

# Designing Technology for a Better Future

**NOON SALIH:** Since the very beginning, World Expos have been both markers and interpreters of history.

In 1876, when typewriters were just beginning to enter commercial production, a standardized QWERTY keyboard was unveiled at the Philadelphia World's Fair.

In the 1980s, when it was clear that computer technology was going to start playing a more important role in our lives, the United States pavilion premiered an early touchscreen at the Knoxville Expo.

But there have been missed opportunities too. An early machine that could turn solar energy into electricity was debuted at the World Expo in Paris as far back as 1878, but was ignored for fear of disrupting the status quo - fossil fuels were more efficient and less expensive.

Now, in an era where it's more important than ever to leverage technology to our advantage - and to not miss opportunities when we're given them - Expo 2020 Dubai is tackling some of the questions surrounding how we actually do that.

**MOHAMMED AL HASHMI:** Innovation is all about transformation and using technologies.

**NOON SALIH:** This is Expo 2020 Dubai's Chief Technology Officer Mohammed Al Hashmi.

**MOHAMMED AL HASHMI:** It's properly using technology to better serve humans. For us to have a better life and for our kids to have a better future. Technology dictates our life and we should utilize technology more to have a better life, instead of dictating how we live.

**IMAN AL-OMRANI:** If you look at technology today, it's, you know, growing exponentially at the end of the day. So there's no way you can ignore what has taken place over the years. You can only improve on it, you can only evolve, and this evolution is actually innovation at the end of the day.

**NOON SALIH:** This is Iman Al-Omrani, Deputy Chief Technology Officer at Expo 2020.

**IMAN AL-OMRANI:** Technology may have been there, it's just how you use it and how you put it together. Like, you know, those Lego pieces and you create something that's completely different. Something that is innovative at the end of the day, you know? Like one piece of Lego is one piece of Lego, but you, you create a castle out of it. Then you got yourself a castle.

**NOON SALIH:** Today, we're looking at the huge role technology has played in Expos past - and how Expo 2020 Dubai is showcasing some of the innovations that might just be our future.

I'm Noon Salih and this is Inside Expo, an official podcast of Expo 2020 Dubai, where history is being made.

**[INTRO STING]**

**NOON SALIH:** As I said a moment ago, since the beginning, Expos have been about showcasing the world's newest technologies and inventions. But they've also been

about presenting them in a way that helps audiences understand what role they're going to play in their future.

**FEDERICA BUSA:** If you look at the industrial revolution and every new technology, we're all scared, right?

**NOON SALIH :** This is Dr. Federica Busa, Senior Vice President of Visitor Experience at Expo 2020 Dubai. She helped come up with Expo's three core themes: sustainability, mobility, and opportunity.

She also wrote a research paper on Expos in which she wrote, "Expos are both makers and interpreters of history. They mark moments in time when humanity pauses to reflect and react to great changes." And it's been that way since steam trains were on display, way back at the London Expo of 1851.

**FEDERICA BUSA:** And at that point we're probably these trains that were crossing the countryside of the United Kingdom and, what are these beasts, right? Made of steel and steam that are cutting across our fields and our forests? And so the Expo was there on the one hand to show with great deal of pride, what was achieved by innovation and to try and explain it to the general public. So it's a big steam engines, but also all of the other technologies that we have seen for the first time, right? That's become a part of our daily life.

**FEDERICA BUSA:** Whether it's a telephone, it's a television...The camera...The mobile phones.

**NOON SALIH:** One of the more memorable moments in Expo history was the Futurama exhibit at the New York World's Fair in 1939. Which presented a possible model of the world 20 years into the future.

**FEDERICA BUSA:** You know, Futurama, which is this large scale model of the futuristic city with the skyscrapers, with the big highway, with a car, which actually becomes a blueprint of many of the cities we're living in today. It's also the place where we see one of the first robots.

**FEDERICA BUSA:** And he knows how to count to three and says, my brain is bigger than yours. And it's a massive gigantic robot. It's still very much the world of tomorrow. And it's this very, very optimistic view of the future and everything that technology can do for us.

**NOON SALIH:** But by 1958, that optimism about the future of technology had turned into something... a little more cautious.

**FEDERICA BUSA:** Brussels 1958, that it becomes the time where, you know, humanity is actually pondering on the use of technology because that's the aftermath of the atomic bomb.

### ARCHIVE RECORDING

Central landmark of the fair was the huge Atomium, with its 9 spheres glinting in the sun. A visual representation of the exposition's theme: a more human world in the coming age of the atom.

#### **Back to the interview with Federica Busa:**

**FEDERICA BUSA:** And saying, how can we have this amazing outcomes of science, but being put to use for the benefit of humanity? Almost a much more introspective theme or aspiration, right? When it says a worldview, a new humanism, you know, it's for a more human world, right? Where we, now we see potentially the power of our creations, right? The power of our technology and started to say, how do we deploy that power for the good of humanity?

### **ARCHIVE RECORDING**

Here in the world's second largest French speaking city, there's a true Parisian flavor when coffee and croissants are served up in pavement cafés.

#### **Back to the interview with Federica Busa:**

**FEDERICA BUSA:** But then even in Montreal, it is continuing to, to build on how do we reflect upon technology for the benefit of humanity?

### **ARCHIVE RECORDING**

Here's the whole world in colourful miniature. All the pavilions have exciting differences, but overall there's exciting oneness - a common denominator that's human, and welcoming.

#### **Back to the interview with Federica Busa:**

**FEDERICA BUSA:** And Montreal is really about our habitats and the whole notion of spaceship Earth, is actually inviting humanity to think about living within the capacity of a planet with finite resources.

What is the shift in in Dubai? The Dubai story is one that provides this multiplier effect by virtue of the connectivity that it enables across the world. So even the theme of 'Connecting Minds, Creating the Future', it becomes less about the what. So it's no longer this big global agenda of, we know that there's a problem with the environment. We know there is a problem with poverty. We know the problem with disparities.

But what we seem to need is how do we make progress? And what are the mechanisms and processes? So 'Connecting Minds, Creating the Future' is starting to make us think about the, how, right? So it was not just focusing on one problem in a silo, but how do we connect? How do we leverage networks to really try and solve the problem? And that where it kind of turns things on its head.

**NOON SALIH:** Federica told us that one of the ways it does that is with the Expo Live programme, which provides funding to organisations coming up with novel and innovative solutions that make the world a better place.

And technology is intrinsically tied to that - for example, there are the apps that are helping democratise mental health support in the Middle East. Or the organisation that helps farmers achieve fairer pay using specially built smartphones.

**FEDERICA BUSA:** I would say that more and more, I mean, we are in the era of exponential technologies, right? Where changes are happening incredibly fast, not only in one discipline, but across disciplines, and technology is becoming not only faster, more complex and incredibly impactful on our life and our future.

And I think this is where as individuals we have a voice, but with that voice comes more responsibility. We have the responsibility of being informed, of being educated, of knowing what the impact of of technology in our future is.

Technology today requires a great deal of understanding at all levels of society. And we really can't afford to be in some sense, ignorant about the science behind the technology, whether as citizens that we make decisions for ourselves and our families or the policy makers that are making decisions for the country.

So the whole ethos of Expo to come back to the very beginning is that in the BIE declaration, the definition of Expo is to show prospects for the future. Our visitors are not consumers. They're not customers of Expos. They are future discerning

citizens or discerning citizens of today that actually understand how technology and innovation can shape the future in society.

## MUSIC

**NOON SALIH:** To hear more about some of the ways Expo 2020 Dubai is implementing new technologies across the site and beyond, we sat down with Chief Technology Officer Mohammed Al Hashmi, and Deputy Chief Technology Officer, Iman Alomrani.

They both helped build a plan to integrate some of the world's cutting edge technology into the Expo 2020 masterplan. Some of it is obvious to visitors - like the robots who offer directions or encourage social distancing. But a lot of it isn't - and that's by design.

**IMAN AL-OMRANI:** Technology is there, it's invisible in some cases, you cannot see it. The visitor cannot see it, but it's actually enabling the operations to make sure that every visitor enjoys Expo and makes all these lovely memories.

NOON SALIH: For example, around the site there is an extensive network of nearly 200,000 sensors which are used to optimise the consumption of utilities – like electricity, lighting, water and air conditioning – in 130 buildings. These sensors help Expo achieve its goal of becoming the most sustainable Expo yet, but what's connecting them? It's a system called MindSphere, which was implemented in collaboration with Expo's premier partner for Infrastructure Digitalizations, Siemens. Siemens's history at World Expos goes all the way back to the very first one, held in London in 1851. Since then, the tech giant has displayed its tech at 11 different World Expos and held its own exhibition at 5 more, including Expo 2020 Dubai where the MindSphere is a key aspect of day-to-day operations.

**IMAN AL-OMRANI:** These sensors would tell us within the MindSphere platform, how are we doing when it comes to, you know energy utilization or water utilization? And that's something that sometimes helps us humans think, are we wasting too much? In a world such as today where we need to be extremely sustainable, these are some of the things that we do need to make sure that we remain environmentally friendly.

And Siemens offers this great example of this invisible technology and the MindSphere system allows us to ensure that Expo remains to be sustainable, efficient, and safe, and actually it creates the foundation of a smart city, at the end of the day.

**NOON SALIH:** Smart cities - cities where the infrastructure itself is communicating the city's needs with humans. It is also self-dependent and in tune with the need for sustainable living.

**IMAN AL-OMRANI:** With the data that you have, you can go and you can create all of these trends and you can find out, okay, where are the points - where are the pain points? Where are the things that we can do from a technology point of view as well to improve sustainability, right? What else can we do? What else can we do about our carbon footprint?

If we see it in front of us, if it is more apparent that this is what you are doing, you're killing off so many trees and so many rainforests, then you're going to think twice and say, okay, I don't like these numbers. What is it that we can do to change these numbers? And it's, what is it that we can do with technology at the end of the day, right? So it's a window, it's a window of opportunity that tells you, okay, this is what you're doing. Are you okay with it? Or is this going to help you decide differently how you want to live your life beyond today?



## MUSIC

**NOON SALIH:** Another one of Expo 2020 Dubai's key innovations is the Virtual Expo, [virtualexpodubai.com](http://virtualexpodubai.com). While having a virtual component was always part of the Expo's vision, it became even more important in light of the COVID-19 pandemic.

**MOHAMMED AL HASHMI:** One more innovation that I would love to mention at this stage, which is our virtual and augmented reality offering that we have, that is something that is unique and if people visit [virtualexpodubai.com](http://virtualexpodubai.com), that's a place to visit regardless if you are in Dubai, regardless if you are in the site or you're anywhere around the world. It gives you an opportunity to see what's happening. But at the same time, it shows people from all around the world what Expo looks like.

They can be proud of their own pavilions. They can see how their pavilion looks like, they can go inside the pavilion. They get information and content about their own pavilions.

**IMAN AL-OMRANI:** You know, we're setting the scene now for all future Expos to must have this Virtual Expo component as part of their offerings. I don't think any future Expo can exist without the Virtual Expo component.

And at the end of the day, we're providing this offering not only to a single audience, but to all the different ages, to all different genres of content. And we've got a little bit of everything over here in Expo. And if you don't have the time or if you can't come to it, this is a magnet, like Virtual Expo is that magnet for you to just go dive in, whichever content that you want it's there.

**NOON SALIH:** So that's the virtual side. On the ground, the Expo site is fully 5G enabled, which is around 100 times faster than the current standard 4G.

**MOHAMMED AL HASHMI:** We were the first commercial entity to have 5G enabled - this was before COVID even - in the Middle East, North Africa, South Asia. And the infrastructure, as I said, we did not do an infrastructure just for the six months. We did an infrastructure that can last for many years to come when it comes to application as well, District 2020 can utilize.

## MUSIC

**NOON SALIH:** It takes a village to pull off technological innovation at this scale, from the Expo's team on the ground, to the thousands of participants who help Expo deliver on its vision, to the Expo's various premier partners. But something Mohammed wanted to stress is that, these technological innovations are only good if they serve to make our lives better. And that's the bigger goal behind all of this.

**MOHAMMED AL HASHMI:** So, yes, we are leaving legacies, but not only from infrastructure and technology, but the biggest legacy that we are leaving behind are the people. The people who learned so much the experience of walking Expo it's so unique. I haven't seen anything. I haven't experienced anything - a year in Expo is like 10 outside and imagine that it's like people coming from all around the world with different experiences, with different backgrounds, with different education background and different personalities as well. So what we have learned, it's amazing. So people are our main legacies that we're going to - they're going to take this wealth of knowledge and wealth of experience with them.

**IMAN AL-OMRANI:** Of course. I think that's the greatest legacy that we've got. It's the human aspect, right? It's what we all did not only as individuals, but as teams. And we call ourselves a tribe for a reason, right? We've all worked together and we have created something out of all this technology. We have created something

that we can display to the world. If there is any legacy that's more important. It's actually the people behind Expo 2020.

We've come such a long way, we've learnt so much across the years in delivering an Expo that hopefully will always be remembered as an exceptional Expo or as an exceptional World Expo.

The legacy is there. The people are there. I think everybody that has gone through Expo is going to come out a completely different person. We hope that we have inspired the next Expos to raise the bar, because we live in a different world today - the whole definition of a World Expo, if anything changed with Expo 2020, with the pandemic - it has changed the definition of a World Expo. And I just hope that whatever it is that we move forward with it is taken as a new baseline for World Expos.

## MUSIC

**MOHAMMED AL HASHMI:** I want to end this by saying thank you to everyone who has contributed, really. Thank you for those who helped us, everyone in this nation had a role and had a part to make this possible. We all got excited in 2013 and it became a reality only with hard work with, we put our minds and hearts into this. And every human being in this country contributed and we raise our hats to them.

So I urge everyone around the world from all the four corners of the globe: do visit Expo 2020, because you're going to be excited, you're going to be thrilled, you're going to be dazzled, you're going to, you're going to see memories or you're going to create your own memories that you're going to take with you when you're going to share it. And you're going to keep it with you and you gonna pass it along to families and friends and generations ahead, and you're going to be so proud by saying I have been in Dubai Expo 2020.

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**NOON SALIH:** Inside Expo takes you behind the scenes at Expo 2020 Dubai, sharing our stories and others across the 170-year history of this global event. Learn more by visiting [VirtualExpoDubai.com](https://VirtualExpoDubai.com).

Inside Expo is produced by Kerning Cultures Network.

We release episodes every Tuesday and Friday. We're going to be exploring the technological innovations on display at Expo 2020 much more in future episodes, so subscribe to the show on your favorite podcast app so you don't miss an episode. And if you enjoyed listening to this episode, share it with your friends and leave us a review!