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# Building for a Blockchain Future

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## After the internet, blockchain is the largest disruption Professor Campbell Harvey says he has seen in a decades-long career in finance.

"And we are just at the tip of the iceberg," he said.

Blockchain is best known as the technology that underpins bitcoin and other cryptocurrencies. But its wider applications prompted Harvey to create an MBA course at Fuqua on the technical basis and applications of blockchain technology.

In 2014, its first year, the Innovation and Cryptoventures course attracted 13 MBA students. Four years later, enrolment has snowballed to 231, with Harvey adding additional classes to handle the demand.

"Traditional firms are wondering how to deal with blockchain," Harvey said. "A course that is both entrepreneurial and technical produces exactly the kind of graduates they're looking for."

The course is interdisciplinary, dealing with finance, marketing, operations and accounting. Students hear from some of the leaders in blockchain development, such as Barry Silbert, CEO of Digital Currency Group, Amber Baldet of JP Morgan's blockchain initiative, and Coinbase founder Fred Ehrsam.

"Almost every aspect of finance is touched by blockchain technology," Harvey said. "We talk a lot about fintech, but that is just one application of blockchain technology, which goes much deeper."

A blockchain is best understood as a shared, secure ledger to which new entries can be added, but existing entries cannot be altered. It's entered public consciousness as the basis for digital currencies, but Harvey's course was built on its potential to change almost every business sector.

"Blockchain is an ideal place to have, for example, a record of ownership," Harvey said. "There are hundreds if not thousands of applications for something as simple as the verification of ownership. So this is not just a cryptocurrency course. Even if the value of all cryptocurrencies went to zero, blockchain is not going away. It's just a good idea, a great innovation with many applications in business."

***"The most important part of my course is for the students to innovate."***

The course dives deeply into the technical aspects of bitcoin, with the goal of fostering innovation. The grade is largely based upon a 15-page new company pitch tied to blockchain technology that students present to the class.

"The most important part of my course is for the students to innovate, to come up with an idea," Harvey said.

Startups and traditional firms alike are seeking graduates with that entrepreneurial perspective on blockchain, Harvey said.

“Recruiters are not looking for someone to code up some blockchain,” Harvey said. “They’re looking for somebody to identify the opportunities where they can be the disruptor, rather than sitting around and being disrupted by this technology.”

Almost every company in the Fortune 500 is impacted by blockchain technology, Harvey said, adding that many realize they need to do something.

“They know they need to figure out what the opportunities and the threats are, to hire a team and be a leader in this technology,” he said. “So there is high demand within traditional firms to find students that actually have this training.”

The course came about when Harvey returned to teaching after seven years as editor of the Journal of Finance. Refreshing notes for his International Finance course, he added a lecture on cryptocurrencies – despite widespread claims digital currencies were just a fad.

“As I began reading about the scientific basis for cryptocurrencies, I spent more time preparing this two-hour lecture than I spent on the sum of all of the other two-hour lectures in the course,” he said. “Once you get into this it’s really hard to turn back. You just want to go deeper and deeper down the rabbit hole.”

The student response to the lecture was ecstatic.

“I did not think they would find it very interesting,” Harvey said, “but it was totally the opposite.”

Students wanted a full course in the topic, so Harvey set about learning the subtleties of the regulatory environment and the computer science involved, and developed a full course to teach the following year.

***“The turnover of material in this space is dramatic, and happens fast.”***

The speed of change in the blockchain sector means the course is constantly evolving.

“Preparation can be challenging,” Harvey said. “The turnover of material in this space is dramatic, and happens fast.”

At the beginning of one session, for example, the ethereum cryptocurrency did not even exist, but quickly became the second largest digital currency.

“In the middle of the course I was preparing lectures on the fly on the differences between bitcoin’s protocols and those planned for ethereum,” Harvey said. “So this is a course that is dynamically changing. When I finish teaching, I have to start preparing almost immediately for the next time, and the turnover of content is about 50 percent. You need to be really excited by this space to do this. If anyone is looking for an easy preparation as a professor, then this is the wrong course to teach.”

But it means students are getting instruction rooted in the latest developments.

“The course is designed to enable students to identify what type of blockchain technology – because there are many different types – best suits a particular problem that blockchain could solve at a particular firm,” Harvey said. “They’re able to figure out how to implement that blockchain application in a way that is efficient, secure and will have the greatest chance of enhancing the value of the company they work for.”

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