

# WHAT'S NEXT FOR TECH?

## A BRAVE NEW ERA OF INNOVATION

It is the most exciting time for technology and also the most challenging—a time when new technologies hold the promise of an automated electric vehicle in every garage, secure cryptocurrencies in every account and a robot in every office, creating unprecedented leisure opportunities for workers around the world. But it's also a time when these same technologies threaten to make millions unemployed, increase global financial instability and concentrate too much knowledge and too much power in the hands of the few. The job of determining



HP Tech Ventures powers next generation innovation

doing? Policy makers are only just starting to grapple with this situation.”

Perhaps the most challenging technological phenomenon in

“AI and machine learning are getting a bad rap,” Tennenhouse argues. “Historically, the concern about jobs arises whenever there is a major disruptive technology, although many new jobs are created. But in today’s demographic conditions, we need all the innovations that machine learning can deliver. If we can’t improve productivity dramatically over the next 20 years, we will not be able to keep the lights on.”

At the leading tech companies of today, it is this sort of long-term thinking about demographics, the economy and society that is shaping the innovation agenda. “We try to understand how our lives will change in the next decade or two, how our experience with the world will change—how we learn, how and where we live and how and where we work,” says Andrew Bolwell, VP, chief disrupter and global head of HP Tech Ventures, HP’s venture capital arm.

Bolwell says that the company’s investments are being guided by

what he calls four megatrends: rapid urbanization, changing demographics, hyperglobalization and accelerated innovation. The job of HP Tech Ventures is to respond to these trends by deploying HP’s technological expertise in entirely new areas. “We are putting our eyes and ears into the future and looking at places where HP is not even doing business yet,” Bolwell explains. “For example, we are looking at applications for 3-D printing in the life sciences. Printers are very good at the control of tiny amounts of fluid, or what we call microfluidics. We are now exploring ways of using this technology to diagnose diseases.”

On the frontiers of innovation, HP is investigating the potential for smart machines that can heal themselves when infected by a virus, and exploring how humans will interact with so-called ambient

**“All of our human experiences will change over the next few decades.”**

Andrew Bolwell,  
VP, Chief Disrupter and  
Global Head,  
HP Tech Ventures



which of these two competing visions wins out is largely the responsibility of today’s generation of politicians and corporate leaders.

“We have to start thinking about what kind of work is actually important for humans to do,” says David Tennenhouse, chief research officer at enterprise IT specialist VMware. “At a time when the world is facing a huge shortage of workers, which work can we afford to have people

the world today is the emergence of artificial intelligence (AI), in particular robots and machines that can spot new patterns in data and learn for themselves. While AI is still a long way from the superhuman capabilities seen in sci-fi dystopias like *Metropolis* and *The Matrix*, the breakthroughs made in machine learning in recent years have spawned familiar fears about the impact on employment and social equality.

**“Machine learning has the potential to deliver dramatic improvements in productivity.”**

David Tennenhouse,  
Chief Research Officer,  
VMware

computing, when computing migrates out of laptops and into the devices and walls that surround us. “The future hasn’t happened yet, but we get to create it,” Bolwell says. ■

## ENEL X: MEET THE FUTURE



At a time when renewable energy and digital technologies are transforming the way we produce and consume electricity, Italian power giant Enel is disrupting itself for the future.

A company that has at its core the essential business of operating power plants and distributing electricity has launched an entirely new business unit and brand, Enel X, which is developing innovative services for customers in their homes, industries, cities and electric vehicles.

"Enel X represents the future for the non-commodity part of the energy business," explains Enel's director of communications, Ryan O'Keeffe.

"With Enel X, we are taking charge of disruption and giving it our own direction. We are moving into new areas and competing not just with traditional utilities but with companies from the tech and digital spaces. In this way, we are real pioneers in the energy transition," he adds.

Launched at the end of last year, Enel X marks the culmination of the utility's journey toward what it calls Open Power and the New Power Economy ecosystem. As the renewable energy revolution turns domestic consumers into producers of their own power and slashes the price of energy, Enel is going beyond producing and distributing electricity

and is developing new, value-added services for today's generation of more empowered consumers.

"Every business in the utility sector is facing rapid changes," explains Francesco Venturini, CEO of Enel X. "Renewables are making energy cheaper, the generation of electricity is becoming more distributed, and traditional networks are being digitized. We have to do something."

**Enel X is unleashing the potential of digitized energy systems."**

Ryan O'Keeffe,  
Director of  
Communications,  
Enel

Working in a dynamic startup culture miles away from the traditional environment of a utility, Enel X's teams of young researchers have already released a series of innovations for the fast-growing electric vehicles market. All across Italy, the company is working to roll out 7,000 public charging stations by 2020, including cutting-edge designs for fast and ultra-fast recharging points. Worldwide, it is supporting the popular Formula E and the recently announced MotoE championships for electric race

cars and motorbikes, providing advanced energy solutions for every event and showcasing the technology to an audience in the hundreds of millions.

But Enel X is not content just to provide the infrastructure to power electric cars. Reflecting its Open Power vision, it is seizing the opportunity of electric vehicles to develop new value-added services for customers. Partnering with carmakers such as Nissan, Enel X has emerged as a world leader in so-called Vehicle-to-Grid (V2G) technology, which allows owners of electric cars to sell electricity from their batteries back to the grid.

"For us, electric vehicles are not just about selling electricity," Venturini explains. "We provide remotely controlled charging infrastructure and we deploy smart software, which empower customers to provide services to the grid with their electric cars."

Alongside e-mobility, Enel X develops energy management solutions that create cost saving and revenue generation opportunities for customers by optimizing and modulating their energy consumption to make power grids more stable and reliable.

"There are five mission pillars to Open Power," O'Keeffe says. "We want to open energy to more

people, new uses, new technologies, new ways of managing energy, and more partnerships. Enel X covers every one of those. It is the clearest manifestation of Open Power coming to life that you could find within Enel."

**Our mission is to be on the cutting edge of this shift in paradigm."**

Francesco Venturini,  
CEO, Enel X

And as it builds new relationships with its customer base, Enel X is rapidly diversifying into new lines of business. In Colombia, it is partnering with a major local bank to offer financial services to electricity customers who do not have access to traditional credit.

"When you have hundreds of millions of customers connected to your grid through meters, there are enormous possibilities," Venturini says. "Our job is to get closer to our customers and help them benefit from this new paradigm with innovations that make a real difference to their daily lives. The potential is limitless." ■

PHOTOS • From left: Ryan O'Keeffe, Director of Communications, Enel; (Top) MotoE bike and Enel X charging station; (Bottom) Enel X's new offices; new charging pole station for EVs; Francesco Venturini, CEO, Enel X

# how

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## SEAT IN THE FAST LANE

The global car industry has never known a time like this. On the one hand, concerns about climate change and pollution are threatening the future of the internal combustion engine, the mainstay of all carmakers for more than 120 years. On the other, mobile connectivity, digital technology and autonomous driving look set to change the way ordinary people use their cars forever.

While some global automakers have been slow to respond to this perfect storm, other brands are having more success in



SEAT partners with Amazon Alexa and Shazam reinventing not only their cars but also their business models. In particular, challenger brands such as fast-growing SEAT in Barcelona,

whose vehicles are popular with younger buyers, seem to have a better feel for where the market is heading and how to seize the moment. Just in the past few months, SEAT has integrated applications such as Shazam and Alexa into its models, acquired car-sharing startup Respiro and set up an entirely new division, XMOBA, to develop futuristic mobility services. In its home city last year, the company opened SEAT Metropolis:Lab Barcelona, a digital laboratory where the brand researchers work with startups

on the future of urban mobility. Finally, SEAT has boldly spun off its sports car brand Cupra, which is spearheading its drive toward an electric future: in March, SEAT

**“SEAT no longer just makes cars. We are developing mobility services for the future.”**

Luca de Meo, President, SEAT

unveiled the Cupra e-Racer, the very first all-electric touring race car in the world. ■

### PASSIONATE ABOUT THE FUTURE

#### What is the main focus for R&D at SEAT?

Our goal is to create the future of SEAT. The automotive industry is experiencing the most disruptive phase in over a century. There are four factors driving this: electrification, self-driving vehicles, connectivity and new mobility services. In the R&D department, we have to make sure that SEAT is ready to emerge from this disruptive phase as a winner. The rules of the game are changing and there will be new players in the market, but SEAT has to come out on top.

#### Why is connectivity such a priority?

We are front-runners in connectivity mainly because we have a young customer base and they are demanding connected services from us. That is why we are the first car manufacturer in the world to integrate Shazam into our vehicles. It also the reason why last year we were the

first European car brand to add Amazon Alexa into our cars. We want to give our drivers simple and personalized experiences in our cars. Demand for connected car services is growing all the time and we aim to be the leaders in this market. There will be plenty more to come, so watch this space.

**“These are the most challenging and exciting times in the history of the car industry.”**

Dr. Matthias Rabe, EVP Research and Development, SEAT

#### Can you tell us more about XMOBA?

XMOBA is our independent holding company for mobility services. One of the first steps we took was to move our Respiro acquisition under the XMOBA umbrella. Respiro lets people in Madrid rent cars by the hour. We are going to expand Respiro to new cities and further develop the service. Our aim is to be leaders in car sharing and connected payment services, and XMOBA will help us achieve this leadership.

#### What are SEAT's main competitive advantages when it comes to developing these new services?

We have a fast-moving, non-hierarchical organization and a team full of people who are passionate about what they do. It is an exciting place to be. As I said,

#### What do you think urban mobility will look like in the future?

If you combine electrification, self-driving autonomous vehicles and connected services, then it is easy to imagine that in 10 years' time there may be a self-driving,



we are going through a period of great disruption and no one can be exactly sure what is coming around the corner. That is a massive change for the auto industry from just 10 or 15 years ago. But the most important thing is that at SEAT, we have people who are creative and skilled and who are ready to grow with the challenge.

on-demand mobile taxi service in Barcelona. There will be many technical challenges and barriers to overcome, but that is the vision we are moving toward. Our job at SEAT is to be open to these possibilities and to do what we can to make this vision a reality. ■

PHOTO: The CUPRA e-Racer

## ROAD MAP TO THE FUTURE

Since its launch in 2010, the Nissan LEAF has become the most popular electric vehicle in the world, with more than 300,000 models sold. But the electric power train is not the only mechanism that has turned



The Nissan IMx concept car

the car into a 21st century icon: in the updated version of the LEAF launched in 2017, Nissan introduced its ProPILOT system, a sophisticated autonomous driving technology that automatically controls the distance to the vehicle in front.

ProPILOT represents the latest staging post on Nissan's journey to a fully autonomous future.

At the end of last year, Nissan demonstrated a prototype system that uses input from 12 sonars, 12 cameras, nine

millimeter-wave radars, six laser scanners and a high-definition map to analyze complex scenarios in real time and navigate vehicles through challenging city conditions. Nissan plans to implement the technology on public roads in Tokyo by 2020.

“We are rolling out autonomous driving technology through a careful step-by-step approach,” says José Muñoz, the company's chief performance officer. “Nissan is putting the building blocks in place to first build customer trust and then increase acceptance of the technology.” ■

## A STAR IS BORN

The Nürburgring racetrack in the woods of western Germany has inspired fear and trepidation in even the most seasoned Formula 1 drivers, with sections of the infamous Nordschleife including gradients of up to 17%. So the nervousness was understandable when Albert Biermann, Kia's head of vehicle test and high-performance development, turned up to watch the Stinger, the very first sports car made by Kia Motors, take on the legendary track for the first time.

In the event, there was no reason to worry. The Stinger completed the course without incident and came back for a second, even faster run a couple of months later.

**“The Stinger has unique balance of style, emotion and driving performance.”**

Albert Biermann, Head of Vehicle Test & High-Performance Development, Kia

“The Nürburgring is the most challenging racetrack but also the best test track, especially when it comes to a high-speed GT like the Stinger,” Biermann states. “Testing the Stinger on the high-speed

corners on the Nordschleife was just too much fun.”

Fun is at the heart of the vision behind the Stinger, which has been heralded as Car of the Year



Albert Biermann with the Stinger

by numerous motoring journalists since its debut in 2017. With a combination of cutting-edge technologies, eye-catching design and exhilarating handling, Kia's first foray into the premium segment has transformed the company's brand. “Our mission for the Stinger was always clear,” Biermann says. “The car had to drive as good as it looked, and it had to be an important brand shaper for Kia as we took on established premium brands. It is a very competitive market, so we had to do something special.”

And special it is. In terms of sheer performance, the Stinger outperforms nearly all its rivals:

the GT V6 version is powered by a 3.3 bi-Turbo V6 engine, which delivers 370 hp and goes from 0 to 100 kph in 4.9 seconds, with a top speed of 270 kph.

But the secret behind the success of the Stinger, and what differentiates it from other brands, is not its technical specifications but the driving experience. A unique low seating position lets drivers feel the full power of the Stinger's engine, while a long and balanced wheelbase enhances stability at high speeds and enables the ultimate thrill of secure drifting.

“It is the Stinger's precision, agility and controllability, even when approaching the limits, that makes it so much fun to drive,” Biermann says. “It is changing the way customers perceive all Kia vehicles.” ■



## THE HUMAN TOUCH

Technology is moving faster than ever, radically changing everyday life and bringing us closer to a fully digitalized world, which has big data at its core. The opportunities of this fast-moving transformation are nearly limitless for companies, which must constantly adapt their strategies and operations to reap the benefits of the digital revolution.

In an increasingly digitalized world, data have become a source of huge strategic and economic value and a key driver of growth. Data-driven companies are able to harness new sources of revenues and unlock new business models, allowing them to lead the change and stay competitive. However, to fully leverage these opportunities, data must be put into context and analyzed, and thus remain connected to the real world and real customer needs.

No value can be extracted from data without a complete knowledge of the human element behind it, and data processing cannot be successful without a clear and thought-out strategy. In a data-driven world, companies that want to set the pace rather than just keep up must build their strategy and business model around the understanding of data that digitalization gives them access to, connecting data with concrete corporate objectives and customer needs.

Without the human touch, no big data is smart enough. ■

**Ernesto Ciorra**  
Chief Innovability Officer,  
Enel Group

## BOOSTING PRODUCTIVITY IN THE WORKPLACE

It is one of the ironies of modern life that while new technologies may have transformed the way we talk to each other, shop and spend our leisure time, many workplaces today look much the same as they did 20 years ago, with all the same inefficiencies and frustrations of the past. While we can order a meal or a cab ride with the touch of a button, communicating with the internal helpdesk is rarely a straightforward experience.

Some progressive companies are now looking at the freedom and creativity of consumer IT for inspiration, as they reinvent the way they work and increase the productivity of their people. Crucially, these companies are moving their core systems away from their own clunky infrastructure and onto the Cloud, allowing authenticated users to access company services wherever

“Citrix enables secure access to any application on any device from any network.”

Christian Reilly,  
CTO, Citrix

they are. “The days of enterprise IT telling employees what they can and cannot do with their devices are over,” says Christian Reilly, CTO at Citrix, which specializes in software for the digital workplace. “The simplicity of consumer IT has been the biggest driver of its success—think of how easy it is to access Amazon from any device and buy whatever you like. That revolution is now coming to the workplace, empowering employees and taking productivity to a whole new level.”

### How are companies learning from the success of consumer IT?

They are all aiming for a similar level of simplicity. Most consumer applications, devices



A secure digital workspace increases productivity

and environments are not as complicated as traditional enterprise IT. Services such as Amazon are naturally intuitive. It is like a phone: it just works. That is the antithesis of traditional enterprise IT, where applications and systems were difficult to use and required a lot of expertise.

### What impact will this new approach have on productivity?

To a large degree, simplicity equals productivity and increased efficiency. The technology behind the scenes may be complex, but the way it is presented to the end user has to be very simple. For employees to be more productive, what is needed is a combination of back-end systems which can understand who they are, what device they are using, where they are and what they are trying to do at a certain time. This is sophisticated technology, but the simpler it is for end users then the more pervasive it becomes, and the more pervasive it becomes, the better it is for productivity.

### What are the implications of the new model for security?

Many organizations today are using the so-called Hybrid Cloud approach, accessing different IT services from different Cloud providers, plus continuing to operate some on-premises infrastructure. The challenge is to create a secure

digital perimeter around all those services and the devices used to connect to them, while giving end users a simple and unified experience. This is what we do with Citrix Secure Digital Workspace. It is predicated upon four key things: the identity of the person, their location, the device they are using and what they are trying to do at the time. We analyze data from how users work to make sure you can access your company's systems, whether you are in sales working on a desktop at headquarters or a maintenance worker on an iPad. Using the Secure Digital Workspace to access all these different services, a business can be more productive and more secure.

### What is the role of AI in enabling the new workplace?

Machine learning, which is part of AI, helps construct models of what people do by creating a pattern of their everyday activities, which is obviously important for security reasons, as it means we can spot any anomalies. But it is also

important for productivity reasons. For example, companies could use machine learning to build models of how their employees behave in different contexts, understand what they need to perform better, and give them the information they need to be more productive. There is huge potential.

### How do you think new technologies will shape the future of work?

With Siri, Cortana, Bixby, Google Assistant and Amazon Echo, we are seeing the next generation of the human-computer interface, based on voice recognition and natural language processing. The era of the keyboard and mouse could be coming to an end. We could also see the end of traditional approaches to customer service by eliminating the call center altogether. People



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may not realize they are talking to an automated system. In the future, we might even be able to speak to enterprise data directly rather than having to fill in forms or write complex reports. There is massive potential for productivity. These are technologies of immense power. ■

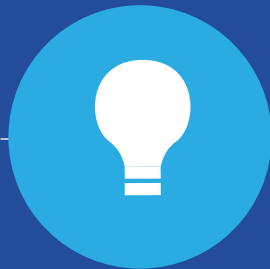


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Obtaining commercial licenses to start a new business



# SMART DUBAI

## BLOCKCHAIN CAPITAL OF THE WORLD

While other countries are struggling to come to terms with the possibilities of blockchain, in Dubai the technology is already a reality that is starting to make a concrete difference in the lives of ordinary people.

"We believe that blockchain holds the key to Dubai's vision of becoming the smartest and happiest city in the world," says Dr. Aisha bin Bishr, director general of the Smart Dubai Office. The SDO is leading the Dubai Blockchain Strategy, which aims to make Dubai home to the world's first blockchain-powered government by 2020. The strategy is based on three pillars: enhancing government efficiency, supporting the creation of new businesses



Dubai is a center for technological innovation

As a recognized international thought leader in the space, the emirate will welcome the Future Blockchain Summit this May, with the Smart Dubai Office as host. At the summit, Dubai will be showcasing the progress in the implementation of its blockchain strategy and sharing what it has learned with cities and companies from around the world.

"We are seeing high levels of interest from the international community, from countries like Singapore, Egypt, Saudi Arabia, in our data strategy and our use of blockchain," says Wesam Lootah, CEO of Smart Dubai Government. "We also work closely with major companies such as IBM and ConsenSys, while many blockchain startups are setting up base in Dubai to benefit from our support and growing ecosystem."

In 2017, the Smart Dubai Office organized a global Blockchain Challenge for startups from around the world. More than 3,000 entrepreneurs applied for the competition. Of a short list of 100, 21 startups from 19 cities were selected to visit Dubai.

Zeina Al Kaissi, head of emerging technology and global partnerships at the Smart Dubai Office.

As the technology gains traction, the goal is for Dubai to become a completely paperless government in all areas of life, from visa applications to license renewals, by the end of 2021. "As well as increasing the transparency and efficiency of government services, there will be massive financial

**Blockchain will revolutionize everyday experiences, making our lives more seamless, efficient, safe and personalized."**

Dr. Aisha bin Bishr, Director General, Smart Dubai Office

and environmental savings from removing the need to print one billion pieces of paper every year," Lootah says.



In the health care sector, hospitals and doctors are working to put e-prescriptions on the blockchain. "Anytime you are prescribed a medication across different clinics or hospitals, it will be in a distributed ledger accessible by your physician," explains

Smart Dubai has also developed compelling use cases for blockchain in strategic sectors such as energy, media, and education. "We need to mobilize people to act," Al Kaissi says. "And in order for them to act, they need to dream with you."



AFTER THE DIGITAL GOLD RUSH

We’ve all heard of the new digital gold mines, where computing power is used to produce cryptocurrencies like Bitcoin and Ethereum. But the significance of the underlying technology—blockchain—extends far beyond mining and minting new forms of money. For businesses of all kinds, this new transaction-verification mechanism promises to transform a broad array of transactions and interactions.

The premise of blockchain is simple: a globally decentralized database is used to create and manage an immutable log of sensitive transaction activity. Once a record is created, it can’t be changed without leaving evidence of the change. That makes fraud virtually impossible, and allows the parties in a transaction, contract or process to track every step of its execution with complete certainty.

Don’t be distracted by the erratic swings of cryptocurrency valuations. While speculators trade digital gold, enterprises are putting blockchain to work in areas from health care to real estate to identity management. Take supply chain management, for example. Fed up with mislabeled sushi? Now each fish can be accurately tracked from the sea to the dinner plate, bringing transparency and trust to a formerly opaque industry.

You should expect to start seeing blockchain anywhere business-to-business or business-to-consumer processes need to be streamlined, validated, secured and guaranteed. These are still early days, but the strategic opportunities and disruptive business models sparked by this transformative technology are too rich to ignore.

Christian Reilly  
CTO, Citrix

FLYING THE FLAG FOR ETHEREUM

While Dubai is experimenting with a variety of different blockchain-based technologies, one platform in particular is establishing a significant position in the city: Ethereum.

ConsenSys, the Brooklyn-based startup that is one of the main driving forces behind the open-source platform, is working closely with the Smart Dubai Office as a blockchain adviser. Last year it opened a 25-person office in the Dubai Design District (D3).

TAKING THE LEAD IN BLOCKCHAIN

Financial institutions in Dubai are among the first banks in the world to explore the potential of blockchain to improve the security and efficiency of their services.

One of Dubai’s leading banks, Emirates NBD is working closely with its partners on a range of commercial applications of blockchain. “While the technology is at an early stage of adoption, the momentum has increased, and we are developing several applications with potential quantitative and qualitative benefits,” says group COO Abdulla Qassem. “We think that blockchain has the potential to be a game changer in creating a secure, scalable, cost-effective and

“We are pioneering digital innovation in banking and payments in the UAE.”  
Abdulla Qassem,  
Group COO,  
Emirates NBD

time-efficient digital infrastructure for government and businesses.”

One of the most extensive projects in which the bank is involved is the use of blockchain

“Dubai is truly key for ConsenSys, not only regionally but globally,” says Lina Hediah, the company’s executive director for the Middle East and North Africa. “Dubai is embracing the opportunities of blockchain to reinvent processes and create a truly frictionless society.”

As a founding member of the Enterprise Ethereum Alliance, the company is focused on raising awareness of Ethereum in Dubai and accelerating its adoption. Hediah says the growth of the Ethereum community in the city has exceeded all expectations, in both the public and private sectors. ConsenSys has

for fraud detection. The bank is integrating the technology to strengthen controls over checks and ensure authenticity. In the future, it may be possible for the bank to validate each check at



Emirates NBD Bank is leading the Internet of Transactions

the source, thanks to blockchain authentication using QR codes.

In the payments area, Emirates NBD has successfully completed a proof-of-concept blockchain network for international remittances and trade finance. In preparation for taking the project into the mainstream, the bank has recently launched the second, updated edition of the initiative, which will test the operation of the platform at scale and add further benefits to businesses, such as real-time reconciliation.

Qassem says the bank is not underestimating the technical challenges of scaling blockchain or the business challenges of creating the wide ecosystem each

teamed up with Microsoft and local telecom company Du to launch a blockchain platform in the emirate,

“Dubai aims to be the world’s first blockchain-powered city.”  
Lina Hediah,  
Executive Director,  
Middle East and North Africa,  
ConsenSys

on which any government entity will be able to develop new services. “We believe that Dubai is going to be a global center for the monetization of the blockchain,” Hediah says.

blockchain platform will require to be successful. “For example, the best use case for blockchain would be in trade finance, but it is a tough task to bring all stakeholders like banks, customs, ports, insurance

agents and shipping agents to work together,” Qassem notes. “This will take time, and will be possible only when blockchain evolves and internalizes to be the new Internet of Transactions.”

“With our experimentation, we have come to realize that the technology only makes up for 20% of the solution. The governance framework, regulatory environment, and alignment of all the participating entities on the approach, processes and policies represent the bigger task.”

Dubai’s extensive networks of partners across the private and public sectors make it the ideal place to take on this challenge of bringing blockchain into the mainstream.

BLOCKCHAIN SET TO REVOLUTIONIZE RETAIL

For traditional retailers facing increased competition from e-commerce, digital technology offers the opportunity to fight back by giving customers unique personalized experiences that they cannot find online.

In 2017, Majid Al Futtaim, one of the leading retailers and operators of shopping malls and hotels in Dubai and the Middle East, opened its own School of Analytics and Technology to help it understand and predict customers’ changing needs and improve their experiences.



The Majid Al Futtaim Mall of the Emirates in Dubai

It also signed an memorandum of understanding (MoU) with Smart Dubai under which it will explore opportunities in emerging technologies such as blockchain.

“Digital innovation is of strategic importance to us,” says Alain Bejjani, CEO of Majid Al Futtaim Holding. “Today, we are transitioning from

a brick-and-mortar business into a technology-fueled enterprise, in a way that keeps the customer at the heart of everything we do.”

Bejjani foresees a myriad of applications for blockchain in the industries where Majid Al Futtaim operates. In the hotel sector, blockchain can make it

easier for travelers to collect loyalty points and benefit from rewards. Customers in cafés and restaurants will be able to see where the food they are ordering came from and whether it was grown sustainably. And in the retail sector, blockchain will create a more transparent supply chain, reducing counterfeit goods, enabling product traceability and improving customer trust. Blockchain will also make it easier to manage product warranties digitally.

“The bottom line is that consumers will have more choices and control than ever before,” Bejjani says.

CLICK ‘N’ BUY REAL ESTATE

Without the work of land registries, many of the legal and financial transactions that underpin modern economies would grind to a halt. Leading the way in reforming age-old processes is Dubai Land Department (DLD), the land registry of Dubai. DLD is using blockchain to transform the way in which people buy, sell and lease real estate in the emirate.

Why is DLD interested in blockchain, and how are you using it at the moment?

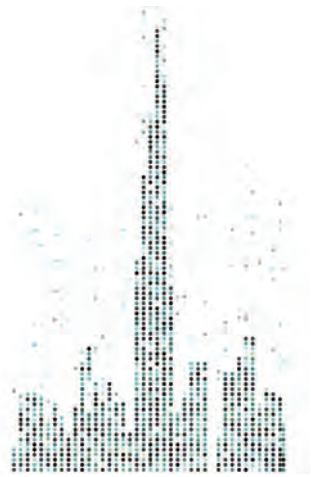
We think that blockchain can help secure ownership rights, increase transparency and speed up transaction processes across the whole real estate market.

Our first step was to create a blockchain platform for recording title deeds. This blockchain system now consists of over 500,000 title deeds and more than 1.5 million smart contracts. Information related to ownership, the owners and the property is also stored on the blockchain. The title-deed blockchain platform became active in October 2017, and we

are currently using it to write 250 to 300 title deeds every day.

What are the next steps?

Our platform and our data are going to be accessible to multiple partners in the real estate community in Dubai, including property developers, managers, banks and brokers. In the next couple of years, we are going to migrate more than 300 procedures to blockchain, including processes for sales and mortgages and for merging and splitting up properties. Each transaction will write a new permanent record on the blockchain platform. For



instance, banks will be able to issue mortgages using blockchain without needing to go to DLD, a registration office or a notary public to register the mortgage contract.

“We will use blockchain to enable the completely transparent and authenticated transfer of property in Dubai.”

H.E. Sultan Butti bin Mejren,  
Director General,  
Dubai Land Department

What impact will blockchain have on the local property market?

The use of blockchain solutions to authenticate transactions will eliminate paper documentation from the market and remove the need for many manual processes. It will make the market more efficient. We will also introduce a common listing platform for people to see vacant units to buy or lease in Dubai. People will conduct a property transfer online and register the rental contract using blockchain. A renter will be able to use the platform to register

smart contracts with landlords, property managers and electricity and water suppliers in just a few minutes.



How do you think this initiative will help make Dubai a smarter and happier city?

Before blockchain, people had to go to different places and use different parties to complete an authenticated real estate transaction. Now they will be able to do it all in one place, online and in just a few minutes. They could even furnish their apartments online using blockchain and augmented reality. Our blockchain strategy is all about adding value to people’s lives and making Dubai the happiest city on earth.



## GAME CHANGERS COME TO DUBAI

Dubai's global leadership in blockchain extends well beyond rolling out the technology in government services. The Smart Dubai Office (SDO) is also supporting blockchain innovation around the world, giving startups on the cutting edge the chance to pilot and implement their projects in Dubai.

The SDO's flagship initiative for startups is the global Blockchain Challenge, which is pushing the boundaries of what is possible with blockchain. In 2017, Sun Exchange from South Africa was awarded first place in the competition, winning \$20,000.

As its name suggests, Sun Exchange is rolling out a business model that allows people to own solar power assets remotely, receiving their rental income securely thanks to blockchain. In Dubai, Sun Exchange has begun

working with the Dubai Solar Schools organization to provide solar power in schools and universities across the emirate, at no up-front cost to the institutions. As in South Africa, individuals buy the solar panels and then lease them to Sun Exchange, which then pays back the individuals based on the electric production of their

**“Blockchain will revolutionize how we issue, manage and share digital records.”**

Mark Balovnev,  
CEO, Educhain

solar panels. “With blockchain, we are able to increase the accessibility and inclusivity of solar ownership,” says founder and CEO Abraham Cambridge. “We are making solar mainstream.”

Runner-up Educhain is also focused on Dubai's education sector. At the end of 2017, the startup launched the world's largest



Sun Exchange uses blockchain technology

pilot of blockchain technology in education, covering more than 400,000 students from primary schools to graduate institutions. The project will use Educhain's blockchain records platform to make it easy for students to exchange their academic records digitally and securely when transferring schools or applying to universities and for jobs. “We are proud to launch this global pilot as one of the first practical implementations of blockchain technology,” says Mark Balovnev, CEO of Educhain. “We aim to use Dubai as our launchpad for expansion into the wider region.”

Produced by



www.thebuzzbusiness.com

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**Dubai Real-estate Blockchain, solution to enable Real-estate transactions and related services via Blockchain technology**



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