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**GARY GENSLE:** We can use technology to make finance more inclusive and more accessible to many more millions of people in our country and many more hundreds of millions of people around the globe.

**SARAH HANSEN:** Today on *Chalk Radio*, modern money. In this episode, we're taking a look at 15.S08 FinTech: Shaping the Financial World. This is a course, about money and how it works in a constantly changing digital environment.

**GARY GENSLE:** My research and teaching is all about the intersection between finance and technology. And what better place to do it but at MIT?

**SARAH HANSEN:** Our guest today is Professor Gary Gensler. He co-directs MIT's FinTech@CSAIL, which stands for Computer Science and AI Lab. Professor Gensler has a unique perspective in that he's teaching a subject that's continuously evolving.

So how does an educator teach something that changes so much and so rapidly? How do you prepare students to work in a new and, oftentimes, vastly different context, one that literally might not even exist yet? But before we dive into all of that, we first have to understand, what is FinTech?

**GARY GENSLE:** This term, FinTech, which came about in the last 20 or so years, can mean different things to different folks. For me, I think of it as how is finance changing due to new technologies? And the original FinTech was money itself invented thousands of years ago by humans.

But usually, a lot of folks these days will call FinTech the companies that are disrupting the world of finance using machine learning or using something called blockchain technology.

But 20 years ago, it would be correct to say that what technology was disrupting finance more than anything else was the internet. And 10 or 15 years ago, the technology that was disrupting finance the most was mobile phones and cloud.

And so I teach it from a broader view and try to prepare students with this concept, so they're ready for the 2030s and the 2040s. What technologies then will be highly disruptive in finance? It's really about how technology is changing the world of finance and has for centuries and will for centuries to come.

And right now, we're living through this transitional period of machine learning, artificial intelligence, Internet of Things, blockchain technology. In a decade from now, it will be some other transition. And so I really try to engage the students on what that means, what those big technology movements mean as they come into the technology stack, and then they just become accepted.

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**SARAH HANSEN:** In helping me understand what FinTech actually is, Professor Gensler made some really interesting observations about the way we use money now versus even just 10 years ago and what that implies about where we're headed.

**GARY GENSLE:** That which we call money, that which Plato and Aristotle called money, was just society's representation of something of value. But boy, in the 21st century, aren't we there-- that you can just wave your mobile phone, and you move value-- what we call money.

The greatest changes of the early 2020s is about two forms of artificial intelligence. One is machine learning. Machine learning has a remarkable ability to extract correlations in data where we couldn't find it earlier with earlier forms of math-- linear algebra and so forth.

And the second form of artificial intelligence that's dramatically changing finance is natural language processing. What do these words mean? They're just kind of fancy words to say, can you move human language to computer language? And guess what? All day long, that's happening, and we're starting to get robo advice.

And robo advisory platforms can deliver finance far more broadly to far more people. So Bank of America has its voice assistant, Erica. But millions of their customers are now using Erica-- [LAUGHS]-- to do modest transactions-- move bank balances around, things like that.

So we try, in the classroom, to think about this with students and sort of prepare them. What are the next technologies? Not just the technologies like machine learning and natural language processing, but what are the next technologies?

And how do we think of entrepreneurial strategy-- how to think of the strategy to use new technologies to provide services. And then the classic way that you always have to think about as an entrepreneur-- how can you do something better, quicker, cheaper that's not been done today?

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**SARAH HANSEN:** During my conversation with Professor Gensler, I began to realize how far-reaching the implications of FinTech can be. Expanding access to financial literacy is a really important outcome that drives his teaching and his passion for the work.

**GARY GENSLE:** What I was drawn to MIT about was this sense that maybe we could democratize capitalism a bit more, that we can use technology to make finance more inclusive and more accessible to many more millions of people in our country and many more hundreds of millions of people around the globe.

New technologies come along every decade or so, and then they disrupt the status quo. And what's really exciting is, at MIT, we're at the forefront of those new technologies. And we can bring those practices, those new practices, into the classroom and say, well, now what's this doing to finance?

What does it mean that a big technology company is starting to have a credit card, maybe? What does it mean that Apple credit card exists, or Facebook wants to have a worldwide currency called Libra or that we might provide insurance that's going to be measuring our Fitbits or watches or our mobile devices as to whether we're healthy or not?

**SARAH HANSEN:** Students from all areas of MIT's Sloan School of Management, and even students registered from other schools, flock to Professor Gensler's class to learn more about what the future of finance looks like and how they might help shape it.

**GARY GENSLE:** Students come into this class for multiple purposes. But I'd say the majority are really interested how these new technologies might be disrupting a big part of an economy. And the students are from all over the globe.

And dominantly, they're thinking about, I want to understand how this technology is disrupting finance. So I asked all the students to write a memo, a clearly worded recommendation memo. But their recommendation-- they can pick one of three CEOs-- Jeff Bezos of Amazon; Brian Moynihan, who runs Bank of America; or Mark Andreessen, who runs a big venture capital firm, Andreessen Horowitz.

And I said, you pick whether you want to write about the provision of credit, the provision of credit cards, the provision of automobile insurance, the provision of mortgages. You pick whatever you want to pick in finance, but you have to write a CEO recommendation memo with a clearly stated recommendation to Amazon, Bank of America, or Andreessen Horowitz.

And a little over half the students picked Amazon. They were all really interesting memos to read. And the students engage. They engage because there's tremendous benefit to giving students a real live thing to address.

It's a real live thing where I say, listen, if this is a great memo, I'll figure out the way to get it to Jeff Bezos. I'll figure out the way to get it to Brian Moynihan. And the students believe me because I could get a really great memo to them.

Some students will say, can I write it to somebody in Brazil instead? And I always say yes. Had a great memo to the CEO of Tencent, the big technology network in China. And it was one of the best memos this group of students put together.

I would say to other educators, trust the students. If you give them a little bit of an open-ended prompt like this, a big majority will rise to the occasion.

**SARAH HANSEN:** As is the case with most things nowadays, Professor Gensler's course is formatted a little differently in the time of COVID-19. But he's seen some pretty remarkable results at achieving some semblance of normalcy in his new class format.

**GARY GENSLE:** We're in very unusual times-- that those of us who learned our teaching skills in the classroom with anywhere from 15 to 100 students in the class, that you are all having a shared experience. All of a sudden, with a snap of a finger, we're online.

Most of us at Sloan felt it was really important to keep some sense of community. And so when I started the first class online, I asked all the students-- those that could-- to listen together synchronously. And so this class was taught at 8:30 to 10:00 AM on Monday and Wednesday.

And so for many time zones, it worked. But did it really work for somebody sitting in Europe who had flown back? So we did record it, but we got about 85% to 90% of the students tying in synchronously. And I felt it was not only important that it was synchronous, but secondly, that everyone had their video on.

And I would tell the students-- I said, I know that you might have a friend, a spouse, a lover, a child walk through the camera. You might have a delivery, which-- One day, I was teaching, and I had a delivery. And there was a pounding on the door. And I had to say to the students, excuse me. I have to go to the door.

But I said, that's life. We're going to relax about all of this. But I felt it formed a better sense of community.

**SARAH**

**HANSEN:**

Before teaching at MIT, Professor Gensler cut his teeth in the professional and political world working for Goldman Sachs; the US Department of Treasury; Hillary Clinton's campaign; Paul Sarbanes in the US Senate, and with Barack Obama's administration, chairing something called the Commodity Futures Trading Commission.

His understanding of what makes a successful, well-equipped professional shines through in his classes. Gensler isn't just developing domain knowledge but cultivating humans and professionals.

I want to read something to you that you've written.

**GARY**

**GENSLER:**

Oh my God. This is the embarrassing moment.

**SARAH**

**HANSEN:**

[LAUGHS] No, it's good. It says "respect and courtesy build reputations, networks, and trust." That seems important in your teaching. So I'm wondering how your focus on helping students cultivate professionalism kind of plays out in the course. How do you teach that?

**GARY**

**GENSLER:**

So I think that each of us that walk into a classroom have a big responsibility. It's such a privilege to be at MIT with this incredible student body and faculty and staff. But I feel that we have this responsibility that goes beyond our domain knowledge.

Of course, I'm in the classroom teaching finance and technology and this intersection of how machine learning and blockchain technology and Internet of Things is changing the world of finance. But I also think that when I look back at the faculty members I learned the most from when I went-- I went to Wharton-- it was not about the domain knowledge of accounting or finance or linear algebra or biology.

It was more about values. It was more about professionalism. And I've been honored to work at very high levels of professionalism. Often, the race goes to the person who's prepped the most, who's been courteous, who listens as much as they talk, who asks questions that are relevant.

And I come back to that, not just in the classroom, but I offer lunches to the students. They sign up in an open signup forum where up to eight students can sign up. And I usually do this in person.

But what I found in this COVID time, there was such a demand that I set up lunches twice a week all through the six weeks. And they were nearly always booked with eight students. And we would just have no agenda other than we would talk about careers and professionalism and the like. So maybe for some small percentage of the students, it will stick.

And then I usually end my last lecture in every one of my classes, and I do a quote from Benjamin Franklin. And Benjamin Franklin, believe it or not, spoke about money. So I figure I get a little bit of a pass if I get hokey on the last day.

And I bring Benjamin Franklin and this wonderful, warm quote that you can look up about Benjamin Franklin and money. But what he really is talking about is paying it forward. He talks about if you should-- somebody does you a favor. The way that you repay the favor is doing the favor to others. And he says this is the best form of money he knows-- to redo a favor by paying it back to others.

I feel that those of us who are privileged to be in these positions, if we can share that, and it sticks with some percentage of the students, that's as important-- maybe more important-- than the domain knowledge and the domain analysis. I mean, I like to think we teach a lot more than knowledge, that we teach a way of thinking.

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**SARAH**

**HANSEN:**

If you're ready to learn more about FinTech, you can visit Professor Gensler's course materials on our MIT OpenCourseWare website. And if you're an educator who reuses the materials in your own teaching, call or write to us to share your story. You'll help inspire others.

Thank you so much for listening. And if you like what you've heard so far, please consider leaving us a review wherever you're listening to this podcast today. Signing off from Cambridge, Massachusetts, I'm Sarah Hansen from MIT OpenCourseWare.

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