



Artificial Intelligence (AI) and the future

The Chief Executive Officer of Thimphu TechPark, Tshering Cigay Dorji (PhD) talks to Bhutan Time's Lhakpa Tshering on the impact of Artificial Intelligence (AI) and the future.

Today everyone is talking about Artificial Intelligence (AI), blockchain technology and Internet of Things. In layman's term, can you explain what these are?

Since the advent of industrial revolution, humans have always tried to automate tasks first by using mechanical devices (mechanization), and then by using robots and computer programs. This was especially true in the automobile industry.

AI is all about taking automation to the next level. Actually, it is nothing totally new. AI is achieved by making machines learn from examples and respond appropriately in a new situation. Therefore, AI and machine learning are interlinked. It is very similar to how humans learn. For example, if we study a lot of legal cases and their outcomes, we will be able to predict the outcome of a new case with a fair degree of accuracy. The machine can do the same if it is fed with a lot of examples of legal cases and their outcomes.

Likewise, a computer program fed with a lot of examples of MRI images and their interpretation can look at a new MRI image and tell you if the person has cancer. This is artificial intelligence. AI is made possible because it is not difficult to collect example data in this digital age when the talk of 'big data' is quite common. AI can be applied in many different scenarios such as self-driving cars, autonomous robots, predicting customer behavior etc.

Blockchain technology is just a new way of storing data. Unlike the usual way of storing data in a central database controlled by whoever owns the system, blockchain allows a copy of the same data to be stored in many computers called nodes. In a centralized system, one person with power could change the data. But in a blockchain system, this cannot be done without the agree-



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ment of at least 50 percent of the nodes because it has to be changed in all the nodes. Hence, it is considered very secure.

Internet of Things (IoT) just means that more and more devices would be connected to Internet. Already, we are all always connected to the Internet through our mobile phones. Now, our microwaves, refrigerators, cars, CCTV cameras are getting connected to the Internet, not to talk about the animals like cows, sheep etc. in big farms being connected to the Internet and being monitored online by the farmers about their health, mating period etc. IoT is increasingly becoming a reality today. IoT enables the collection of a lot of data and hence fuels AI.

How do you think AI is going to impact the world, for good or for worse?

This is the time in human history when technology is evolving at the fastest pace. Things have never changed so fast in the history of mankind. Almost every industry is disrupted by the emerging technologies. Think of uber and Airbnb for instance.

I think AI is going to impact the world greatly.

But AI, like all technologies, is a tool. Whether it impacts the humans negatively or positively will all depend on how the scientists, corporate leaders and the world's influential political leaders decide to do with it. We should not make technology control us. Technology should be there to serve the humans.

How do you think AI will change the future of work for individuals, businesses and the society at large?

There will surely be major changes in the jobs that people do. Many jobs will be lost to machines in the near future, while some new ones will be created. Even here at Thimphu TechPark where I work, our anchor tenant, Scan Café Pvt. Ltd., has scaled down its manpower recently because the computer has become better at editing and designing photobooks. Fortunately, a new company that works on AI, iMerit Technologies Pvt. Ltd. has recently opened its subsidiary at Thimphu TechPark which has already employed 125 people. So, while jobs in one sector goes down, jobs in new sector can open up.

However, on the whole, my prediction is that the jobs lost would exceed the

new jobs created in the age of AI. Therefore, I think it will be a world with less and less jobs in the future.

Will big global companies that own the AI technologies and machines become too powerful? How do we respond to a scenario where many people would be unemployed? Will the Governments have the power and knowledge to respond to such a scenario appropriately? These are some of the questions at this time that have no proper answers.

Thimphu TechPark is currently at the center of tech innovation in Bhutan. Is TechPark working on embracing AI to revolutionize ICT and automation in Bhutan?

From the beginning of this year, we have been working on expanding our role to become the centre of excellence in IT and provide the best IT services in Bhutan. Besides the foreign companies doing cutting edge software development with Bhutanese employees, we, Thimphu TechPark Ltd., have started our own IT Services Department and we already have 17 staff working on ERP systems and software development. By the end of the year, this team will be expanded to 37 people. We are also planning to become a leader in Cyber Security down the line. So, yes, we are taking steps to embrace the emerging technologies.

The greatest fear is that AI will increasingly replace human jobs. In Bhutan, do you see this happening, even in the distant future?

Yes, as I mentioned above already, this will be a reality. Some new jobs will be created in the process, but overall, I fear new jobs would not be able to replace all the lost jobs.

In Bhutan's case, how can we leverage technology for development, business and social progress?

As I have written in an article in Druk Journal in the beginning of this year, we have to harness the power of technologies for our development and nation building if we do not want to be left behind technologically and economically. Without embracing technologies, our businesses would not be competitive enough vis-à-vis other countries, our development would stagnate and social progress would automatically suffer. This is because we live in a much interconnected world today, unlike in the 1950s and 1960s. No nation is insular to the happenings outside its borders today. It is for this reason that to stand and stare is not a choice today.

We have to keep moving with the other nations. To do that, we have to embrace technologies and our people have to be technologically competent. And to be that, the best place is to start is education. Our children should be given the right education for the kind of future the world is moving towards. Education is the key. We have to act now, though our resources are limited to give the kind of education our children deserve.

Anything else you would like to add?

It is no doubt that the future of humanity will be increasingly driven by the emerging technologies. We are very fortunate to have a King who has the foresight and wisdom to lead us into such a future with the right preparation and confidence. His Majesty's message is clear and unambiguous when it comes to the importance of harnessing new technologies to solve our problems.

We have to wake up to this important call from our beloved King. While our souls should always be deeply rooted in our age-old values and culture, outwardly, we should be second to none in the use of technologies for our progress and development.