags help protect baby turtles during their first crucial hours of life

In their first few hours of life baby sea turtles have to battle hungry predators and dangerous waters before they reach the safe haven of ocean currents. After they emerge from their nests, the hatchlings crawl towards the ocean and then drift thousands of kilometers out to sea on the currents. Although they return to breed, very little is known about the time between their swim out to sea and eventual return. Scientists call this period “the lost years.”

Thanks to the use of nano technology, however, the lost years may become a thing of the past. While scientists have always had a vague idea of how these vulnerable babies navigate the open water, for the first time a team using special nano-tags is



tracking the hatchlings as they swim. Researchers then are finally able to follow the newborn on their very first day at sea during what's called the initial “swimming frenzy.” This hyper-active offshore swimming lasts for several days as the hatchlings try to

survive predator-rich coastal waters before they reach the ocean currents that will ultimately transport them to their feeding grounds.

Dr Rebecca Scott, a researcher at the Geomar Helmholtz Center for Ocean Research in Kiel, Germany,



and her colleagues attached tiny acoustic transmitters to 11 newborn loggerhead turtles from of Boa Vista in Cape Verde. The transmitters, developed by a Novia Scotia-based company Vemco, are just 12mm long, five mm wide, and weigh half a gram.

The team then followed the baby turtles by boat for up to eight hours, listening for the 'pings' sent by the transmitters.

"We've always known they've been swept away by ocean currents, but this is the first time

we've been in the sea with them," said Dr Scott.

The scientists used their boat to scare away predators and, thanks to their intensive tracking, ten of the hatchlings survived, far more than would have been possible without the scientists' intervention.

During their first eight hours of life, some of the hatchlings travelled distances of up to 15 kilometers to reach the open sea. Their average travel speeds more than doubled from the initial 19 to 28 meters a minute reaching up to 40 to 60 meters a minute when they joined the surface current flows.

Dr Scott believes that the tags could lead to a better understanding of how the young turtles behave after they hatch. It is important to note that out of seven sea turtle species, six are endangered or threatened. The new research will help scientists understand how the young behave and migrate after hatching, allowing conservationists to better manage and protect sea turtle populations.

According to the National Oceanic And Atmospheric Administration (NOAA), sea turtles are found in all warm and temperate waters throughout the world. They migrate hundreds of miles between nesting and feeding grounds. But destruction of these habitats, vessel strikes and incidental capture by fishermen has led to their decline. As one of earth's most ancient creatures, sea turtles have existed for around for 110 million years. Protecting them is vital. Since much of their life is spent in the water, little is known about their behaviour but this new research may help to uncover the mystery of their movements, especially during their first journey. ♪



Dr Rebecca Scott, a researcher at the Geomar Helmholtz Center for Ocean Research in Kiel, Germany

DUBAI TO THE RESCUE

Dubai is making a significant contribution towards the rehabilitation and protection of sea turtles. The Dubai Turtle Rehabilitation Project (DTRP) based at Burj Al Arab and Madinat Jumeirah is run in collaboration with Dubai's Wildlife Protection Office (DWPO). The Dubai Falcon Clinic and the Central Veterinary Research Laboratory provide the DTRP with essential veterinary support.

Running since 2004 the project has so far released more than 560 rescued sea turtles back into Dubai's waters. In 2011 alone more than

350 sick or injured sea turtles were treated by the DTRP after being washed up on the region's beaches. The DTRP is currently the only project of its kind in the Middle East and Red Sea region.

Visitors can see the DTRP's turtles at two outdoor enclosures at the Mina A'Salam hotel, near the Al Muna and Tortuga restaurants. Both enclosures are open every day of the week and visits are free of charge. Scheduled feedings at Al Muna are at 11am on Wednesdays and 1pm on Fridays. Everyone is welcome to participate.





Sunny Outlook

Exposure to sunshine may help fight against weight gain and diabetes says new research

There is good news for people living in the UAE: the year round sunshine is not just great for tans and a day at the beach but may also help in the quest for a cure for diabetes and obesity.

New research by the University of Edinburgh suggests that exposure to moderate amounts of sunshine may slow the development of both diseases. Until now the only evidence for this was detected in mice but scientists say that basking in the sun could have a similar effect on humans, pending future research.

UV Light and Skin Exposure

The researchers demonstrated that shining UV (ultra violet) light at overfed mice slowed their

weight gain. The mice also displayed fewer of the warning signs linked to diabetes, such as abnormal glucose levels and resistance to insulin.

The beneficial effects of UV treatment were linked to a compound called nitric oxide, which is released by the skin after exposure to sunlight. Applying a cream containing nitric oxide to the skin of the overfed mice had the same effect of curbing weight gain as exposure to UV light, the team found. According to the same study, Vitamin D – which is produced by the body in response to sunlight and often lauded for its health benefits – did not play a role in this process.

“These observations further indicate that the amounts of nitric oxide released from the

Source: University of Edinburgh

“We know from epidemiology studies that sun-seekers live longer than those who spend their lives in the shade.”

skin may have beneficial effects not only on heart and blood vessels but also on the way our body regulates metabolism,” researcher Dr Martin Feelisch said.

“Our findings are important as they suggest that casual skin exposure to sunlight, together with plenty of exercise and a healthy diet, may help prevent the development of obesity in children,” added lead report author Dr Shelley Gorman.

Growing Evidence

However, researchers advise that it is important to note humans absorb sunshine very differently from mice. Mice are nocturnal animals covered in fur and not usually exposed to sunlight. But although the results should be interpreted cautiously, they do add to the growing body of evidence that moderate exposure to the sun’s rays is beneficial to health.

Previous studies in humans have shown that nitric oxide can lower blood pressure after exposure to UV lamps.

“We know from epidemiology studies that sun-seekers live longer than those who spend their lives in the shade. Studies such as this one are helping us to understand how the sun can be good for us. We need to remember that skin cancer is not the only disease that can kill us and should perhaps balance our advice on sun exposure,” said Dr Richard Weller, Senior Lecturer in Dermatology, University of Edinburgh. [f](#)



Bio-Drones that leave no trace

Made from fungus, the world's first biodegradable drone simply melts away when it crashes.

Source: www.newscientist.com

Drones have proved invaluable for those wanting to explore remote locations, right from storm-chasers to the military. But in case of a crash in a far flung area, drones can not only blot the environment but also leave behind tell-tale clues. Thanks to the invention of a biodegradable drone, both situations can now potentially be avoided. Imagine a drone that not only boasts a light and sturdy frame for cameras and other equipment, but also one that can disappear within a matter of hours should it happen to crash. This could be a boon both for military officials and conservationists who do not want to leave their mark on the environment.

Fungal Body

A team of students from Stanford and Brown University, and advised by NASA, has created a working prototype for a biodegradable drone made from fungal material. The bio-drone was its entry in the 2014 International Genetically Engineered Machine (iGEM) competition.

The body of the prototype was made of a root-like fungal material called mycelium. It was cultivated in a custom drone shape by Ecovative Design in New York. Ecovative has been using mycelium as a lightweight sustainable alternative for packaging and surfboard cores. The fungal body had a protective covering of sticky cellulose



DRONES FOR GOOD

Earlier this year, the UAE government launched an international competition with a cash prize of \$1 million for inventing UAVs to deliver government services in the country. The competition was open to companies, universities, creative individuals and specialised professionals and received an overwhelming response. More than 300 entries were received of which 16 applicants were selected for the final round of the competition. The semi-finalists were chosen based on certain criteria including innovation, ease of implementation and extent of impact. The winner will be announced in December.

“leather” sheets grown by bacteria in the lab. Additionally, the sheets were coated with proteins cloned from the saliva of paper wasps (wasps use their saliva to waterproof their nests). Circuits were printed in silver nanoparticle ink, in an effort to make the device as biodegradable as possible.

“No one would know if you’d spilled some sugar water or if there’d been an airplane there,” said Lynn Rothschild of NASA’s Ames Research Center in California, who led the team.

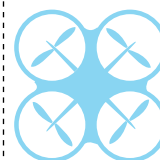
The Way Forward

However, the drone still has some parts that cannot be replaced by biology. For its first short flight at the iGEM competition in Boston, for example, the bio-drone was equipped with propellers and controls borrowed from a regular mechanical quadcopter. It also had a standard battery.

At present only the body may be biodegradable but the team has its sights on recreating a drone with most, if not all, biodegradable parts. As a proof of concept, they have already been successful in building a



fully biodegradable circuit board. The team has also started studying how to create safe-to-degrade sensors using modified bacteria. Its next step would be to build biodegradable motors and propellers. †



Unmanned aerial vehicles (UAVs), also known as drones, are aircraft that are controlled either by ‘pilots’ from the ground or follow a pre-programmed mission. The use of drones has grown quickly in recent years because, unlike manned aircraft, they can stay aloft for many hours (Zephyr a British drone under development has just broken the world record by flying for more than 82 hours nonstop); they are much cheaper than military aircraft and they are flown remotely so there is no danger to the flight crew.

DRONES IN DUBAI

Dubai Government has eagerly embraced drone technology. The use of drones has emerged in an array of state services recently and is one part of a wider push by Dubai towards a Smart City and Smart Government.

In February this year, Dubai revealed a plan at the Government Summit to deliver official documents by drones which means that National ID and passport could be delivered directly to the owners. Dubai Customs is also using drones for surveillance of suspicious activity and to support inspection of trade vessels in Dubai Creek. Dubai Civil Defence recently launched a drone project to monitor fire incidents and assist first responders in covering all the blaze from all angles.





Travelling On-The-Go

Online booking via smartphones and tablets is creating a new generation of impulse travellers in the MENA region, says study.

Travelling-on-impulse is on the rise in the UAE, Egypt and Saudi Arabia thanks to online booking facilities.

Some 54 per cent of individuals in the fourth annual *YouGov Travel Oracle* who made online bookings say that technology has made their travel planning and booking 'a lot' more spontaneous. In 2013, the figure of online bookings was only 37 per cent.

The *YouGov Travel Oracle* is an annual syndicated online study of consumer habits and attitudes towards travel and tourism – which surveyed 22,686 travellers in the MENA region between August and September 2014.

Tablets and Smartphones Lead The Way

Evidence shows tablet and smartphone usage is increasingly prevalent in planning and dreaming travel itineraries.

Throughout 2014, travellers in the UAE and Egypt are using smartphones more often to engage with travel-related content prior to their trip, catching up with travellers in Saudi Arabia who already displayed a significant affinity to smartphones during 2013.

Tablet usage, meanwhile, is up slightly in the UAE and significantly in Egypt with particularly high usage of tablet apps and reading involving

information sources such as online travel guides.

Hotel bookings through travel portals such as Booking.com or Expedia are up year-on-year in all three Middle Eastern "power markets" (44 per cent in 2014 vs. 29 per cent in 2013).

Interestingly, there is a particularly sharp rise in Egypt from only 16 per cent of respondents booking hotels through travel portals in 2013, to a significant 40 per cent in 2014.

Booking hotels via smartphone/tablet apps grew in all three markets since 2013, with a 6 per cent in app happy respondents (from 9 per cent in 2013 to 15 per cent in 2014 overall).



“...travellers are beginning to leave their laptop and feature phones behind in favour of travelling with their tablet...”

Increased usage in smartphone and tablets in Egypt is also prevalent for online travel bookings, with particularly high adoption of bookings via a tablet during the past year.

Technology On The Move

When it comes to flying, insight shows mobile technology is evolving at traveller touch points.

Usage of electronic boarding passes has increased the most since last year, reaching 37 per cent in 2014, an increase of 13 per cent from 2013. Popularity of e-gates (26 per cent) and inflight internet (31 per cent) is also up from 2013, both rising from 21 per cent.

Overall, the *YouGov Travel Oracle* data illustrates a phased adoption of mobile technology in travel, from the UAE to Saudi Arabia to Egypt (in that order). Findings from last year reveal that more travellers are beginning to leave their laptop and feature phones behind in favour of travelling with their tablet and

smartphone in 2014.

The smartphone is increasingly being adopted as a tether to home for travellers on-the-go for the focus markets, connecting them with friends and family and keeping them constantly in touch while on holiday.

To a limited, but growing extent, the smartphone is also an enabler, serving as an on-the-fly planning and booking device at their destination. Generally speaking, the tablet's place is 'on-resort', with respondents increasingly favouring the device as an entertainment centre first and foremost, used most frequently to read books, read travel reviews/guides and play games. [f](#)

ABOUT THE AUTHOR:

Scott Booth is Research Director, YouGov, where he leads the travel, leisure and entertainment research across the MENA region.

THE USE OF TECHNOLOGY IN TRAVEL MENA 2014

2013	VS	2014
21%	Respondents who book all their travel online	31%
64%	Technology has made respondents' travel planning more spontaneous	75%
24%	Respondents who use their mobile phone to access online travel guides	30%

WHY BOOK ONLINE?

41%	Travel can be cheaper if booked online
39%	It is the way I always book my travel
39%	There are more options online
37%	It is more convenient online

WHO CHECKS IN ONLINE?

Highest proportion of respondents who check in online pre demographic:

By Country	By Nationality
QATAR	INDIAN
By Age Group	By Income (per month)
40+	52,666+

TOP ELECTRONIC DEVICES TO TAKE ON HOLIDAY AND THEIR MAIN USES

SMARTPHONE (68%)

Keeping up-to-date with family/friends
Listening to music

LAPTOP (40%)

Buying tickets for local activities
Researching what to do in destination

TABLET (22%)

Reading books and reviews of destinations

Insight from the YouGov Travel Oracle 2014

OPENING THE EYES OF THE WORLD

As the UN declares 2015 as the International Year of Light and Light-based Technologies we honour 10th century inventor Ibn al-Haytham, creator of the camera.



At the 68th session of The United Nations (UN) General Assembly, 2015 was proclaimed as the International Year of Light and Light-based Technologies (IYL 2015).

This global initiative will raise awareness of how optical technologies promote sustainable development and provide solutions to world-wide challenges in energy, education, agriculture, communications and health.

A focal point of the celebration will be the *Kitab al-Manazir*, a seminal work on optics written by 10th century pioneer Ibn al Haytham was written around 1015 making 2015 its 1000th anniversary.

Award-winning educational organisation 1001 Inventions, founding partner of IYL 2015, will also launch its “1001 Inventions and the World of Ibn al-Haytham” campaign as a key part of the initiative.

So why is a scientist who lived hundreds of years ago who remains relatively unknown in the modern world be such a vital part of the optical technology celebration?

The answer is simple: Ibn al-Haytham is regarded by many in the scientific community as the father of modern optics. Often referred to Ptolemaeus Secundus (Ptolemy the Second) in medieval Europe and better known as Alhazen in the West, al-Haytham’s contributions to the principles of optics and the use of scientific experiments fostered significant progress in the fields of astronomy and ophthalmology.

His Beginnings

Born in Basra in 965, Al-Hasan ibn al-Haytham became a prominent scientist and polymath from the 'Golden Age' of Muslim Civilization. He was sometimes known as al-Basri, after his birthplace or sometimes by his latinised name, Alhazen. Much of his life, however, was spent in Cairo from where he wrote his most celebrated work, *Kitab al-Manazir*.

His Work

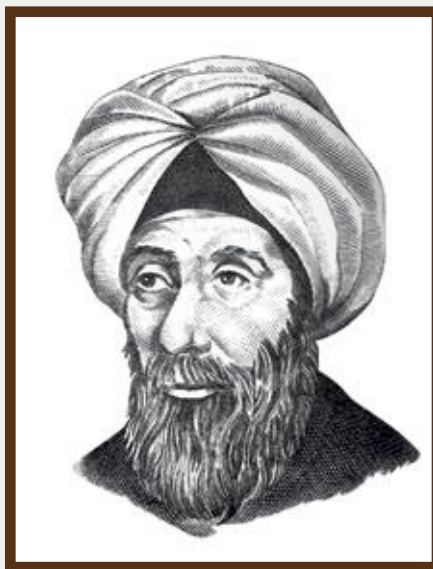
In that massive study of light and vision, al-Haytham submitted every optical hypothesis to a physical test or mathematical proof. He was the first scientist to demonstrate that light travels in a straight line. Al-Haytham carried out various experiments with lenses and mirrors to assess refraction and reflection. These experiments took into account the vertical and horizontal components of reflected and refracted light rays and were crucial to understanding the geometry of optics.

Besides the Book of Optics, al-Haytham produced several other seminal studies on light including *Risala fi l-Daw* (*Treatise on Light*) as a supplement to *Kitab*.

The text contained further investigations on the properties of luminance and its radiant dispersion through various transparent and translucent media. He also carried out further examinations into anatomy of the eye and illusions in visual perception.

Perhaps his most useful observation was to evaluate exactly, the ratio between the angle of incidence (the angle between a ray on a surface and the line perpendicular to the surface) and its refraction, which, he theorised, does not remain constant. It is this theorem that led to the discovery that a lens can have a magnifying power depending on a ray's angle.

In addition to his unique studies of optics, Ibn al-Haytham's legacy is also evident in



Sharper focus:
10th century physicist,
Ibn al Haytham

astronomy: there is the Alhazen Crater on the moon as well as the Alhazen Asteroid.

He had a great influence on 18th century English physicist and mathematician, Isaac Newton, who was aware of Ibn al-Haytham's numerous studies of calculus which led to engineering formulae and methods that have been used ever since.

In fact, Newton's Third Law of Motion ("for every action there is an equal and opposite reaction") was based on Ibn al-Haytham's study on the movement of bodies and the attraction between two bodies, gravity.

Al-Haytham was also the first person to test hypotheses with verifiable experiments, developing the scientific method more than 200 years before European scholars learned of it, through reading his books.

The physicist also wrote insightful commentaries on works by Aristotle, Ptolemy, and the Greek mathematician Euclid. His writings influenced many Western intellectuals such as Roger Bacon (1214-1294), John Pecham (1230-1292), Johannes Kepler

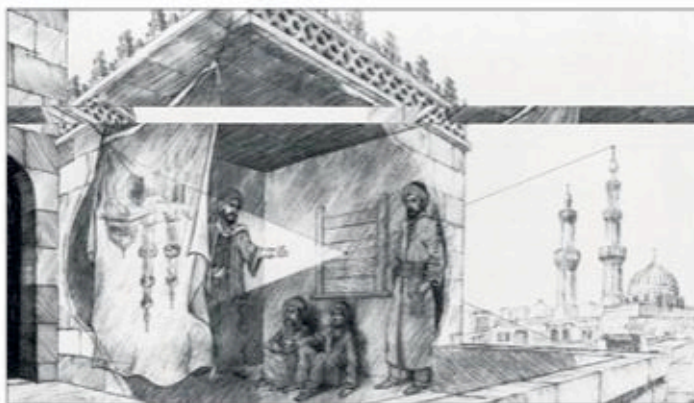
“...he often used the term “*al-Bayt al-Muthim*”,
which translated in Latin as *camera obscura*...”

Alhazen

«Camera Obscura»

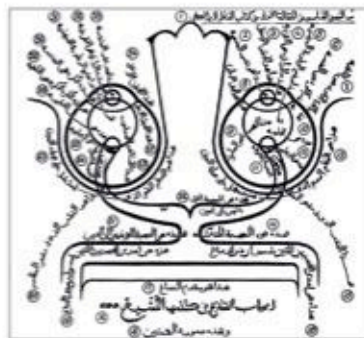


Although Aristotle in Greece and Mozi in China were familiar with a form of the pinhole camera, otherwise known as Camera Obscura, it is the Arab scientist Alhazen who really understood it and is credited with its invention between the years 1015 - 1021.



One of Alhazen's most significant contributions to the image was a seven volume study on optics titled *Kitab Al-Manazir* (later translated to Latin as *Opticae Thesaurus Alhazeni - Alhazen's Book of Optics*).

A little known fact is that the word "camera" is derived from what Alhazen called in Arabic "Al Qumra".





(1571-1630). His pioneering work on number theory, analytic geometry, and the link between algebra and geometry, also influenced the French philosopher, René Descartes (1596-1650).

The Camera Obscura

Like many eminent philosophers and mathematicians, Ibn al-Haytham was a keen observer. While in a room one day he noticed light coming through a small hole made in the window shutters, which led him to study the phenomenon in greater detail. From his experiments, he explained that light travelled in a straight line and that when rays were reflected off a bright subject they passed through the small hole and did not scatter but crossed and reformed as an upside-down image on a flat white surface parallel to the hole.

From this he established that the smaller the hole, the clearer the picture.

His experimental conclusions were that when the sunlight reached and penetrated the hole, it made a conic shape at the meeting point with the pinhole, and

later formed another conic shape in reverse to the first one on the opposite wall in the dark room.

In later stages, these discoveries led to Ibn al-Haytham creating the first camera, the camera obscura or pinhole camera. He explained that we see objects upright and not upside-down, as the camera does, because of the connection of the optic nerve with the brain, which analyses and defines the image.

During his practical experiments, he often used the term “al-Bayt al-Muthim”, which translated in Latin as camera obscura, or in English as a dark, private or closed room or enclosed space. Camera is still used today, as is qamara in Arabic which also means a dark room.

Today, the camera has transformed from its beginnings in al-Haytham’s dark room, into a sophisticated digital process, while the study of optics has blossomed into an entire scientific process covering lasers, optical sectioning of the human retina and even researching red bioluminescence in jelly fish. †



Megaethoscope



WANT TO SEE THE CAMERA OBSCURA?

Step into the Dubai Moving Image Museum (DMIM) near the Dubai Internet City metro station. Housing the private collection of one of Akram Miknas, DMIM walks you through the rich history of images through unique examples of Camera Obscura, Stereoscopy, Transforming Images, Magic Lanterns and Animated images.



Source: www.dubaimovingimagemuseum.com



Different Thought Processes

We need to reboot our strategic thinking as the onset of GNR approaches

Depending on your personality or your personal situation, the future is either a source of excitement or the cause for anxiety. Either way it rarely leaves anyone indifferent. For businesses, it comes loaded with implications, particularly if they need to be ready to react to rapid changes. No strategy has ever been conceived with eyes only focused on the past.

Knowing what the future holds has been a human quest for as long as they have walked the earth. Yet few people can claim to truthfully have the answer. With science, though, we seem to become better at detecting trends and predicting certain elements of evolution.

Evolution is a key concept because the roots of the future have been laid in both our past and our present. It's clear that several aspects of our lives are evolving more and more rapidly largely thanks to, or because of, technological developments. There is evidence that our brains are being rewired as the result of the use of modern media, particularly among teenagers.

So what else is evolving without us noticing? What else should we be paying attention to, if only we were aware of it?

To take stock of the situation, to absorb the latest technological and research developments and consider their implications for mankind as well as corporations, it takes a wonderjunkie obsessed with the co-evolution of human and technology like Jason Silva.

Media personality, futurist, philosopher and filmmaker, he has turned technology and science into an art form. Having studied many of the most important trends in technology, he has created a YouTube channel, *Shots of Awe*, where he shares his inspirational films about creativity and the future. Many will know him as the host of *Brain Games*, the National Geographic hit show about the workings of the human mind.

Silva is a natural born communicator who discusses tricky and technical subjects with ease. He talks of a future driven by developments in genetics, nanotechnology and robotics (or artificial intelligence), known simply as GNR. Computing power will fuel this triple revolution and allow us to create artificial neurons.

Moore's Law, formulated by the co-founder of Intel, Gordon Moore states that

Cognitive Power: Jason Silva says that having a vision of future leads to better decision making





the number of transistors in a computer chip will roughly double every two years, meaning that with miniaturisation, the computing power in a mobile phone will be more than two billion times greater in 60 years' time than it is today. A computer the size of a blood cell could be millions of times more powerful than today's supercomputers.

Futurologist Ray Kurzweil also predicts that GNR will create fundamental changes in humanity. He

created the metaphor of the "singularity", that moment in time, which could be just a few decades away, when machines become intelligent enough to develop their own consciousness and start designing their own machines. This will be a decisive rupture with the rest of human history, with implications that we can only begin to imagine.

Spike Jonze's film *Her*, where humans have intimate relationships with computer programmes, is one

vision of this. This may sound like science fiction but it seemed plausible enough to Google which hired Kurzweil as its head of engineering.

It's not just about the left-brain though, and Silva also believes that creativity will be at the heart of this revolution. Artists will use the technology to express our human culture in new terms. Physicist Freeman Dyson once declared: "a new generation of artists will be writing genomes (the genetic material of an



**TECHNOLOGY
IS AT THE
HEART OF
HUMAN
EVOLUTION
TODAY**

"Silva believes that ultimately, we will be able to engineer our consciousness through the GNR revolution. Our minds are restricted by the fact we have 100 billion neurons. In future, we will be able to rent out extra neurons to expand our mental capacity."

organisms) with the fluency that Blake and Byron wrote verses.”

The future will, of course, be an incredible time for marketing and advertising as the sector moves from a world of genes – competing for mates – to the world of memes, Richard Dawkins’ concept of ideas evolving and fighting for attention.

Silva enthused audiences at this year’s Cannes Lions Festival, the sector’s major global annual awards event and seminar series.

Under the title *Reboot*, he took delegates on a 40 year journey in 40 minutes to a place where technology has advanced far beyond what we can conceive today and where biotechnology and genetics have become growing areas for development. He asked the audience to re-evaluate the way it looks at the world in preparation for the coming transformation of our consciousness.

This was and is not about future gazing just for the sake of it. Looking to the future helps us better understand the developments that are happening


today. When Twitter launched in 2007, many of us thought it was just a glorified form of text messaging because we interpreted it in terms of the technology of the past. Little did we realise that it was the start of a completely new form of communication – micro-blogging and live storytelling.

Having a vision of the future will help us make better strategic decisions today. Look, for instance, at wearable technology such as Fitbit, Jawbone, Google Glass and Samsung Galaxy watches. We need to consider where this new wearable tech will go in a few years’ time. Will it become a medical sensor that tells us if we are about to get seriously ill? Will it develop the ability to tap into our brain waves and read our emotions, perhaps helping to cheer us up?

Silva believes that ultimately, we will be able to engineer our consciousness through the GNR revolution. This could lead to a world where we hire extra neurons to improve our cognitive power. Our minds are restricted by the fact we have 100 billion neurons. In

future, we will be able to rent out extra neurons to expand our mental capacity.

This can seem far-fetched but look back at today’s world through the eyes of your own grandparents at your age. Listening to the vision of futurologists such as Jason Silva can help us picture where these technologies are heading and consider what future they bring to every one of us, as individuals and as companies.

Futurologists such as Silva help us walk on a clearer path and allow us to explore possible futures thanks to the advance knowledge they provide. Technology is at the heart of human evolution today, just look at soldiers injured in battle who are already being fitted with mind-controlled bionic limbs. The limits of the past will no longer hold us back. To get a grip on how such developments are shaping the present, it is worth tuning into Silva’s vision of the future to give your thinking a reboot. 



Elda Chouair is CEO of PHD Dubai

ABOUT PHD

PHD Worldwide is global media and communication agency with more than 3,000 staff working in over 80 offices worldwide working for clients such as Hyatt, Bentley and SC Johnson. In the Middle East, it opened in Dubai in 2005, followed by Abu Dhabi in 2008 and Riyadh in 2010. PHD is part of the Omnicom Media Group a division of Omnicom Group Inc.



UAE NATIONAL DAY: 43 YEARS OF SUCCESS

The United Arab Emirates celebrated its 43rd National Day on 2 December 2014. We salute the building of the Nation.

At 43, UAE is one of the youngest nations on the planet. On 2nd December 1971, Abu Dhabi, Dubai, Sharjah, Ajman, Umm Al Quwain and Fujairah join hands to form the United Arab Emirates. Ras Al Khaimah joined the union one year later. Given its humble beginnings as only a desert oasis less than 50 years ago, UAE's success is nothing short of phenomenal. Here are significant developments that helped build our beloved nation. †



1971

- Establishment of Abu Dhabi National Oil Company (ADNOC). Today ADNOC is the world's fourth largest oil company.
- Dubai International (DXB) airport opens. DXB is now the world's second busiest airport handling 66 million passengers in 2013.

1972

- Rashid Hospital Dubai opens

1973

- Establishment of the UAE Currency Board (Now Central Bank of UAE) and Circulation of UAE Dirham begins





1985

- Emirates Airlines begins operations
Recognised as the world's fastest growing airline, Emirates is currently the world's largest operator of both the Airbus A380 and Boeing 777.
- Jebel Ali Free Zone – JAFZA – opens
JAFZA is the largest freezone in MENA region

1983

- Opening of Dubai Hospital

1982

- Opening of Abu Dhabi International Airport
Abu Dhabi International Airport is one of the fastest growing airport hubs in the world currently serving more than 93 destinations in 54 countries.

1986

- Dubai Air Show launches
Beginning as Arab Air, the Dubai Airshow is now one of the largest and most important airshows in the world.

1975

- UAE's first cement factory, Al Ittihad Cement Company, opens in Ras Al Khaimah

1979

- Establishment of Dubai Aluminium Company (DUBAL). DUBAL's Jebel Ali operation – comprising a 1 million tpa smelter, a 2,350 MW power station and other facilities – is one of the world's largest single-site primary aluminium producers.

1977

- Establishment of The United Arab Emirates University

1987

- Fujairah Free Zone set up

1976

- Establishment of Abu Dhabi Investment Authority
- Establishment of Etisalat.
Etisalat is now the 12th largest mobile network operator in the world, with a customer base of more than 150 million.

1988

- Establishment of Ajman and Umm Al Quwain Free Zones. Higher Colleges of Technology - HCT - are founded by a Federal Decree
- With 15 campuses across the country, HCT is the largest educational institution in the UAE



2000

- Abu Dhabi Securities Exchange and Dubai Financial Market are established
- Sheikh Khalifa Medical City Abu Dhabi is commissioned

**1999**

- Establishment of Federal Electricity and Water Authority
- Operations begin at Ajman Port

1998

- Abu Dhabi Electricity and Water Authority established
- Zayed University is established by Federal Decree

1996

- Ras Al Khaimah and Sharjah Free Zones begin operations

1992

- Dubai Electricity and Water Authority – DEWA – established

**1991**

- Emirates Aviation College is set up as part of the Emirates Group

2001

- Satellite Thuraya 1 successfully deployed

**2003**

- Etihad Airways starts operations
Etihad has been named as the 'World's Leading Airline' at the World Travel Awards for five consecutive years.
- Telecommunications Regulatory Authority – TRA – is established

2004

- Abu Dhabi's Higher Corporation for Specialized Economic Zones and Dubai International Financial Centre are launched

**2005**

- Abu Dhabi Education Council is set up

2006

- Dubai launches its Knowledge and Human Development Authority

In 1970, only 48 per cent of UAE adults were literate; today more than 93 per cent are literate, with nearly equal rates for women and men



2008

- Abu Dhabi's Economic Vision 2030 unveiled
- First world energy summit held in UAE

2009

- UAE is declared as the headquarters of International Renewable Energy Agency
- Dubai Metro – the world's longest driverless metro – begins operations



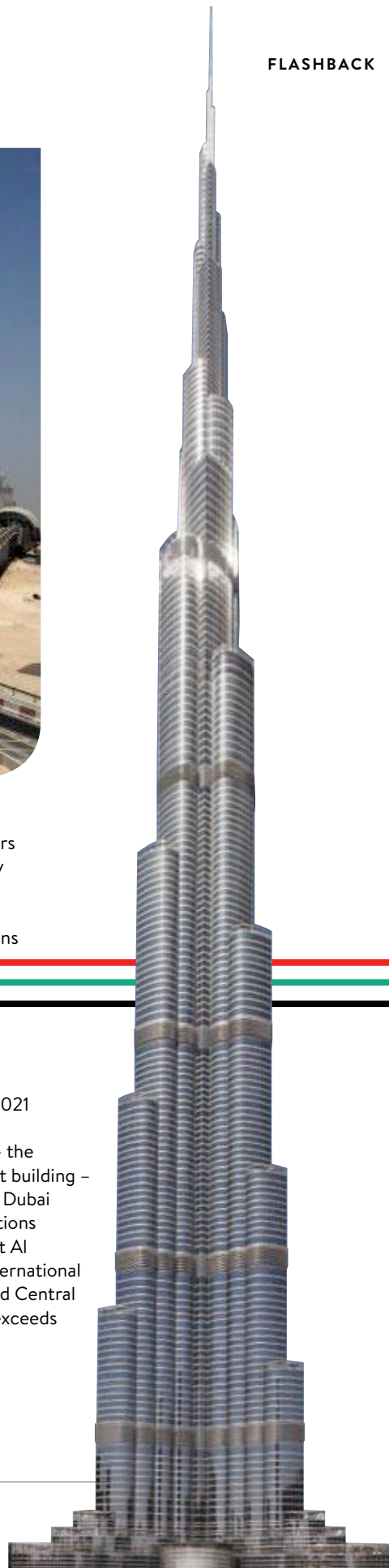
مؤسسة محمد بن راشد آل مكتوم
MOHAMMED BIN RASHID
AL MAKTOUM FOUNDATION

2007

- Abu Dhabi Health Services Company (SEHA), Health Authority of Abu Dhabi (HAAD) and Dubai Health Authority are launched
- INSEAD Abu Dhabi and Khalifa University of Science, Technology and Research open
- Mohammed Bin Rashid Al Maktoum Foundation is established

2010

- UAE Vision 2021 is launched
- Burj Khalifa – the world's tallest building – is unveiled in Dubai
- Cargo operations commence at Al Maktoum International – Dubai World Central
- UAE's GDP exceeds Dhs1 trillion





2014

- Dubai launches its Smart City initiative
- Dubai Tram opens

In 1971 the total population of the UAE was 180,000, by 2013 it had reached 9.4 million



2013

- The world's first airport facility dedicated to the double-decker A380 opens in Dubai
- Dubai wins the bid to host World Expo 2020

2011

- Yahsat Y1A satellite launched. The satellite is orbiting 36,000 kilometres above Earth and provides enhanced telecommunications services.



2012

- Khalifa Industrial Zone Abu Dhabi opens
When it opened KIZAD created an area larger than the entire island of Singapore for trade.





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