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# Episode 1: Artificial Intelligence in Financial Services

JONATHAN: Hi there, and welcome to the latest Inside Financial Services podcast. I'm your host Jonathan Hanst, joined today by Emily Sackett. What's up Emily?

EMILY: Hey Jonathan. How's it going?

JONATHAN: Today's topic is going to be artificial intelligence, or AI, in financial services, and we're going to talk about how AI is disrupting the industry and what opportunities this creates for listeners in our audience. So why don't we start here. What is artificial intelligence, and when should I fear for my safety?

EMILY: Immediately. No, actually AI is something that a lot of us use every day. So, when you ask Siri to give you a weather update, you're using AI. Or if your toddler asked Alexa to play Baby Shark again…

JONATHAN: No! Make it stop...

EMILY: But, that is artificial intelligence. Basically, technology that analyzes data and makes judgment-based decisions, a lot like what humans do. It's not quite like the human brain, because AI technology can quickly process a ton of data to support its decisions. So, this ability of AI to kind of mimic and speed up human analysis makes it really ideal for automating judgment-intensive tasks and helping humans with advanced decision support. And both of those are really important to financial institutions, obviously.

JONATHAN: But, where does machine learning come into this? That's a term you hear a lot as well…machine learning.

EMILY: So, machine learning is a core component of artificial intelligence. It provides computers with this ability to continually learn without having to be explicitly programmed.

JONATHAN: So, they can learn all by themselves, which kind of sounds like a HAL 9000 scenario.

EMILY: Yeah, but it's actually really cool. Computers can learn by evaluating huge amounts of data to identify patterns between the inputs they're receiving and outcomes. So, as long as these computers are exposed to new data, they refine their own internal algorithms and improve their accuracy without any kind of human intervention.

JONATHAN: As far as AI in the financial services industry specifically, what is it doing there?

EMILY: So, just like AI is becoming part of our everyday lives, AI is changing and disrupting financial services too. It's enabling new approaches for things like managing customers, managing risks and operations. There are some analysts who believe that AI is the future of financial services. But its most disruptive impact is probably going to be a shift in the competitive balance. So, developing applications that use AI requires huge IT investments, and you also need really large data sets that can support machine learning like we talked about earlier. And you need an IT department with advanced skills. This creates a sort of competitive advantage for large financial institutions which have tons of customer and transaction data, and they also have the resources to invest in AI talent and technology. These larger financial institutions are already using AI to manage risks and lower their costs and improve their customers' experiences. So, as the sophistication and use of AI grows, it could become harder for these smaller financial institutions to keep up.

JONATHAN: Is this all bad news for the smaller financial firms?

EMILY: Well, actually no, you don't have to count out the little guys yet. AI has advanced really quickly in the past few years because of the explosion of available data. And, also along with that, the improved access to powerful computer resources provided by cloud computing. So, the leaders in cloud computing like Amazon, Google and Microsoft, they're also the leaders in artificial intelligence, and they offer AI tools and services to companies as a service. So, this allows smaller financial institutions to leverage these services to develop their own AI applications. Also, even on top of that, there's a lot of other technology companies out there that are developing AI applications that financial institutions of any size will be able to leverage.

JONATHAN: With Google, Amazon and other big tech companies investing so heavily in AI, are they a threat to disrupt even the biggest financial institutions?

EMILY: The big consumer tech companies have kind of built themselves around the customer experience that they can provide, and they continue to improve this experience by investing in artificial intelligence. So financial institutions, even the largest ones, are worried these companies will leverage AI to better understand customer needs and then provide more personalized financial recommendations, which would allow them to own the customer relationship and push these financial institutions more to the background.

JONATHAN: You said before that the larger financial institutions are already using AI applications today. Give us an example.

EMILY: The most visible use of AI today includes chatbots. So, financial institutions are using an AI technology called natural language processing. This processing enables chatbots to conduct realistic text and voice conversations with customers. So today most large financial institutions have chatbots in place, like Bank of America's Erica or Capital One’s Eno…

JONATHAN: So that was not actually Brian Eno that I was talking with the other day…

EMILY: Unfortunately not, I mean maybe it was, but probably not.

JONATHAN: Okay.

 

EMILY: But these chatbots, they use machine learning to review conversations between customers and human contact center agents in order to improve their own customer interactions, which allows the chatbots to handle increasingly complex customer transactions.

JONATHAN: Aside from chatbots, how else are financial institutions using AI?

EMILY: I would say that financial crime is definitely one of the most developed use cases for AI. Banks have, for a long time, had systems in place to identify financial crime, but criminals are pretty sophisticated, and they constantly are changing their techniques to kind of circumvent the predefined rules built into these systems. So, AI is an ideal technology for addressing this, because it uses machine learning to adjust its algorithms as the criminals change their tactics. AI systems can also analyze large amounts of data in real-time. It allows them to incorporate new sources of data into their financial crime monitoring.

JONATHAN: What kind of crime are we talking about?

EMILY: HSBC uses AI to spot potential money laundering. And then you've got companies like Visa, and they're using AI to detect credit card fraud. Or even NASDAQ and the other exchanges sometimes we use AI to identify illegal trading.

JONATHAN: Could AI also play a role in risk management?

EMILY: Yeah. For example, AI can support credit underwriting by allowing banks and fintech firms to evaluate alternative sources of data when making credit decisions. So, you've got companies like PayPal and Square that offer small business loans to their merchants based just on internal transaction data. AI also allows lenders to make credit decisions more quickly. So, with a company like Citibank, they're already using AI to make real-time decisions when customers request line of credit increases.

JONATHAN: This means if I'm rude to the chatbot, it could turn me down for a loan.

EMILY: Well, it's not technically the same AI engine powering the chatbots and the credit review. I don't think that civility is one of the factors used in credit underwriting, so…

JONATHAN: Okay, good.  To be safe, I'm going to start being nicer to my devices.

EMILY: I think that's a good choice.

JONATHAN: Are there examples of financial institutions using AI in investment management or capital markets?

EMILY: Yeah, robo-advisors are a great example of a new service enabled by AI. And, asset managers are also using AI to evaluate new forms of data to identify new trading opportunities. So, this includes using computer vision to analyze satellite images. And also like the natural language processing we talked about before, they're using that to extract data from corporate earnings releases as well.

 

JONATHAN: Clearly this technology offers a lot of opportunities for financial institutions, but beyond the money to invest and the people that they need to have, what other obstacles do financial institutions face in using AI?

> EMILY: Yeah, that's a really great question, and there are a couple. Probably a lack of transparency because AI algorithms are sort of, by nature, opaque. They don't learn in the same way that humans do, so it's not always super clear-cut how some AI algorithms reach their conclusions. Of course this is problematic in any industry, but it's especially problematic in financial services, because you have institutions that are needing to prove to their regulators that their algorithms treat all the customers fairly and comply with money laundering, risk, other industry regulations. Kind of difficult to demonstrate with AI algorithms. Another hurdle is the resistance from consumers and regulators about how consumer data is stored, shared and leveraged. And if this growing resistance leads to more stringent consumer data regulations, it could significantly hamper the growth of artificial intelligence.

JONATHAN: What are some things our audience can do to help their financial institution clients?

> EMILY: AI does really create a number of sales and consulting opportunities. Financial institutions need high performance computing resources in order to train and then operate AI algorithms. So, they'll want AI platforms with pre-build algorithms and machine learning libraries to help build these new applications. And they'll also need image recognition and natural language processing software, data management tools and probably also third-party data sets to complement their internal data. Services are also a really big need for financial institutions with AI, because even these really large financial institutions don't have enough staff with the skill sets that they need. So there's a big opportunity for professional services firms and IT service providers to provide those financial institutions with advisory, consulting, IT services that are all related to AI strategy, development and, ultimately, deployment. Financial institutions also are going to really need AI-related BPO and IT outsourcing services. So yeah, there's a lot of opportunity in that regard.

JONATHAN: Yeah, it sounds like there's a ton. Well, listen, thank you for talking with us, Emily.

> EMILY: Yeah, my pleasure, Jonathan. Don't forget to be nice to the chatbots just in case.

JONATHAN: Yeah, now I'm nervous actually. Well, that's all for the Inside Financial Services podcast. My name is Jonathan Hanst. Thanks again to Emily Sackett for joining us, and we'll see you next time.

 