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Spotlight

Michio Kaku: "Being big does not guarantee success."

[Raquel Forster](#), Editor, Credit Suisse

14.04.2014 Physicist and futurist Dr. Michio Kaku spoke about the financial center of the future during a trip to the Forum for Swiss Trade and Investment in Zurich: Tougher competition and smart consumers are among the coming century's largest challenges.



Raquel Forster: Professor, you are not only researching a unified field theory and the theory of everything, but also issues relating to the future. Will we be surprised at the role of banks in the future?

Professor Michio Kaku: We're headed toward a new era of capitalism called "Perfect Capitalism" under which the consumer has infinite knowledge of a product, and the producer has perfect knowledge of the consumer. Therefore, the supply and demand curve becomes perfect. Ironically enough, it means that branding and image will be even more important. When the consumer knows everything about a product, he or she chooses based on familiarity, such as the brand. Switzerland is in an ideal position because it has internationally famous names. The main issue with regard to banking will be greater competition and greater consumer choice. Banks will lose their monopoly because, thanks to technology, even small entities such as credit card agencies will be able to enter the banking business.

Will small and medium-sized businesses be able to survive, given the high cost of all this technology?

Innovative technologies are always expensive in the beginning, but under Moore's Law, the price will drop over time. Small and medium-sized companies will be able to compete at the same level. Large companies have a different problem: Due to their size, it's very difficult to change direction. The most famous examples are Microsoft and Xerox. Microsoft could have gone bankrupt many times. They avoided this only because Bill Gates took the whole organization to

the internet. The company now faces the same problem: Because it's so big, Microsoft is finding it hard to break into the tablet market. Being big does not necessarily guarantee success. Xerox Parc had the first PC, laser printer, and Windows-like interface back in the 1960s. They had everything to apply innovative technologies to their copying business. Instead, they wondered why their employees should have personal computers, if they were a copying company. They missed the boat. In sum, small companies may not have the capital that big companies do, but they have the advantage of being agile and nimble. They can adapt much faster. That's why companies like Facebook started off from nowhere to become a multi-billion dollar organization. Most innovations start within smaller companies.

In your presentation, you talked about the next 100 years. What will international trade look like 100 years from now?

The barriers to trade are falling one by one and it is causing tremendous dislocation. But it's also bringing tremendous benefit. When historians write the history of this era, they'll probably say that millions of Indians and Chinese were lifted out of poverty into the middle class. That is one of the great demographic changes of the last centuries. It used to take 200 years to industrialize a country. Now we do it in one generation. The great advantage of globalization is that information spreads around the world instantly.

So as technology changes, human beings will also change?

The answer is no. Some people think that we're going to be cyber-humans who will be all wired up and able to multi-task. I don't think so. We haven't changed in 100,000 years. We're still the hunters and gatherers from Africa that want proof of the kill. This is why paper hasn't disappeared. In fact, we have more paper today than ever before.

Still, the picture you paint of the future is totally different from what we know today. Is this a contradiction?

Technology is very young. A couple of hundred years ago, long distance communication was yelling out the window, literally yelling out the window. And so, in a couple of hundred years, evolution hasn't changed that much. We're still cavemen. The only difference is we have nuclear weapons and the internet. We still have the jealousies, the petty squabbles. Evolution requires a much bigger time frame.

In your book, you mention that in 2100 we will select our children's genes. We will have perfect genes, perfect children, and perfect bodies. Isn't that a bit scary?

Evolution is not perfect. We see this in the fact that most diseases are genetic. There are about 5,000 genetic diseases that we know of, such as diabetes and Alzheimer's, that we have no protection against. Evolution only takes place while you can have children. Because people with Alzheimer's are way past their child-producing age, there's no evolutionary pressure to create human beings that are resistant to Alzheimer's. In the next 30 years, we'll be able to correct many of these genetic defects with genetic research. The main reason to create these "designer children" will be to combat disease. Of course some parents will also want smart kids with perfect genes. I think that cosmetic gene manipulation will probably have to be regulated to ensure that physical appearance cannot be manipulated at will. In some countries, maybe you'll be able to buy illegal genes and it will be very hard to stop that. We'll just have to live with the fact that in the near future, a certain fraction of humanity will have illegal genes.

Therapeutic cloning is still banned in Switzerland, and also highly controversial elsewhere. Why should that change in the near future?

Human cloning has been banned in many countries, but in private industry it's still possible to work on human cloning. It's not such a disaster if we have cloning of human beings because who are they going to clone? Most people will not want to have a clone of themselves. Maybe rich people who have no heirs will want to be cloned, so they can give their money to themselves to start all over again. Today we can already grow skin, ears, noses, blood vessels, and heart valves, but it has not dislocated the human race. This technology is primarily intended to cure illnesses.

You paint a totally positive picture of the future. But surely there's also a negative side?

Sure, take a look at the 20th century. The 20th century gave us all the wonders of electricity, the internal combustion engine and antibiotics. It also gave us the atomic bomb, and the First and Second World Wars. Millions of people died in the Second World War due to poison gas, one of the worst weapons of mass destruction. Now, with designer germs, nuclear proliferation, you can wipe out billions of people. So we have to keep some of these technologies in check. However,

we must look at the good side of this century: Hundreds of millions of people were lifted out of poverty, life expectancy doubled from 40 to 85, and the quality of life increased – we went from living in mud houses to living in skyscrapers.

What can banks do in order to better equip themselves for the developments of the next 100 years?

Banks are traditionally conservative, but we're in the cyber age where competition moves very, very fast due to innovative technologies. The banks' instinct is to oppose change. If you oppose the digitalization process, you will go bankrupt. Surf the wave of technology, don't try to fight the wave. You must also try to understand market technologies. Commodity capital is the face of capitalism. However, the financial services of the future will be based on intellectual capital and not on commodity capital. The companies that will be rich in future are those which understand the link between commodity capital and intellectual capital. There is no mass production with intellectual capital. Banks must understand that the nature of wealth will be different in future.

Dr. Michio Kaku – Professor of Physics, Futurist, and Bestselling Author



At the age of eight, Michio Kaku's role model was Albert Einstein. As a child, he read of Einstein's death in the newspaper, with a photo of his desk and unfinished manuscript. Even then he wondered: "What makes it so difficult that a great physicist like him couldn't finish it before he died?" He decided to look into the unfinished manuscript. At the age of 17, he built a particle accelerator in his mother's garage. It was the size of a refrigerator and used enough power for a single family home. It also brought the son of Japanese immigrants to the attention of physicist Edward Teller. Teller helped Kaku win a Harvard scholarship for physics. Today, Michio Kaku is a professor at two renowned universities, co-creator of the string field theory, and is researching Einstein's dream of a "theory of everything."

- [Official website of Michio Kaku](#)

A Day in the Year 2100*



In 2100 we will be totally surrounded by technology. It will be in our carpet, our walls and our floors. Our friends' faces will be holograms in our living room. In the bathroom, hidden DNA and protein sensors will examine our bodies' molecules for harmful cells. It will be possible to detect cancerous cells ten years before a tumor forms. If cells are found the "Robo Doc" hologram will automatically appear on our bathroom wall to explain the details of the DNA analysis just performed. We will take our cars out of the garage by telepathy. These will be steered by magnetic fields. There won't be any more traffic jams, because traffic will be controlled by computer. Cars will drive themselves, so that we can access the internet with our contact lenses or glasses and read the news. The intellectual competition among individuals will increase.

* from: "The Physics of the Future" – Michio Kaku

Forum for Swiss Foreign Trade and Investment


The Forum for Swiss Foreign Trade and Investment is organized by Switzerland Global Enterprise (SGE). SGE has a mandate from the Swiss government to promote foreign trade for SMEs in Switzerland. In cooperation with Credit Suisse, Switzerland Global Enterprise advises SMEs on international business plans. Each year, the Forum welcomes international and national experts who hold various talks and insight sessions to impart key knowledge about getting involved in foreign business. Professor Michio Kaku was a guest speaker at this year's Forum.

- [More information about the Forum for Swiss Foreign Trade and Investment](#)


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