BBK

بنك البحرين والكويت

BBK DIGITAL ECONOMY
FORUM & EXPO 2020

Transforming the Economy Through Digitisation
14-15 JANUARY 2020

POST FORUM REPORT

About

The BBK Digital Economy Forum & Expo was a two-day Forum, organized by BBK under the patronage of the Central Bank of Bahrain and powered by the Bahrain Institute of Banking and Finance (BIBF). The forum introduces an innovative platform about the importance of digital transformation to revolutionize the economy.

Forum Tracks:

Leadership & Culture	Innovation	Customer Experience	Women in Technology	Jobs of the Future	Startups

Forum in Numbers:

600	Participants
2	Days
6	Forum Tracks
44	Speakers
7	Expert Panel Discussions
8	Keynote Sessions & Case Studies
13	Exhibitors

Forum Participating Sectors:

- 57% Financial Services
- 5% Information Technology
- 12% Government
- 3% Telecommunication
- 2% Oil & Gas
- 5% Education
- 16% Other

Forum Committee

Hassaan Burshaid
Forum Director

Ahmed Naeemi
Project Manager

Dr. Adel Salem
Committee Member

Najwa Al Ahmed
Committee Member

Mohamed Bucheery
Committee Member

Rafa Kaddoura
Committee Member

Amal Al-Sorani
Committee Member

Maryam Majed
Committee Member

Hala Karmustaji
Committee Member

Event Highlights

DAY ONE

Event Highlights

Panelists

SIDNEY WHEATLEY
CIO at Private Family Office
& Interim CEO at Skil Brum

ABDULWAHID JANAHI
CEO
Benefit

OMAR REBHAN
Vice President of Public Relations & Business
Development and Spokesperson, Hungerstation

ABDULLA DASHTI
Manager, Digital Sales Channels
& Vendor Relations, Zain Bahrain
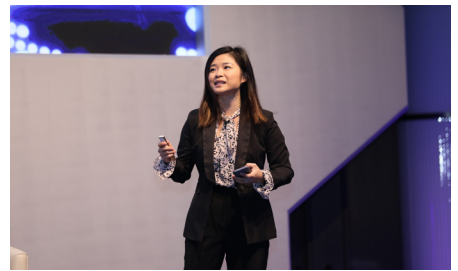
DAY TWO

Forum Opening Ceremony

BBK Opening Speech
Mr. Reyadh Sater, Group Chief Executive, BBK

BBK Group CEO Reyad Sater's opening remarks focused on how a strong partnership between Bahrain's public and private sectors are laying the foundations for a successful digital economy. People, businesses and processes are becoming increasingly linked, and every industry is reassessing its traditional boundaries. While we all accept that change is inevitable, the time has now come to implement those changes. He highlights how BBK is leading the way by offering a management training program focused on IT and fintech, and introducing self-operated machines which provide ATM cards in real time, and urges other business leaders to implement similar, relevant measures in their own industries.

Keynote: Digital Economy: A Glimpse into the Future
Jeremy White, Executive Editor, WIRED Magazine, UK

This session by Jeremy White, Executive Editor, WIRED Magazine, UK provides an exciting look into where the digital economy may be headed in the coming 10 or 20 years.

First, we can expect an important geopolitical shift in power. The US has dominated computer technology for decades. Today, however, China's computing base is equal to the best of the US and Europe combined.

Connectivity will lead to more collaboration. The early 2010s were characterised by competition between tech giants Apple, Samsung, Google, Amazon, and Facebook. Going forward, competition will give way to collaboration, as no one player can fully dominate the market. Apple, Google and Amazon recently announced a smart home alliance, pooling together their incredible expertise to create an integrated system which will change the world.

Ideas about the Internet of Things (IoT) are shifting. In the early stages of innovation, we saw a proliferation of 'silly' products that were not particularly good or useful, such as an app that tells you if you have enough milk in the fridge or luggage that follows you around. But now we have become better at developing more useful products which have the potential to improve the quality of life for users.

In 1995, voice recognition did not even exist. By 2017, it had become 95 percent accurate, which is the same error rate as a human. This opens up the potential for a variety of technologies operated via voice commands.

Similarly, computers had to be taught how to read and interpret images. Now, they can generate their own imagery completely from scratch. As internet penetration rates reach maturity, it paves the way for incredible growth in e-commerce, particularly in this region.

With such a proliferation of technology, security will become a bigger concern than ever—which is where blockchain technologies will become important. In the coming decade, blockchain will find many uses beyond financial (cryptocurrencies). It could be used by travel agencies to maintain accurate inventories of hotel rooms and flight bookings or in the construction industry to maintain detailed histories of buildings.
AI will become so commonplace it will simply be known as

'computing'. It will revolutionise industries, augmenting jobs by taking over repetitive or boring business functions, such as accounting, back office processing, and various forms of data management.

But even these incredible changes are nothing compared to what we can expect to see once the quantum computing revolution takes off. Quantum computers are so vastly superior they can solve problems that our current technology cannot.

Our main responsibility over the coming years will be to accept, normalise, and implement these new technologies, and early movers will hold the greatest advantage.

Keynote: The Government of Bahrain's Perspective Towards a Digital Economy
H.E. Mohammed Ali AlQaed, Chief Executive, Information & eGovernment Authority

Over the past 15 years, Bahrain has made great strides towards embracing digital technologies at the government level. The formation of the Supreme Committee for ICT and its eGovernment initiatives indicate the Kingdom's future-ready stance. The government has been supported in its efforts by the Kingdom's visionary leadership, who have laid the foundations for a strong digital economy.

 The eGovernment portal is one-stop platform providing seamless end-to-end services from various government entities to end users. Offering more than 315 government services via a secure data network, it has handled more than BD 500 million worth of transactions in the past decade.

Many of the underlying systems, such as the payment gateway, national authentication systems, complaints system (Tawasul), and identification systems, are shared across multiple government entities to avoid replication and boost efficiency, and in some cases, are also shared with the private sector. For added security and reliability, and in line with the government's cloud-first policy, many of these systems are set to migrate to the cloud by mid-2020.

To support these activities, the government has laid out robust regulation, from personal data protection and e-transaction laws to fintech policies. A dedicated Supreme Committee for Security has been established to address security-related issues. In terms of funding, the government has set up a USD 100 million fund to support innovation and startups.

The government also recognises the growing requirement for a digital-ready workforce and is working closely with Tamkeen to offer tailored IT skills programs. This is a national collaboration between government entities, universities, and major IT players to ensure that the Kingdom has access to highly skilled individuals who are trained in the specific requirements of government IT services.

Although the government has taken the initiative to lay strong foundations for the digital economy, private sector cooperation is vital. The private sector must work with the government to advise on appropriate regulation and policy and take the lead in driving research and development. It is also up to the private sector to develop innovative solutions that address local and regional needs and create market opportunities to improve export revenues.

His Excellency concludes that the Middle East has realised only 8 percent of its digital potential, and there are many opportunities to be seized. The value of the global digital economy ranges from 4.5 to 15.5 percent of world GDP. The USA and China account for 75 percent of all patents related to blockchain technologies, 50 percent of global spending on IoT, and more than 75 percent of the market for cloud computing. In 2018, digitally delivered services amounted to USD 2.9 trillion or 50 percent of global service exports. Across the MENA region, however, only 8 percent of SMEs have an online presence, so there is plenty of opportunity for growth.

Ministerial Panel: What is the current state of Digital Economy in Bahrain and How Can We Fill the Gaps?

This panel discussion, moderated by **Dr. Simon Galpin, Senior Advisor - Investment Promotion, EDB Bahrain,** examines the Kingdom's current progress with its dynamic transformation into a digital economy.

H.E. Engineer Kamal Bin Ahmed Mohammed, Minister of Transportation and Telecommunications discusses the key features that contribute to a strong digital infrastructure and how Bahrain is performing on each front:

- A visionary government: In the case of the Bahraini government, it has always taken the initiative to import and deploy the latest technologies and lay out suitable regulation. However, the country is not yet at the level where it is producing its own technologies domestically. This is an important area for growth and represents opportunities in both the public and private sectors.

- A workforce with the skills and knowledge to compete on a global level: Here, His Excellency points out that the nation lacks adequate research and development facilities for AI and IT. Without these, it will be impossible to develop home grown products which can compete on the world market.

- Connectivity - Bahrain ranks highly on global indexes, with a strong national broadband network and high levels of internet penetration.

- Support stimulus - to help create demand for digital products, i.e. capital, business incubators and accelerators, which is again an area where Bahrain is doing very well.

- Access to vast quantities of data coupled with data privacy: Data is the fuel of digital economies. The Bahraini government has begun the process of digitizing its activities, which generates the necessary data that can be mined to identify patterns and automate processes using AI.

H.E. Mr. Zayed R. Alzayani, Minister of Industry, Commerce and Tourism encourages Bahrain to embrace an open economy. Bahrain went from a small pearling nation to an oil-based economy in the 1930s, became a banking hub by the 1970s, and focused on telecommunications in the 1990s. Now, as it is poised to become an important hub for fintech and digital innovation, it will need to embrace openness in order to succeed.

Data and technology are borderless. Rather than seeing this as a threat and closing borders to protect local businesses, it should be seen as an opportunity for growth. Certain sectors may be adversely affected, such as retail, but overall, the economy stands to gain as Bahrain looks to international markets to find customers for its digital products.

For its part, the government is currently the biggest customer for digital technologies, with its aim of going fully paperless and online. This has a cascade effect on the economy by making it easier for individuals and businesses to deal with administrative matters and allowing them to focus on being productive. For example, the Sijilat system allows the MOIC to register new businesses in minutes as opposed to months. But while it is easier than ever to register a new business, the government is focused on promoting quality businesses rather than quantity.

Leadership & Culture Track

Keynote: **How the Global Digital Economic Shift is Affecting Leadership & Culture in the Region**

Amal Dokhan, CEO, Global Entrepreneurship Network GEN Saudi at GEN Global

CEO, Global Entrepreneurship Network GEN Saudi at GEN Global, kicked off the Leadership & Culture session with a keynote speech on how leadership styles must evolve to support the emerging digital economy.

At its heart, the digital economy is comprised of connections between people, devices, platforms and processes, which enable them to work together to meet the needs of governments and corporates.

Digital transformation takes place at multiple levels. At the personal level, all of us interact every day with our devices—for example, there are now more mobile phones than toothbrushes in the world!—and each person produces over 140 GB of data daily, in the form of texts, images, videos, and information from wearable devices. All of this data can be tapped into and organized to identify patterns and gain insights.

At the industry level, digital transformation affects the way businesses operate. For example, manufacturers can now see the entire life cycle of every piece of clothing they produce via smart tags, from the moment it leaves the factory, until it is purchased. This offers valuable insights which help reduce costs and meet customer expectations better.

At the macro level, governments must consider issues of job creation and how to ensure that the workforce has the correct skills to thrive in the digital economy. They must spearhead initiatives to harness all this data to create smart cities and smart nations.

At each of these levels, individuals and entities fall into certain cagetories. There are beginners, who don't want to take the first step; 'fashionistas' who are curious about everything new and shiny; and conservatives, who focus on the few things they know and don't want to experiment. But the ones who achieve maximum results, and therefore revenues, are the digital masters who embrace digital transformation. So, how does one become a digital master? Dokhan offers the following suggestions. First of all, we must remember that the journey is imperfect, and things will be messy along the way, but it is important to keep experimenting. Human-centered design must take priority, with a focus on integration, transparency and connectivity. All stakeholders, including beneficiaries and decision makers must be involved, otherwise the sustainability of the project may be affected. Solutions must be customized and localized to ensure maximum buy-in from stakeholders. Finally, every single person must learn how to collaborate, because change cannot happen without collaboration.

She concludes that this is only the beginning and there will always be new emerging technologies. What makes the difference is having leaders who inspire. Leaders must get people excited about the future by showing them the possibilities, and they must enable people to contribute to this future by creating a culture which embraces change.

Panel Discussion: Are New Leadership Styles and Organizational Cultures Required for a Business to Survive in the Digital Era?

This panel discussion, moderated by **Yousif Ali**, **Head of Leadership & Management, BIBF,** focused on how various industries are embracing new leadership styles and organizational cultures to become future-ready.

Dr. Mohamed A. Bahzad, Secretary General, Bahrain Tender Board notes that the procurement function today is driven by automation, enhanced by machine learning, improved by predictive analysis, secured by blockchain and powered by human engagement. In such an environment, leadership must focus on making the best use of the available data to enhance transparency, increase efficiency, and deliver better customer experience. This helps optimize the use of public funds and ensures that the government's decisions are in line with market requirements.

Dr. Jawaher S. Al-Mudhahki, Chief Executive, Education & Training Quality Authority adds that digitalization posts particular challenges for the education sector, as it must help prepare students for jobs that do not exist yet. As technology takes over more routine tasks, students must learn skills like critical thinking and analysis which helps them work effectively with technology. The future of education will involve identifying key strengths in students and delivering personalised training programs to help enhance those strengths.

Dr. Simon Galpin, Senior Advisor - Investment Promotion, EDB Bahrain identifies two main challenges related to digital transformation faced by traditional businesses. First, it is more difficult for older businesses to integrate new technology with their legacy infrastructure. They are outdone by newer competitors who are building their entire infrastructure from scratch with the latest tools available. Second, traditional businesses find it much harder to recruit younger, tech-savvy employees who could help modernize their structures. Employers must think about how to attract relevant talent by offering attractive remuneration and reward packages, ongoing training, and other benefits.

Jamal Fakhro, Managing Partner, KPMG offers suggestions for business leaders, noting that they must first understand and embrace modern technology themselves before seeking to educate their employees. If leaders do not accept the reality of digital transformation, it can create a rift within the organization. At the national level, this requires the government to have a vision or a national plan about the direction it wishes to steer the country in, so that the public and private sectors can work together towards a common goal.

Innovation Track

In this session Jonathan Allen, CTO, AWS Enterprise Strategist highlighted how Amazon Web Services (AWS) primes itself for innovation, and how other companies can do the same. In 2019, Amazon innovated 1,900 new products or features by focusing on four key aspects: mechanisms, architecture, culture, organization.

The mechanism of innovation at AWS starts with the customer and works backwards. The most powerful ideas come from employees who deal most closely with customers, so the company encourages and empowers them to come forward with their ideas. Whoever has the idea becomes the custodian of that idea and works to bring it to life by recruiting a team and building the product. During this process they are encouraged to think about questions such as: Who is the customer, and what is the problem they are facing? What are the benefits of this idea? What will the customer experience be like?

Next, AWS offers a powerful architecture to help bring ideas to life. Team members have access to standardized digital building blocks, via the AWS global platform, to bring their idea to life. This gives them the tools they need to build and test a new product or feature.

Amazon only recruits employees who are a good fit for its culture of innovation, demonstrating key leadership principles such as customer obsession, an ability to learn and be curious, thinking big, delivering results, earning the trust of others, and ownership.

Finally, the organization structure at AWS promotes innovation. The company has a flat organization structure wherein small, empowered teams of 4 to 10 people work together on an idea and take responsibility for all stages of its development. There is no development or support side of the business; it is a decentralized system in which all employees take full responsibility and ownership.

Allen concludes with the thought that while failure in production is never acceptable, failure at the idea stage is not just acceptable but highly desirable. Companies should not be afraid to fail as long as they are coming up with new ideas and testing them out, because this is how they will innovate.

Panel Discussion: Are the changes in Digital Economy Disrupting or Supporting Business Growth?

This panel discussion, moderated by **Hiba Jaber, Consultant and Instructor, Dubai Real Estate Institute,** illuminated how different industries are innovating for the future.

H.E. Hend Obaid Al Marri, CEO, Dubai Real Estate Institute, explains that innovation in real estate can lead to the creation of smart cities with more efficient infrastructure, which are more connected, more environmentally friendly, and more livable. However, citywide transformation requires the cooperation of all stakeholders, including the government. Innovation must be led by the government, which must take the responsibility of defining objectives that benefit residents and the environment alike, and drawing up an appropriate legal framework for such development.

Dr. Amani AlHajri, Genome Project Director of National Genome Centre, notes that innovation in healthcare is quite challenging due to the high cost of digitalization and the absence of evidence as to its effectiveness. To be truly effective, healthcare innovations must be customized with the end users in mind and meet the industry's objectives. This will help identify industry trends and create opportunities. She adds that the health sector should focus on creating a positive atmosphere which encourages employees to make suggestions and innovate.

Trey Goede, Venture Capitalist/Entrepreneur, Saudi Aramco Entrepreneurship Center, notes that the oil and gas industry is similarly conservative, with companies taking a long time to adopt new technologies. Innovation in this sector is concerned with what opportunities it allows companies to take and how long it will take for gains to be seen, and it can be accelerated by creating smaller teams of more empowered employees.

Daniel Broby, MSC FinTech Programme, University of Strathclyde, highlights how universities are working to equip students with the skills they will need to survive in the future. Although innovation cannot be taught, it is possible to create the conditions for it, which universities are doing by creating innovation labs and encouraging research. He points out how the Bahrain government is making similar efforts on a national scale by nurturing its startup ecosystem, which brings together innovative thinkers and empowers them to take their ideas to the next stage.

Customer Experience Track

Keynote: The Roadmap to an Organization's Digital Customer Experience

Todd Schweitzer, CEO, Brankas

This session discusses how technology is transforming the customer experience in a variety of industries, particularly banking.

Customer experience today is characterized by a profusion of choice, not just about what to consume, but also how to consume it. Customers can purchase exactly what they need, when they need it, without having to pay for anything extra.

For example, fewer people are buying cars as Uber and Careem have made on-demand transportation options readily available. Viewers can purchase subscriptions to their favorite streaming services or download a single movie or show of their choice instead of paying for a cable bundle which contains channels they are not interested in. New businesses no longer need to invest thousands of dollars of IT infrastructure; they can simply sign up for pay-as-you-go services offered by providers like Amazon Web Services.

Schweitzer compares this to the revolution in the banking industry. Where customers once maintained multiple apps and website accounts to access services from different banks, they are now coming to expect unified access to all their banking needs via a single interface.

This is made possible by adopting open banking models, wherein banks provide the platform and connectivity and allow third-party providers to build products on top. These APIs are more innovative and agile and relieve the banks of having to solve every single customer problem. Banks gain access to valuable customer data and open themselves to new revenue streams as they collect commission fees on third-party services purchased through their platforms. The system also reduces dependency on intermediaries such as brokers and payment gateways.

Finally, open banking benefits the entire economy by delivering an optimized customer experience. Consumers gain access to specialized products designed to serve their exact requirements, and groups which were not addressed previously gain access to the latest financial products and services.

Panel Discussion: The New Wave of Customer Experience - What are the Important Lessons Learned?

This panel discussion, moderated by **Sidney Wheatley, CIO at Private Family Office & Interim CEO at Skil Brum,** focused on how companies are leveraging the power of technology to enhance the customer experience. Businesses today recognize that sophisticated customers expect not only to love the products they are consuming, but also to be delighted by their overall experience, and they are using technology to help achieve their goals.

Abdulwahid Janahi, CEO of BENEFIT notes that customers often tell organizations what they want or need, but it is up to them to listen. For example, Benefit started out as a B2B enterprise to serve banks and dealt only indirectly with end users. Over time, however, as the company started being called in in to mediate between customers and their banks, it started thinking more about how it could serve individuals directly. Today, one of its flagship products is Benefit Pay, the national e-wallet service, which offers convenient, near-instantaneous bank transfers and bill payment facilities to more than 290,000 registered users. Local transfers which used to take two to three days are now completed in about five seconds, and cheques are often cleared on the same day. It is not hard to see how such technology improves the lives of its customers.

Omar Rebhan, Vice President of Public Relations & Business Development and Spokesperson, Hungerstation comments that technology is meaningless without a human element—customers need to know that there are real people behind the tech, and that those people care about them. The growth of Hungerstation was powered by technology, right from initial marketing efforts to being a fully data-driven entity today. The company collects data from every single customer interaction and reviews it regularly to make informed decisions about how best to serve its customers.

Abdulla Dashti, Manager, Digital Sales Channels & Vendor Relations, Zain Bahrain explains that technology helps to eliminate pain points, making the customer experience hassle-free and enjoyable. Technology is a tool that empowers customers to handle their own transactions, if they wish, and eliminates the hassle of visiting a physical store for most services. Zain Bahrain has also invested in an AI-powered chatbot which helps deal with the most common inquiries so that customers can get immediate assistance with their needs.

Jobs of the Future Track

Keynote: The Future of Jobs and New Professions in the Booming Digital Eon

Khurram Siddiqui, Partner, Global FAAS Intelligent Automation / Robotics Leader, EY

In this keynote speech, Khurram Siddiqui examines how jobs will need to change in the future to keep up with the digital revolution.

We are currently in the 4th industrial revolution, which is characterised by increased connectivity and interdependence. Macroeconomic trends and technology advances, including smart devices, are altering industries, businesses, professions, and jobs at an unprecedented scale and rate.

Over 50 billion internet-connected objects will exist by 2022, and over half a trillion by 2030. By 2025, more than 50 percent of the global workforce will be digital natives. By 2050, nearly 50 percent of today's jobs are expected to be automated.

In such an environment, the nature of work is changing on a scale not seen since the last industrial revolution. Robots are becoming more lifelike, AI is crossing new frontiers, gig work is supplanting full-time employment, and remote work is supercharged by augmented reality and virtual reality.

The traditional employer-employee relationship is already shifting. We are moving into the human cloud, where four in ten of us will work on contracts, not in permanent jobs by 2020.

Many predict that automation will produce massive layoffs, but automation will also create entirely new job categories, so the net effect will be positive. Machines will not replace humans but supplement them, as humans are required to provide context, nuance, and empathy to our work.

Jobs are essentially a bundle of tasks. In the future of work, those tasks will be unbundled, and humans and machines will work side by side, each performing the

tasks to which they are best suited. As machines are more efficient at rule-based tasks, such as many accounting-related and legal functions, it will be up to humans to fill roles that require complex problem solving, creativity, emotional intelligence, cognitive flexibility, and collaboration. Further, successful future professionals will need to have self-reliance and resilience to self-promote and constantly develop themselves. Networks will be even more critical.

Business owners and leaders must take into account the following considerations as they prepare for the future:

- Customers are getting smarter. They are digital natives who have high expectations from the organisations they interact with and the products and services they consume, and businesses must adapt accordingly.
- Globalisation is shifting the nature of business. Even local businesses must aim to have a global reach.
- There must be a focus on building digital assets, as this is the single recipe for success.
- They must consider new channels and routes to market. Many marketplace apps and websites have access to millions of end users. Partnering with such apps can give the business access to its target customers.
- They must be open to new working environments which offer flexible work options and focus on the quality of work or product rather than on the physical presence of employees.
- Innovation has to be built into the DNA of the business. If individuals and businesses continuously learn and adapt, then the coming developments will no longer be a threat. Instead, change becomes an opportunity.

Foundational Skills & Talent Required to Meet the Job Market Demands of 2030

This panel discussion, moderated by **Ameen Altajer, CEO, INFINITEWARE,** focused on how individuals need to shape their skills to compete in a digital world.

Mohammed AlMohri AKA DJ Outlaw, Founding Member, Outlaw Productions shares insights from the world of music, noting that digitisation helps musicians find opportunities. The global music industry is worth 148 billion dollars, 80 percent of which comes from streaming. Musicians also have access to real time data about who is listening to their music, which gives them important feedback.

Sh. Latifa Al-Khalifa, Co-Founder & Managing Director at Clever Play, discusses the challenges faced by education providers. The World Economic Forum suggests that 65 percent of students who are in primary schools today will end up working in jobs that do not exist yet. According to the Ministry of Information of Bahrain, 68 percent of all Bahraini graduates in 2017-18 went into humanities and only 32 percent studied science and technology. There is not only a skills gap but also a gender gap to be addressed, and the best way to do it is to train students in skills like problem solving and creative thinking rather than simply focusing on traditional subjects like math and English.

Esam Hammad, Executive Director - Partnerships & Customer Engagement at Tamkeen, notes that training and development used to be the responsibility of employers, but now employees need to take on that responsibility themselves, and further that it should be a lifelong pursuit. For the government's part, it has a responsibility to highlight emerging trends and identify future industry requirements, so that individuals can seek appropriate training and certification to take advantage of upcoming opportunities. Having assisted over 50,000 companies and 200,000 citizens, Tamkeen holds a lot of data about the private sector and can support the private sector by providing insights into which areas of the market are saturated and which subsectors hold potential for growth.

Mohsen Ali, CEO & Coach, Discipline Sports Academy discusses how technology helps new businesses find and retain customers. It also helps business owners be more time efficient and grow their businesses. In such a world, where customers can find everything they need online, it is essential to retain an emotional connection and a human touch.

Women in Technology Track

Keynote: Women's Participation in Tech - Is it Time for a Boost in the Region?

Meg Jones, Senior Expert, Economic Empowerment, Gender & Trade

This session highlights how women in the Arab world are succeeding in ICT-related areas, and what could be done to further encourage them.

Girls in the Arab region are clearly interested in STEM subjects. Thirty-four to 57 percent of STEM students in the Arab region are women, which is a higher rate of participation than in the US or the European Union. However, there is a disconnect between women's levels of university participation and their securing employment or starting a business in these fields.

Women are at a disadvantage in the startup ecosystem and lack access to initial capital. Research by Boston Consulting Group shows that a female entrepreneur receives an average of USD 935,000 to start a business, compared to an average of USD 2 million received by a male entrepreneur. This is despite clear evidence that investment in businesses founded or co-founded by women offer a better return on investment: 78 cents for every dollar invested, versus 31 cents for every dollar invested in businesses founded by a man.

Jones outlines five initiatives that Bahrain could undertake to encourage women in ICT and to highlight at a global level the work it is doing on this front.

1. Reporting on UNDP Sustainable Development Goals
Bahrain produced a national voluntary review of its performance towards achieving SDG 5, which is related to the empowerment of women. Jones suggests that future SDG reports should also include the Kingdom's progress on Goal 9, which pertains to innovation, infrastructure and industry, because it is doing very well on this front, with particular focus on how women are performing in these areas.

2. Participating in official engagement groups under the G20 forum, Saudi Arabia The G20 meeting is being hosted in Saudi Arabia in October 2020 and although Bahrain is not a member of the G20, there are some opportunities for engagement and dialogue via W20,

the official engagement group of the G20 which discusses women's issues. Bahrain could use this as an avenue for highlighting its initiatives aimed at supporting women in ICT.

3. Participating in the Commission on the Status of Women, New York The Commission on the Status of Women, which takes place in New York every March, focuses on the economic empowerment of women. Bahrain could send a delegation to the forum, with the aim of exploring avenues to promote women in ICT.

4. Explore initiatives by the Equals Partnership
The Equals Partnership, established by the UN and the International Telecommunications Union, fosters women's participation in technology. Bahrain could use this initiative to consider ways to get women into e-commerce.

5. Participate in the International Day of Girls in ICT
This UN-recognised initiative, which is marked on 23 April each year, helps young girls learn about careers in ICT and what it takes to lead businesses or government organisations. HR departments of companies could organise a day when young girls could come into the office and interact with their ICT departments.
Jones also suggests that women, particularly those with a technology background, should have better representation on corporate and government boards, as they can help companies reach out to their female customers.

Finally, Jones suggests establishing a quota for government procurement from women-led companies. They must meet the established standards of quality, pricing and time to delivery, and training can be offered to women entrepreneurs to help them meet these standards. Given that government procurement in Bahrain is responsible for 30 percent of GDP, such a policy would have an enormous impact in encouraging women to get into business.

Casestudy: Women in Tech - How to stop talking about diversity and start doing it

Joy Phua, General Manager, Le Wagon Coding Bootcamp

This case study examines how diversity and inclusivity in ICT are essential to creating a more equal world and achieving better business results.

Throughout the 20th century, computer programming was considered clerical work, similar to working on a switchboard or typing, and was largely viewed as women's work. As the industry became more lucrative, computer programming became higher status and better paid, and today most computer programmers are men.

This raises some important questions for the technology we produce and use. Since technology underlines nearly all of our modern-day activities, it must serve all segments of society equally if we want to create a truly egalitarian society. For example, we would not want self-driving cars that prioritise the lives of one group of people over another. Unfortunately, when a single homogenous group of people, i.e. men, is responsible for the vast majority of engineering design, they consciously and unconsciously pass their own biases onto the technology they are creating. If we are to make tech truly equal, we must teach our AI systems the right values and ethics, and for that we need a diversity of voices at the programming level.

Many leaders see diversity as something to comply with out of political correctness or, in the best case, the right thing to do, but they often fail to see how diversity is important for achieving their most pressing goals. There is a strong business case for diversity: it can be a real competitive advantage.

The US National Centre For Women in IT released a study on patents in the software industry which found that patent filing teams of mixed genders were 26 percent more likely to file patents that would be cited, i.e. represent a core innovation.

Many companies are investing a lot of time and energy into technologies to ensure they are meeting their digital transformation goals. But sometimes, they disregard the need to invest in their employees to ensure they can make the most out of the tools that they have. Investing in people is the lynchpin to making sure that a digital transformation initiative succeeds.

Diversity alone is not enough. Companies must also aim to create inclusive work environments, in which individuals are treated as equals and with respect. Inclusivity means that employees feel safe to speak up and are empowered to grow and do their best work. Inclusivity goes up to the leadership level, where people feel included in decision making and collaboration processes.

Diversity plus inclusivity means better business outcomes. It leads to better strategy, better risk management, better debates, and better results.

Panel Discussion: The Digital Gender Gap - Can the Digital Economy Provide Better Opportunities for Women in Technology?

This panel discussion, moderated by **Amal Dokhan, CEO, Global Entrepreneurship Network GEN Saudi at GEN Global,** focused on how to get women more involved in the digital economy to take advantage of what has grown to be a USD 30 billion sector as of 2018.

Lana Al-Attar, Founder, GDG Manama shares her experience of growing DGD to more than 2300 members in less than 2 years and organising developer fests in which 45 percent of the participants were women. She believes that Bahrain offers plenty of programs and opportunities to women, but it is up to women to get out of their own way and overcome preconceived ideas about what they can and cannot do. They should allow themselves to learn through play and explore whatever opportunities interest them.

Najwa A. Rahim, Vice President Information & Communication Technology, Bahrain Airport Company believes that regulation to support working women and working mothers will go a long way towards making sure that women can contribute their skills in the IT sector. She stresses that this is not a women's problem to be solved, but a collective responsibility, since a vibrant economy with full participation by women benefits everyone equally.

Amal Adel Abdulla, Head of Research & Studies Department, Supreme Council for Women (SCW) adds that 47 percent of graduates in IT programs in Bahrain are women, but they comprise only 38 percent of the workforce. Women must recognise that the kinds of job opportunities that are emerging in the digital economy make it easier than ever for them to participate. They should be encouraged to look into flexible working options such as working from home situations, freelancing, or having their own startups.

Aysha Ahmed Bin Haji, Cybersecurity Strategist and Analyst, Head of Internet Crime (Br), General Directorate of Anti-corruption and Economic and Electronic Security, Ministry of Interior - Bahrain notes that women in IT lack female mentors, and that she herself is a product of strong male mentorship. To address this problem, she suggests that IT education for women should not just focus on coding but also on leadership skills required in the sector. She believes that girls should be taught about opportunities in IT as early as middle school rather than high school or college, and suggests that the government should establish policies to encourage foreign IT businesses to start up in Bahrain, thereby creating a strong local market for IT talent.

Startups Track

Keynote: Startups Role & Opportunities in The Digital Economy Race

Omar Rebhan Vice President of Public Relations & Business Development and Spokesperson at Hungerstation

Omar Rebhan, Vice President of Public Relations & Business Development and Spokesperson, Hungerstation. This session focuses on the role that startups play in bringing about change in an economy.

The primary advantage of the digital economy is speed, which translates to an increased ability for businesses to scale, and to produce overall growth in an economy. It also allows an aspect of social governance, due to the transparency offered by current technologies.

Rebhan examines three industries which represent the greatest potential for growth in the GCC:

● Financial technology
Fintech underlies all activities in the digital economy, facilitating financing, payments, open banking, and other developments which will help the economy grow. Local governments invested USD 1.4 billion this year into fintech, and 41 percent of first-time investors are investing in fintech businesses.

● Education technology
There will be an estimated 15 million students in the GCC by the end of 2020. Immersive education technology, which incorporates Augmented Reality (AR) and Virtual Reality (VR) solutions, will be very important in ensuring that students across the region, even those living at a distance outside of major cities, receive standardised, quality education.

● Property technology
Real estate is a USD 207 trillion asset class globally and stands to benefit enormously from tech solutions which enhance the information and transactional aspects of the industry. The co-living space, in

particular, represents a huge opportunity in the region.

Other industries which will benefit from digital enhancements are medicine, tourism and travel, and space.

Next, Rebhan breaks down the role of startups in an economy:

● Startups help economies develop
Startups indicate where investment should go by alerting other players to new opportunities and demands. They take the lead in developing new solutions, and once an idea reaches maturity, the government can step in to take it forward. There is also a potential for knowledge transfer to more traditional businesses through mergers or acquisitions.

● Startups drive innovation
Startups are not encumbered like traditional businesses and can move on quickly to a new idea if their current one is not working. They validate new opportunities and find the most viable options through innovation.

● Startups help shape regulation
Startups are responsible for initiating dialogue with the government about regulation. If there is no regulation in an emerging field, they can ask for relevant regulations to be put in place. If there is too much regulation in a sector, they must ask for it to be deregulated.

Case Study: **How Startups Can Benefit from Embracing Technology**

Khalid Al-Muharraqi, Founder & Chief Creative, Muharraqi Studios

Khalid Al-Muharraqi, Founder & Chief Creative, Muharraqi Studios shares his experience as a case study of how startups in various industries can benefit from embracing technology.

As a traditional artist, Al-Muharraqi had some difficulty accepting digital art as a legitimate medium when he was first introduced to it at university. However, he quickly saw that there was demand for this kind of work and began a career in advertising and marketing. Eventually, he established his own company which focused on creating branding and marketing collaterals.

Importantly, as his business was growing, he continued to upgrade his skills and learn all the new tools as they were introduced. His passion for 3D animation eventually led him to create animated master plans for multimillion-dinar real estate developments.

With the advent of touch screens and gaming engines, he thought about how these could be adapted for commercial purposes. His company now produces interactive virtual tours of projects still in the planning phases. Far superior to traditional physical model displays, they allow potential buyers and investors to virtually walk through the development and enjoy an immersive experience.

Today, his company and its proprietary technology, Cityview, are much sought after by top clients around the world. His success comes down to his willingness to evolve and adapt to new technologies, even in an industry as traditional as art. His journey highlights how learning needs to be a lifelong process if one wants to build a successful business in the digital economy.

Panel Discussion: **Lack of Startups or Lack of Investors in the Digital Economy Era?**

This panel discussion, moderated by **Pakiza Abdulrahman, Manager, Business Development - Startups at Economic Development Board,** examined the startup environment in Bahrain, the investment opportunities available for them, and the role of the corporates, the regulators, and the ecosystem in supporting startups.

Dr. Salman Alaraibi, Archetype urges us to think of startups as not just for young people but also for older people with some corporate experience. Some of the most talented individuals in the region work in corporates. They solve real world problems on a daily basis and are helping their companies attract customers and save money. Such individuals are perfectly placed to form a startup that addresses a specific issue, which their own companies may have an interest in acquiring. Some of the most successful startups could grow from within companies and universities, so this kind of 'intrapreneurship' should be encouraged more.

Ryaan Sharif, Managing Director, Flat6labs discusses the lack of bridge financing available to young companies. The Bahrain ecosystem offers funds to startups at the seed stage up to Series A, but then the support dries up. If local companies are to grow further, they will need capital further upstream. He adds that there needs to be more emphasis on education to encourage entrepreneurship.

Yasin Aboudaoud, Managing Partner, MENA, Brinc discusses how startups do not simply need investors' money, but they need 'value-added money', wherein the investors share their expertise and advice. This creates a synergy between investors and startups that is beneficial to both parties. He shares the idea that startups could be an asset class for banks to consider investing it, and finally that banks should think about how they can serve startups better. Creating financial products that serve their specific needs would open up an entirely new market for banks.

Aisha Abdulmalik, Creative Director, Aisha Jewels shares her perspective as the founder of a successful startup. She tells entrepreneurs that there is no harm in starting small and taking the time to build a business in stages, as long as they are making smart choices about how they market their product.

Forum Closing

Panel Discussion: Recommendations from the Keynote Experts and Q&A

The closing discussion, moderated by **Ahmed Naeemi, BIBF,** concludes the two-day event with some final thoughts from each of the speakers.

Amal Dokhan, CEO, Global Entrepreneurship Network GEN Saudi at GEN Global highlights the many advantages Bahrain enjoys when it comes to entrepreneurship: friendly environment, world class regulation, ease of doing business, infrastructure, and quality talent. Importantly, its small size means that startups can test an idea and get a product out to market faster than in any other country in the region, which offers a competitive advantage.

Jonathan Allen, CTO, AWS Enterprise Strategist notes that as one of only 22 AWS cloud regions in the world, Bahrain offers startups access to important technology building blocks which they can use to build their own products. They are not limited to traditional product development paths but can leapfrog straight to a higher level, without the burden of significant capital expenditure.

Todd Schweitzer, CEO, Brankas believes ex-founders should share stories of their failures as much as their successes, because this will help reduce the fear around joining or creating a startup. As for opportunities, he urges startups to think beyond financial services and consider industries like shipping, insurance, and real estate which could benefit from existing technologies.

Khurram Siddiqui, Partner, Global FAAS Intelligent Automation / Robotics Leader, EY suggests that we should start thinking as a digital native. When faced with a challenge, people should think like a 20-year-old—because chances are, the technology to solve the problem already exists, or can be created very easily. He adds that the government has an important responsibility to establish strict laws around privacy and security so that we can make the most of the digital economy.

Meg Jones, Senior Expert, Economic Empowerment, Gender & Trade points to the shipping industry as an important indicator of success. Given that 80 percent of physical goods are transported via ship, digitalising the shipping industry and making it more secure using blockchain technologies can produce huge benefits for the entire economy. She also reminds us that the average age of successful women entrepreneurs globally is 41 years old, so we should not overlook this demographic group.

Omar Rebhan, Vice President of Public Relations & Business Development and Spokesperson, Hungerstation highlights the importance of educating the public about entrepreneurial subjects via government programs, courses, and discussion forums. This will empower individuals to take advantage of the abundant opportunities on offer.

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