I THINK, THEREFORE I ~~AM~~ AI

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EPISODE 6 - Featuring Martin Ford, New York Times Bestselling Author

As Artificial Intelligence unfolds and pervades every aspect of the economy, now seems a good time to wonder if you, or more specifically your job could be replaced by an AI operated machine? In this episode, Kokou Agbo-Bloua considers different scenarios of our possible future alongside robots. From René Descartes to algorithmic trading, he explores human-cyborg relations accompanied by special guest Martin Ford, New York Times bestselling author, who discusses AI and its impact on employment.

SOCIETE GENERALE

2050 INVESTORS – EPISODE 6 SCRIPT

(Opening credits for all episode of the podcast)

Welcome to 2050 Investors, the podcast that deciphers economic and market mega-trends to meet tomorrow's challenges.

I'm Kokou Agbo-Bloua, I head up Economics, Cross-Asset and Quant Research at Societe Generale.

In each episode of 2050 Investors, I'll investigate a key mega-trend that relates to the Economy, the Planet, Markets and You.

(Beginning of episode 6)

[Click on Siri] Hey Siri, can you tell me a joke?

[Response from Siri] What does a robot call a very large meal? A megabyte.

[Click on Siri]. Hey Siri, are you intelligent?

[Response from Siri] I aspire to be a truly intelligent machine. But I'm still machine learning.

As some of you might have guessed, the topic of this episode is artificial intelligence and its impact on society, the economy, markets, and you. Will you or more specifically your job be one day replaced by an AI operated machine?

We have two alternatives of the future for 2050.

The first is Utopia and the second Dystopia.

In the first Utopian world, AI frees humans from the need to work, we all have basic income that allows us to enjoy life free from going to the office every day to work for a boss. We spend time on what we enjoy doing. In a nutshell, paradise. "Live long and Prosper" as Spock and his fellow Vulcans would say.

In the second Dystopian world, AI simply takes away our jobs. We become redundant. Only a happy few can work and earn most of the wealth via exponential productivity thanks to thinking machines. Structural unemployment, poverty and inequality rise significantly.

But here is the key question: is a job simply a means to pay one's bills? A means to save cash so that one can hopefully retire one day. Or does it serve another more important purpose? Such as being the core mechanism of wealth distribution which is a fundamental building block of any democratic society and its economy?

Let's start our investigation.

This is a very important theme and mega trend that will have a profound impact on society when you consider the exponential advances of technology. One could compare this with the controlled used of fire by our ancestor homo erectus during the early stone age 1.5 million years ago. The beginning of agriculture 10,000 years ago when humans began to domesticate plants and animals. And the 19th century industrial revolution with the power of the internal combustion engine via fossil fuel burning.

So, why is this time different? Well …. because it is not simply about outsourcing and multiplying our physical abilities with machines … it is about outsourcing and industrialising our ability to think.

And guess what? Not only do we have to deal with the climate change crisis that is hanging over humanity's head like the sword of Damocles – and here think being boiled to death like a frog, as discussed at length in the "the Frog and Climate Change" episode, but humanity also needs to worry about its own creation: AI destroying our way of life and taking over. A digital Frankenstein. Too bad we can't ring up Mary Shelley, who wrote Frankenstein, to ask her for her thoughts on this!

Who knows, maybe intelligent machines might be part of the solution to climate change as they are more likely to survive extreme weather conditions than us humans or simply find a way to control nuclear fusion energy. But I digress. Back to our train of thought.

Let's start with some basics.

Full disclosure, in this episode instead of using my keyboard, I will converse with … hum… my AI assistant Siri.

[Siri] Hello Kokou.

Nothing personal against Alexa by the way. First come first serve. Same goes for JARVIS, which literally means "just a rather very intelligent system". It is Tony Stark's personal AI assistant in Ironman. It was a tiny bit expensive.

So, let's get Siri to do a bit of work, shall we?

[Click on Siri] Hey Siri, what is AI?

[Response from Siri] Here is some information: Artificial intelligence is intelligence demonstrated by machines as opposed to the natural intelligence displayed by humans or animals. It is the ability of machines or computers to perform tasks that are usually performed by people. For example, the ability to learn, make decisions and solve problems.

How does Siri actually work you might wonder? Upon receiving your request, Siri records the frequencies and sound waves from your voice and translates them into a code. Siri then breaks down the code to identify patterns, phrases, and keywords. Quite impressive.

Now what is the one thing that makes humans different from other animals?

It is our ability to think or even be aware of our own thinking. Ok, this is assuming you have not taken 50 pina coladas.

We all remember Rene Descartes' quote in his Discourse on Method in 1637, Cogito ergo sum. I think therefore I am. The full version is Dubito, ergo cogito, ergo sum. I doubt therefore I think, therefore I am.

Machines cannot think, doubt themselves. They do not need psychotherapy. But what if they could?

An article on BBC.com entitled "Stephen Hawking warns artificial intelligence could end mankind" cautions that the ongoing efforts to create thinking machines pose a threat to our very existence.

Elon Musk has warned that AI is "our biggest existential threat". "Humans, who are limited by slow biological evolution, would not be able to compete, and would be superseded." This reminds me of the scene in Terminator 3 where the Skynet programme becomes self-aware. It takes control of all the US military nuclear arsenal with the intention of launching a nuclear strike against its enemy. Humanity.

An Article on cisco.com on AI vs human intelligence refers to McKinsey Global Institute's report "Harnessing automation for a future that works," which suggests that 49% of work activity could be supplanted by automation by 2055.

Another McKinsey Global Institute report called "What's Now and Next in Analytics, AI, and Automation" compares the changes wrought by AI to those of the Industrial Revolution, where old tasks gave way to new human opportunities. "We cannot definitively say whether historical precedent will be repeated this time," the report says, "But our analysis shows that humans will still be needed in the workforce."

So, what could be the consequences on society, the economy, financial markets, and you?

Having a skilled job is THE way to earn a living, well for most of us at least. It is the mechanism of wealth distribution. We spend over a decade in education to learn things but also to learn how to think and make judgement calls via repetition.

The objective of training is to get us to become full productive members of society via a job that will earn us social status. Earn us an income stream so that we can have a credit card, get a mortgage to buy a house or a loan to buy a car. Earn us an income so that we can raise and provide for our families and then live happily ever after until we die and pass on our accumulated excess wealth to our kids and repeat …. And voila!

If you take all of that away, you might get huge social unrest and potentially a revolution. The economy would collapse.

What about financial markets and asset prices? Most of the buy and sell orders are done via algorithms and machines today. They are able to make decisions in nanoseconds. The impact has

been the illusion of liquidity. Because algorithmic traders do not have large balance sheets like banks do. During periods of high volatility, liquidity can vanish in a matter of seconds as these machines retreat which can lead to flash crashes.

[Siri, what is a flash crash?]

[Siri] It is a very rapid, deep fall in security prices over a short period of time. It frequently stems from trades executed by black box trading combined with high frequency trading. Recent cases include May 6th 2010 where the US equity markets fell 9% within minutes only to recover afterwards, the flash crash of the British pound on Oct 6, 2016 which fell by 6% against the US dollar in 2 minutes or the Japanese yen on Jan 2nd 2019, which rose by 7% against the Australian dollar for no reason.

It is as if the financial market got infected by a bug with machines trading against each other triggering a sort of financial Larsen effect. We all remember the two black cats "déjà vu" scene in The Matrix movie.

Picture this. Passive and systematic strategies are performing better than active, discretionary strategies based on human judgement.

Traders in some asset classes are gradually being replaced by machines able to digest hundreds of market indicators in a fraction of a second and provide liquidity faster than what an experienced trader can do.

That said, the problem with machine learning is bias in the data. Deep learning can digest huge amounts of data but cannot question the data. It is bound to replicate the same mistakes. Hiring decisions, etc…

So clearly, the question of whether or not machines will replace us, in our jobs at least, is central. Mary Shelley not being available, who better than a New York Times bestseller author to discuss this.

Martin is a futurist author focused on artificial intelligence and robotics, with a focus on the impact of these technologies on the job market, economy, and society. He has written a New York Time best seller, and we can say a Business Book of the Year award on technology called "The Rise of the Robot Technology and The Track of the Jobless Future". His new book, "Rule of the Robots, How Artificial Intelligence Will Transform Everything", already has great reviews. And finally, his TED talks on the impact of AI in 2017 was viewed over 3 million times.

[Interview starts]

Kokou: Hello Martin, thank you for joining us today.

Martin: Thanks for having me.

Question 1

Kokou: So, machine and technology replacing jobs is not a new fear. But why is this time different in your opinion?

Martin: Right, as you say, it's not new. It goes back at least 200 years to the Luddite revolts in England. So, people have worried about this again and again and so far, it hasn't really developed. But I believe finally we have the technology that is really going to produce a different outcome this time. And there are really two things I would focus on.

First, artificial intelligence really represents machines that are taking on true cognitive capability. And we've seen just remarkable advances over the last decade in terms of what machines are really capable of.

And the second thing is that it's becoming a systemic technology, a general-purpose technology. So, it's not a technology that is going to impact just one sector of the economy. It's something that will be everywhere. I think ultimately, it's going to be almost like electricity. So, every industry, every employment sector is going to be impacted by what is really an inherently labor saving technology, you know with the ability to displace human labor. And I think that that's going to unfold over the next decade or two. And we're going to see a big impact.

Question 2

Kokou: But do you think AI is an opportunity to increase our ability to do more in the same way as the first industrial revolution allowed us to have more free time, go on holidays and be more productive? Or do you think it is a threat to the very fabric of society?

Martin: I think it's both of those things. It's definitely a positive for us. It will make every industry more productive. It will allow us to create things that we wouldn't be able to create without using artificial intelligence. So, I'm a big proponent of the technology. I think it's indispensable in terms of overcoming the challenges that we face in the future. But it does come coupled with some very real dangers or risks, and one of them is definitely focused on the distribution of income, the idea that people rely on jobs to survive and to be consumers.

And if those jobs begin to evaporate, or if those jobs are de-skilled so that they pay lower wages, then people will be left with less income. And I think that's one of the primary things that we need to worry about as this technology unfolds.

Question 3

Kokou: So as a result, don't you think that this could have profound effects on democracy and exacerbate inequality as a result?

Martin: Yes, absolutely. I mean, jobs are absolutely critical to the way our economy functions, and, of course, to our individual survival. They're the primary way that money gets to people so that people can then go out and purchase things in the market. And really economies are fundamentally driven by consumer demand. If you remove that mechanism, then it's hard to see how you can have a vibrant economy.

So that's the economic problem that we face. But then, of course, there's also a social problem. Families are not going to be able to sustain themselves without that income and that is going to result in increased inequality that will result in potential political and social upheaval. You run the risk of demagogue politicians of the type we've seen in the past being elected to office based on the fear of the people and so forth.

We need to come up with policies that can address this problem so that we can maintain a solid distribution of income, even in the face of these changes.

Question 5

Kokou: But then there's an ethical problem as well, which is how do you give purpose to people who receive basic income in terms of what do they do on a day-to-day basis? Is it going to be a life of entertainment and sports, for example?

Martin: Right. I mean, I think that's one of the biggest challenges that we face is that jobs are kind of a package, and they provide many important things. One of the most important things, of course, is an income. But in addition to that, they provide something to occupy our time, something to challenge us, something that gives us dignity, you know the sense that we're contributing something to society. If those jobs are going to gradually disappear or become less excessive to people, then we need to have a replacement for that.

Question 6

Kokou: But what about segments or jobs that cannot be replaced by AI? Creativity, emotion, dreams…

Martin: Right, I think there are definitely categories of jobs that for the foreseeable future, are going to be relatively safe. So, I would point to three things. One is what you might call skilled trade jobs like electricians and plumbers, where you're moving through a very unpredictable environment, solving problems. You need lots of dexterity. We can't build a robot to do that. That would be science fiction. So that's in minimum decades into the future that those jobs are going to be impacted.

The second thing, as you mentioned is creativity. If you're really thinking outside of the box, building something new. For the most part, these jobs are going to be safe, although there is progress in creative artificial intelligence. I think for the most part, if you're doing a genuinely creative job, then AI is going to be a tool that will enhance your capability rather than something that will replace you.

And then the third category would be jobs that really require you building sophisticated relationships with other people, really complex personal interactions. Think of a nurse, for example, providing empathy to patients. Again, you see some inroads here in terms of what's happening in AI, but I think it'll be a long time before machines can build really meaningful relationships with people.

Question 7

Kokou: Okay, so last question. What's your view on the job market or society in 2050? Do you think you could even think about human being enhanced or biologically enhance with technology that is powered by AI?

Martin: It's possible. I live here in Silicon Valley, and there are a lot of people here who have that kind of vision. One of the most famous is Ray Kurzweil, who has talked a lot about the so-called singularity, the fact that we're going to have this massive acceleration of technology in the future. And he believes that ultimately that will happen, though, there'll be a merger of artificial intelligence of machines and people. So that's one way that things could go, but certainly another direction is that people could just end up being displaced and machines will do more of the work, and people will, for the most part, be disengaged, and hopefully they'll find something else productive to do.

But there's a real danger that that they won't. You know that people will engage in drugs or criminal behavior or the other possibility is that people will become much more involved in virtual reality, which will also advance. So, people might be attracted to this technological fantasy and then really kind of divorced from the real world. So, these are real risks in terms of what could happen to our society over the coming decades as all of this unfolds. And that's the reason I think we're going to need regulation, we're going to need public policies to address this so that we continue to have hopefully, a good outcome where people are engaged and find productive, meaningful things to do with their lives, even though, we're going to see what potentially could be just a paradigm shift in terms of what our society and the workplace really looks like.

Question 8
Kokou: So, lots of dangers that need to be mitigated, what about the positive sides of AI?

Martin: Yeah. I think there are enormous positives to it. In fact, I think that artificial intelligence is going to be indispensable to us if we're going to face the challenges that are going to come up in the future because it will enhance our creativity, our ability to innovate. So just, for example, think about climate change in order to address climate change. We need innovation across the board. It's not just about new ways to generate electricity. We need new ways to build buildings, we need new ways to create cement, new ways to do lots of things in agriculture and so forth.

In all of these spheres, we need new ideas, new innovation. And I think artificial intelligence is going to be a critical tool that allows us to take on that challenge. So, we really can't afford to turn away from this technology or overly regulate it and prevent it from advancing. We need it in order to thrive in the future. It's just that we are going to have to also adapt to the dangers that are going to come with this technology.

Kokou: All right. So, I think we've run out of time, but this was an amazing discussion. Hopefully we won't end up like humanity in The Matrix, where machines take over, and then we'll have to rely on Terminator to come and save everybody. But Martin, this was amazing. Thanks a lot for your time and have a great day.

Martin: Thanks for having me

[Interview ends]

But let's not get ahead of ourselves just yet, the issue is not what the machines alone can do, but what a human with a machine can do.

Richard Hamming, a famous mathematician and father of the binary code, brings another angle by saying “The real problem is what can man and machine do together and not in competition”.

I think the best conclusion is the following quote by American author Elbert Hubbard: “One machine can do the work of fifty ordinary men. No machine can do the work of one extraordinary man”.

(Credits)

Thank you for listening to this episode of 2050 Investors and thanks to [Martin Ford] for sharing some useful insights with us. And kudos to Siri for its jokes.

[Siri] It was my pleasure.

I hope this episode has helped you get a better glimpse of the future of your iPhone! You can find the show on your regular streaming apps. Please subscribe, leave some stars on Apple Podcasts, leave comments anywhere you like and spread the word!

See you at the next episode!

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