**Sandra Peter - Six megatrends that will shape the future of business**

>> Welcome to the podcast series of "Raising the Bar Sydney". "Raising the Bar in 2017" saw 20 University of Sydney academics take their research out of the lecture theatre and into bars across Sydney, all on one night. In this podcast you'll hear Sandra Peters' talk, "Six Megatrends That Will Shape the Future of Business". Enjoy the talk.

[ Applause ]

>> Thank you so much. Six megatrends for the future of business. Imagine Sydney, it's 1894. We're on George Street just outside Town Hall. There are about 10,000 carriages that come in front of Town Hall. They're all drawn by horses. Some of them actually require two horses. So there are about 20,000 horses passing in front of Town Hall every single day. Now each one of these horses is eating five acres of land worth of food. Each one of these horses in turns makes eight to fifteen kilos of manure -- .

>> Shit.

>> Every day. Yes, shit. This was a problem for Sydney, an, "Oh, shit" problem. Let's move to London. We're in London. It's again 1894. In London there are 10,000 cabs that are driven by horses. Not only that, they have buses. Each one of those buses is driven by twelve horses. Each one of those horses makes between eight and fifteen of manure every day. This for London was a crisis. It was the great horse manure crisis of 1894. People were in disarray. This is the end of the world. This is a crisis. Do you know what? It wasn't. In about 20 years the shit had all but disappeared. It was gone. Even though the "Times" of London had warned us in 1894 that in a couple of years they will be eight, nine feet of shit on the streets of London. We will be buried in this stuff. It really wasn't the crisis. As Niels Bohr once said as a Nobel laureate in physics, "Prediction is very difficult especially about the future." So I won't do that today. I will not make predictions about the future. We are rubbish at predictions. I could say we're shit at making predictions. So let me not make that. I believe that we fundamentally need different ways to understand the future of business. I will talk about one of those ways today. Those are the six megatrends for the future of business. I want to talk about large influential forces that will shape the way we live, the way our organisations work, the way our society functions, and the way we do business. This idea of megatrends goes back to the 80's. There's this guy called John Naisbitt who wrote the book back in the 80's called, surprisingly, "Megatrends". And he said these are large, transformative forces with global reach, broad scope, and the fundamental and dramatic impact on our societies. Fantastic. The CSIRO a couple of years ago said, "These megatrends will throw companies, individuals, and societies into freefall." We at the University of Sydney Business School have identified six such megatrends. And I'm going to talk to you about those six megatrends. First one, shifting demographics. The fact that in 25 years there will be nine billion of us. And by 2050 there will be ten billion of us on this planet, a little bit over ten billion but we're in a bar so I'm going to round it down, ten billion. You said, "But, Sandra, you said you're not going to make predictions." This is not a prediction. We actually know this because it has already happened. As one of my favourite researchers, Hans Rosling, used to know, we know this because it's already happened about twenty years ago. Close to the year 2000, the number of children per woman has stopped growing at about two children per woman. The population growth has already stopped about twenty years ago. We are just waiting for those generations, under fifteen we have two billion people, to move through the society. So when people say, "We must stop population growth," we would actually have to kill these people because they are coming. We know this and this has already happened. By the way, we're in a bar so after this I can actually make a demonstration with a few schooners I can actually show you how we'll get to ten billion people. But so what? Well, I am concerned because these people have to pay my pensions. And we have an ageing population. Part of the fact that we're slowing down this population growth is that especially in the West we have an ageing population. We have now four people working for every single person who's going into retirement. We'll have about two of these people working. So how do we rethink the way we work, how to encourage women to join the workforce? How do we get people who are getting older to stay in the workforce? Do we encourage immigration to come in and help us out? We know this because it's already happened. We know that the population in Africa will all but double. Countries like Nigeria will have more people than the United States. And we know that countries like Japan, by 2050, the average age of a Japanese person will be a young 53. We know this. So where are all these people going to live. My second megatrend is rapid urbanisation. Two hundred years ago we had about two percent of people living in cities. Today it's more than half the people living in cities. We know this because it's already happening. About 85% of the world's GDP will be produced by cities. If you look today at the top 750 cities in the world, we're already making half of the world's GDP. So what? So infrastructure. If you look at Beijing, Shanghai, London, and New York alone, we will actually need about eight trillion dollars worth of infrastructure just to keep things going. And where will these cities be? In the developed world large cities are actually shrinking. If we look at countries like Germany or Italy, large cities are shrinking. These large cities will be in China, will be in Africa, in the developing parts of the world. And they will take three-quarters of the resources that the world uses up. So who's going to live in these cities? My third megatrend for the future of business is empower the individuals. We are witnessing the rise of the individual like never before. Why? Well, because we have iPhones. We have technology. We have connectivity. We have better healthcare than we've ever had. And we have better education, especially at the University of Sydney, than we've had before. What does that mean? Well, it means things like entrepreneurship. People are doing it not just out of necessity, but out of opportunity. It means that we have social platforms that have fundamentally changed the way we engage with knowledge. Wikipedia, thank you, Jimmy Wales. And thousands and hundreds of thousands of volunteers who contribute to this platform. We have fundamentally new ways to communicate. Think Facebook. Or to be employed, [Inaudible] and Uber. Or to finance new ventures, think Kickstarter. We can influence companies to some extent. We can influence companies in what they do. Samsung listens to consumers for the new phone. The last one was catching fire so that's not the big thing to listen to. But we can influence what shows we see on Netflix. You want more "House of Cards"? We will give you more "House of Cards". But this trend also has a very dark side. With empowered individuals and the rise of the individual, we also have disempowerment for the people who do not have access to ubiquitous technology and connectivity. We also have huge ethical and moral concerns that arise out of these platforms because I can be self-employed and I can go on these platforms and tune on and tune off whenever I want. But who will protect me when I'm sick or when I can't work anymore? Or when I'm not equally employed? What kind of jobs will be doing? Which brings me to my fourth megatrend and where many of these empowered individuals are. And this is the economic power shift. The rise of the developing world, places like China and India where we see huge rises in productivity associated with huge rises in population. Two-thirds of the middle class will live in the cities and we will see fundamentally different patterns of investment and of trade. One belt, one road, and the congress that is going on as we speak. But there is nuance in this megatrend. First part is think about things like commodity prices. They will influence the way this megatrend develops. And where there is globalisation there is also opposition. With new patterns of trade also comes opposition, trade protectionism, currency war, nationalism, Trump, Brexit, Catalonia, Italy, Transylvania. I'm not just speaking about this week. Brings me to my fifth megatrend for the future of business and that is resource security. And we all know that we are putting huge pressure on things like food, and water, and energy, and the climate. We know this but we also know that to feed the population that I just told you about we need to make 70% more food than we are making right now. We don't exactly know where to grow that where we're kind of using all the stuff that's left over from the horses to grow the food that we're eating now. So at the [inaudible] there are a few places we're looking at. Only in ten years, ten years, for places like Australia and we need 40% more water and 50% more energy to do what we're doing now. We haven't figured this one out yet. And when I think resource security, I also think rare metals. We're using stuff we've never used before, things that go mostly into solar power, into wind power, into the batteries in my phone and in your phones, into the tablets, into the energy cells, into electric vehicles, all these rare metals that I will not attempt to pronounce because this is being recorded.

[ Laughter ]

All those rare metals are in very few places around the world and are very scarce, places like Africa or Siberia. We're putting very limited resources and with the way we're going now, we cannot sustain the production of those new technologies that are supposed to save us. Which brings me to my last megatrend: Impact for technology. Historically we all know that technology is this really big thing that actually matters and changes all of our lives. So I also want to refer to someone from MIT, and this is Andrew McAfee. And he reminds us of very interesting thing, that if you look at the size of the world population or any measure of economic development, whether it's how long we live or how good our lives are, anything including the size of the world population, the only factor that has changed the world as we know it has been technology. We can pluck the world population and look at every big event we've had, whether that has been a war, the discovery of a new world, the plague, World War I, Jesus, Confucius, the Renaissance, none of these have made a dent in the world population or in any measure of social and economic development. What has made a right angle and for a little while things were growing exponentially has been technology, the Industrial Revolution, the steam engine, machine production, mass production, the assembly line. So we are again in an era where technology will make a difference.

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>> It took the telephone, you remember that telephone where we have to dial and then punch things in, it took the telephone 76 years to reach half of the U.S. population. It took the iPhone six years to do exactly the same. These things are moving at the very, very rapid pace and we are rubbish at making predictions about how this will impact our lives. We just don't know. But we know they are coming. Technologies are like 3D printing, 4D printing, maybe quantum computing, definitely machine learning, and automation are coming and changing the way we live and work. And, again, these are not predictions but we know they are fast and then we know they have unintended consequences on a range of industries. So six megatrends for the future of business. And there are many reasons to care about these megatrends. The way we will rethink healthcare with an ageing population. The way we will think about how we feed these people. The way we rethink employment. The way we rethink how we run our cities, whether we want smart cities or even smarter cities even though nobody actually knows what the smart city is. But we do want them smart. There are many reasons to care and I think you should. They're also global megatrends but they impact you locally. Most of you are on your phones or on Twitter talking about what's happening tonight. You might have come here in a Uber. Urbanisation, you might drive for an hour but still be living in Sydney. This hour you might actually make it in 45 minutes. And you're still living in Sydney. These have changed, these megatrends, the way you live and work already. But I think there is a more important lesson here than what we can drive straight from the megatrends. So let me take you back to the great horse manure crisis of 1897. Why? Well, the crisis was gone in all but 20 years. All the shit was gone from the streets. There were no more sparrow starvers down in front of Town Hall. They were taking the shit away quickly so that the ladies with long skirts could cross the road. Why? Why was this crisis where they said it's the end of the world, they tried to have a congress to think about it. They couldn't even fathom how to solve this. Was gone in 20 years. What happened? The car happened. The automobile came along. Karl Benz, we're talking great German people tonight. Karl Benz patented his motor waggon in 1887, and in 1894 at the height of the great horse manure crisis he produced his first car. And I want to make a footnote to history here because it was actually Bertha, Karl's wife, who had financed this fine enterprise of building an automobile. But because married women were not allowed to hold patents, the glory went to him. According to mother-in-law, she would have made all the money. So why is this the bigger lesson? Quite often this story of horse manure, and it's told often, the story of horse manure, most recently for economics. It's told as a tale of human ingenuity and inventiveness that will overcome everything and we'll be fine because we'll just have one brilliant idea. I think it misses the bigger story. We can understand the story of the horse manure crisis in the context of the underlying megatrends. What had happened by 1894 was that, since the 1800's, two percent of the population lived in cities. By 1894, it was fifteen percent of the world population living in cities. Places like London, London was the commercial capital of the world. The population had gone from one million people to six million people in London alone. Overall demographic shifts like we have now, the population on the globe has doubled from 1800 to 1894, from one billion to two billion people. We've had horses since the Romans. They didn't have a horse manure crisis. For most of history you actually had to pay money to take someone's manure because it was good fertiliser. But it was these megatrends that shape how those technologies came to be. So back in the day we actually found no big solution to the horse manure crisis. So unless we pay attention to the underlying megatrends it will be difficult to do that again. And we came up with an automobile that supposedly was a cure for pollution. There was pollution because of the horses so we invented something to save us from pollution. That didn't quite work out as we intended it. We have slightly more pollution now. We're also draining a lot of the resources. But we must go beyond the surface and not just look at events or outcomes, but look at the underlying forces that shape the way these technologies play out. So when you think artificial intelligence, when you think machine learning, think about the megatrends in which these will play out to understand how they will impact our society in fundamental ways. So I do believe we have to think differently about the future of business. And I think we should start with these six megatrends for the future of business. Thank you.

[ Applause ]

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