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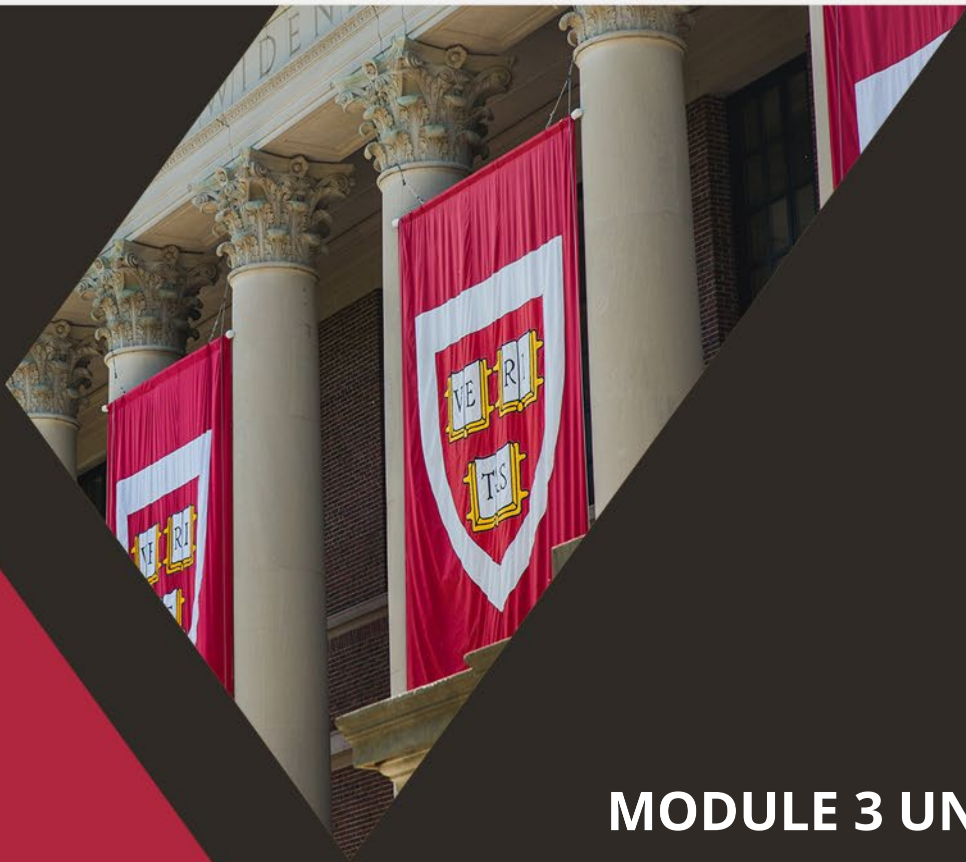

MODULE 3 UNIT 2
Video 1 Transcript

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LAUREN COHEN: We're very excited to now get a chance to talk to founder Christina Qi about what's been happening at Domeyard since. So it turns out the only thing that moves faster than the high-frequency trading at the firm is how quickly they have to be able to innovate and change paths in order to keep up with changing market conditions and new competitors.

So we're really excited and interested to see what Christina has done to reposition the firm to point it toward the future, and with that – Christina Qi.

CHRISTINA QI: So my name is Christina Qi, and my title is I'm the co-founder and partner of Domeyard LP.

What led you to start a high-frequency trading firm?

CHRISTINA QI: Seven years ago I had been— I was student back then actually, and I had a couple of experiences working, interning in the financial industry, primarily, you know, on different trading desks and also different locations around the world. And, you know, while they were great experiences, I think back then there wasn't a lot of focus on, you know, technology and on quantitative techniques in general, and quantitative trading. And so. for us, we really wanted to combine, you know, science with finance and, you know, bring more of that quantitative skill set into the industry, and back then there wasn't a lot of reception to that idea, you know, at that time. And so we decided well, if no one's going to use our strategies, we might as well start a separate company, you know, and go about just seeing if we can, you know, do it ourselves, I guess, if no one else wanted to do it.

And it turned out decently well. It was a really rough start for us because we were, you know, you can probably tell that we were young and quite inexperienced starting right out of college, but I think we, you know, mainly started it out of passion to be honest. It took us, you know, two and a half years to kind of get to that launching point when we finally launched the fund. And then the rest was kind of just history, you know. We started with pretty much a thousand dollars of my savings in a bank account. And then now we're, you know, we trade up to four billion in volume per day now; that's, you know, billion, with a B, which is just surreal to me, but it's been a crazy seven years.

How are technologies such as machine learning and AI improving your trading?

CHRSTINA QI: There's some misconceptions I think about AI in our industry, and then there are some areas that, specifically as a firm, we do, you know, we are using a little bit of machine learning. So basically what we do is, in high-frequency trading, we're characterized by very fast trades and a lot of them. So every day, you know, we might be trading maybe making 25,000 trades a day.

The reason why, you know, we may not use machine learning as much as people expect is because a lot of the machine learning techniques when you look at deep learning, machine learning, all the, you know, more deeper aspects of machine learning, it's slow. The computing time, you know, would need to be as fast as possible. And those are the things that we have to be aware of is how much, how complicated our strategies are; if it's really complicated by nature, you know, then the compute time takes longer. So, we, you know, debate between either having really fast strategies like that or having these really sophisticated strategies we call them.

How does Domeyard apply machine learning in its financial trading?

CHRISTINA QI: I'll give you some examples of how we do use a little bit of machine learning and AI in the technique; so, we can use machine learning in our backtesting. You know, before we run any strategy live, we have to first test it on historical data, basically. So, let's test it out and see how our strategy would have done back in 2008, you know, that'd be interesting to see. And maybe see how it reacts to certain events even in the last year for instance, or in the last month. So that's called backtesting, and we can use some machine learning there to interpret that, interpret the strategy and how it did, and also, you know, to see how it would do when running it in a backtest.

And then we also use machine learning for strategy selection as well. So, maybe we have, I don't know, 400 different strategies, you know, that we can pick and choose when to use throughout the day. But there's a lot of quant funds out there, and I think, you know, in recent years, quant has become one of the most popular areas of, you know, launching a hedge fund these days, one of the categories that we're seeing. But you know, in reality, when you look at the number of quant funds that have successfully used deep learning in their strategies, it's not a lot. I think it's just people haven't taken advantage yet or found the, you know, the perfect area to kind of use those opportunities, just because we have to deal with so much data coming in.

Would you characterize Domeyard's strategy for growth as aiming for greater breadth by diversifying into new markets, or greater depth by focusing on a few select markets?

CHRISTINA QI: For us as we're growing and expanding, it's a question of breath or depth. You know, do we want to expand to every single market out there, all around the world, and trade on every single venue, you know, or should we be focusing more within, you know, one or two markets for instance, and really digging deep, you know.

For us historically, we've kind of done a little bit of both. You know, it's important to have the breadth because it diversifies your exposure actually; for every fund I think that's very important. You don't want to just be on one exchange because if that exchange fails, you know, you never know, right? It could be a very bad scenario. So that's the breadth area.

And then, in terms of depth, of course, that's also very important, you know. It's very expensive to go to any exchange. You know, to give you a sense – CME is Chicago Mercantile Exchange out in Chicago and it's you know, one of the largest exchanges in the world, but also very expensive. So for us to be – it's called a CME member – you know, to get the membership rates that we need— because we trade so many times a day, we need cheaper fees right, from the exchange. To get the cheaper fees we had to pay I think well over a million dollars to buy all the different seats on the exchange. But because it's so expensive, we don't want to just waste our time and just trade one or two different products, right? It makes sense to dig deeper and be like, okay, let's squeeze out every ounce of value we can because of how much we pay to get involved in this. You know, we committed to it, it's important for us to kind of stick with it and see, you know, and delve deeper to see how much value we can get.

As a hedge fund, is Domeyard concerned with building infrastructure for trading at higher speeds, or developing stronger signals?

CHRISTINA QI: Every year a new server gets released and comes out, a new FPGA or something, and it's super expensive, you know, might be like 50 thousand dollars or even more than that, maybe a couple million depending on, you know, how customized you want it to be. And when it comes out, do we buy that new server, buy that new hardware, you know and then ship it out to all the exchanges that we're co-located in, and play the kind of – we call it playing the hardware game – and that makes us maybe one, maybe a nanosecond these days, faster than our competitor, you know. Is that worth it? Or the, you know, the other question is: is it better to focus on sophistication of your strategy? You know, using a little bit more, maybe seeing if we could use machine learning, you know, and sacrificing some speed, and being a little bit slower, you know.

And to be honest, I think every company, it's up to every company to find the balance. Every company is different. There are firms out there in the industry that do play the hardware game every year and they do extremely well for themselves; a lot of them have had record years this year. We're still considered one of the faster, you know, competitors in the market right now, but we're not the fastest, you know, and that's okay. That's not the goal here. Our goal here is let's see if we can have a little bit more sophistication in our strategies as well. And still, you know, we're still in the realm of high-frequency trading, but just still, you know, seeing if there's other ways to deploy our capital as well and maintain that edge that we need to be fast enough.

What measures have been put in place to regulate high-frequency trading?

CHRISTINA QI: In recent years, you know, we've seen a couple of new regulations kind of develop and come to fruition, and a lot of these address not really specifically high-frequency trading, but they'll address algorithmic trading or electronic trading, which is kind of a broader set of, you know, quantitative trading strategies basically. It's any strategy that uses or relies on a computer to place the trade, instead of a human.

One of the biggest ones in recent years that just came out, you know, and started to be implemented is called MiFID II, which is actually, you know, affects the UK and, well, the EU specifically. And, you know, for MiFID II, there have been MiFID II equivalents in all these different countries as well; so I know Japan is implementing a similar one.

It has affected a variety of, you know, different firms in different ways. There's a difference between a hedge fund and a proprietary trading firm. Hedge funds are, kind of, that's what we are. So basically, we manage other people's capital externally, and because we manage other people's capital, we've already been subject to very strict reporting requirements to begin with. The biggest things that affect us were just because we had European clients to begin with, and so we had stricter rules on solicitation, stricter rules on, you know, we had to be able to justify some of the reverse solicitations that happened, which basically means justifying that they reached out to us, and that we did not do any marketing whatsoever. You know, that they're the ones that reached out to us, and having emails and proof that kind of that happened, and so…

There's the other category of what's called a proprietary trading firm, or people call it a prop shop. What a prop shop is basically, imagine if you work at a prop shop, you're basically managing the CEO's money. So it's internal capital; usually the person who started the business, it's their own, you know, personal capital that you're trading. Usually it's a lot smaller, so these companies are a lot smaller in size. But there have been regulations that have affected that as well. So now, people who start these proprietary firms, you know, they may be required to do a lot more reporting than they're used to, you know. They're used to being kind of under the radar and not having to report anything, because it's your own money. But nowadays with, you know, the new regulations coming out, it's becoming more of a requirement to do a little bit of, you know, a little bit more reporting than you might be used to. So it's affected rules on, you know, co-location as well. It's affected rules on minimum tick size, which is basically the minimum amount of money you're allowed to, you know, to trade and to take, you know, take a part of. And so it's affected all kinds of different things out there.