EQUITY

PODCAST: AI and Machine Learning: A View from Silicon Valley

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Whether most of us realize it or not, Artificial Intelligence (AI) has become part of our daily lives. In our latest Talking Markets podcast, two Silicon Valley executives from AI-oriented businesses—Ed Abbo and Alston Ghafourifar—join Franklin Equity Group Research Analyst Ryan Biggs to discuss the state of AI technology, and the urgency for businesses to transform.

Here are some highlights of the views of speakers represented in the podcast:

- Ed Abbo: I think most technology cycles have the kind of hype that starts, and then there is a trough of disillusionment when there is a huge promise, and people can't figure out how to harness it. Then emerging out of it is real applications and real uses of the technology.
- Alston Ghafourifar: The scientific challenge of accomplishing exceptional things and teaching machines to do very, very unique jobs, or very cognitive tasks is a difficult scientific problem.
- Ed Abbo: The fact of the matter is most companies have a lot of data that goes unused, so it's not tapped. It's sitting in these data historians and it's not tapped.
- Alston Ghafourifar: Robotic process automation has been around for a long time and it does some amazing things, but a limitation is that it can require quite a significant organizational human effort and energy to manage it.

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TALKING MARKETS WITH FRANKLIN TEMPLETON INVESTMENTS

The full transcript of the podcast follows.

Host/Richard Banks: Hello and welcome to Talking Markets with Franklin Templeton Investments: exclusive and unique insights from Franklin Templeton. I'm your host, Richard Banks.

Ahead on this episode, sitting down with Silicon Valley companies trying to lead the way in Artificial Intelligence. Alston Ghafourifar, CEO of AI startup, Entefy, on the state of AI technology and the opportunities that come with it.

Plus, the race he and Ed Abbo, president and chief technology officer at C3 IoT, are seeing for companies to transform.

Host/Richard Banks: Hear about the signs that may indicate whether companies are truly committed and prepared to adopt the technology. Speaking with Ed and Alston is Ryan Biggs, research analyst with Franklin Equity Group. We hope you enjoy their conversation.

Ryan Biggs: Alston and Ed, why did you start a company in this space, what did you see in terms of the market and technology?

Alston Ghafourifar: So my sister and I co-founded the company together, and really, for us, the technology was kind of a necessary evil. It was a "by the way." We wanted to solve the information overload problem. We just saw this tidal wave that never had a trough underneath it, it just was a continued incline of activity in the form of unstructured data being created, shared and disseminated—human-generated information, machine-generated data of all types—and so what we wanted to do was really, create utilities that could allow people—individual people—to make sense out of all this information to be more productive, right? So, workforce productivity and by extension individual productivity. At the end of the day, we are the same people who walk into the office and go home and deal with our families and things like that, so it was more of an information overload problem that we originally are trying to solve, and it turned out that information overload is unique in that it's not a robotic process, right?

It doesn't conform to any real significant rules. Its domain space is too diverse, so traditional software and rules-based systems just couldn't work. So it got us, kind of organically, to start looking at machine intelligence and machine learning as a core and then the broader spectrum of AI which includes a variety of things that are not machine learning, actually as a way to handle the very diverse landscape that is everybody's data, whether it's in the enterprise or at home. And so, from kind of that transition, it was pretty clear within the first year or two of the business that we were not just building smart applications and smart software. We were building an intelligence that was able to sort of understand the structure within the data necessary to then create smart applications and structure. And this goes back to the data question that was brought up earlier and for us, data is important, but it's not the most important. You can have the same exact data being processed by the dozens of different algorithms and get vastly, vastly different results.

At the end of the day, we are not method-driven, we are results-driven, and the businesses have to see results. The artfulness and constantly churning the data you have, the data you want to have, and letting the machine understand not just how to extract optimal value out of the data, but how to turn that data into something that can then be processed by something else. That was a fully integrated sort of thinking engine that's beyond just a single set of models or beyond a single set of approaches. That's what kind of got us to start saying we had much broader applicability in what we were developing than just the applications themselves. We are really dealing at a much more fundamental kind of intelligence pipeline and intelligence revolution and so that's kind of how the MIMI [Machine Intelligence in Medical Imaging] platform evolved that. It was really an information overload issue. We wanted to solve that issue and AI machine learning became the number one spear in that fight.

Ryan Biggs: Ed?

Ed Abbo: This is actually my fourth decade in information technology in Silicon Valley. My first decade, I would say, was with a company called—little known at the time—Oracle in the 1980s, and then I joined an entrepreneur by the name of Tom Siebel at Siebel Systems. And each one of those companies is basically recognizing that there was a step function change in technology that you could then take and apply to improve business. And I would say in 2008, when we took a step back, we recognize that a lot of the internet companies were actually not using the traditional technologies that most companies use. And so, the idea was to bring the technology the consumer internet companies were using to business and that was kind of the impetus behind us doing what we did. Now the challenge obviously, is building any business applications on top of the open-source.

Most companies don't have the skillset internally. So, we set out to essentially simplify the design, development and scaling of AI applications in businesses. That's the gap that we saw, and that's the gap that we basically filled, so you can take teams of literally three to five people, put them on a project for two to three months and have a production ready system that might be to improve the reliability of an aircraft, it might be to detect anti-money laundering, it might be to detect who is going to come down with opioid addiction. So, it's basically small teams, getting the job done very quickly on a technology platform, so that's why we started the company.

Ryan Biggs: There is a lot of media attention on AI right now. Is it making business easier or harder, is it opening more doors or is it creating unrealistic expectations and actually making it more challenging to close deals?

Ed Abbo: I think most technology cycles have kind of the hype that starts and then there is what's called the "trough of disillusionment" when there is a huge promise, and people can't figure out how to harness it and then emerging out of it is real applications and real uses of the technology. But I will say that what's different this time around is the level of engagement. Most of my career has been talking to chief information officers of companies and now, what we are doing is basically hosting executive teams where the CEO is coming in with their executive team to come spend time with us in Silicon Valley and other Silicon Valley companies, and that's different. There is a level of urgency, a sense of urgency that they need to transform their businesses otherwise somebody is going to put them out of business, and so the level of engagement is really high and we find that people are highly engaged in trying to figure this out.

Alston Ghafourifar: To your point, you get an entire executive team of a company of 100,000+ employees to be able to come to even small startups like us and have an actual dedicated conversation and that doesn't happen in almost any other conversation especially right out the gate. But at the same time the enhanced attention does sometimes set unreasonable expectations on the part of the executives.

Ryan Biggs: Is the technology advanced enough that we can deliver on people's expectations?

Ed Abbo: I would say that where most companies are basically still in the dabbling stage, Ryan said, it's basically they have hired what I would call a small group of qualified data scientists, and I will come back to this point, but there are very few experienced, qualified data scientists. There are a lot of people with data science on their business cards, but very few that actually have deployed large-scale systems. And the challenge—so I kind of equate this to climbing Everest—you're at base camp if you have taken some data from systems and manipulated through a machine learning model, you have something but that's really the beginning of a pretty long journey to get its operationalized so that improvement in the process actually manifests itself in earnings improvements or revenue growth and so what's required is basically to integrate a series of data silos, typically and unify those data and keep those data current and then apply machine learning to that to drive process efficiency and the tools are not there today to basically be able to do that very easily and so actually the most qualified companies that come to us basically tried to do this over a year or two, and finally kind of have given up and said there's got to be a better way, so that's our perspective on it.

Ryan Biggs: What is the data readiness of customers? Are certain industries more ready for than others, is anyone ready for it, who is architecting their organizations the right way?

Ed Abbo: The fact of the matter is most companies have a lot of data that goes unused, so it's not tapped. It's sitting in these data historians and it's not tapped. Now the analogy I use with my kids is like having a jigsaw puzzle with a thousand pieces because the data is in all these silos, so you can't tell what the state of the business is unless you assemble the jigsaw puzzle and which means integrate the data across the silos into an image so you can see which customers are buying which products and which suppliers are producing parts that are defective. These are critical questions for a business, but they can't answer it because the data are across thousands of different systems that aren't integrated. So we spent the first three years of our company basically building out capabilities to very rapidly integrate systems, correlate the data and keep that data image current, so my analogy about the jigsaw puzzle—it's not sufficient to assemble the jigsaw puzzle because the data are changing all the time, so it's like watching TV, so if you could get an image of your business and keep it current, so you know who's buying what, when, where, etc. Then you can basically apply machine learning to it, so I would say data are available, the challenge is to integrate it, correlate it and keep it current.

Alston Ghafourifar: There are two aspects to the data problem, right? The scientific challenge of accomplishing exceptional things and teaching machines to do very, very unique jobs, or very cognitive tasks is a difficult scientific problem. So you could have the perfect data in the world and the wrong learning algorithms are insufficient environments to compute and learn will not get you any closer than they did 30 years ago, so that's one specter of problems. Let's take for granted for a moment that we are talking that a big huge shift in the enterprise is going to made in terms of ROI [return on investment] on the stuff that is doable. So, we all know the stuff that we would love to accomplish but let's just imagine that a big bulk of the ROI is things that you can get smart people into a room with the right data at hand and you can artfully combine these components into a case to create ROI and to enhance my business process.

When it comes to the data readiness, because this comes up a lot when we deal with customers, I believe it's 100% a will problem as long as the customers keeping the data of course. We have had customers who have gold that they could use and we find out that they are dumping that data every month because they don't want to pay the extra storage, the S3 buckets to store things and it pains me, right? But that aside, if you look at it as a will problem, it's no different than any other type of organizational change, it's no different than any other type of messiness and discovery work. It can be resolved, it's just a matter of whether the—I don't want to say entirely the executive level exclusively—but kind of the upper third of an organization, it really has to be embodied fully because we all know we want to drive value and create ROI and grow, but knowing it and wanting it and then having the discipline to do it are entirely different things.

So for me, what our first conversation when we talk to customers and it doesn't matter if you are a 150-person small or growing medium business in a very specific niche domain or a $100 billion+ public company in health care or tech, it's the same ultimate problem. If you don't have the organizational will to address the data readiness problem from a system's perspective, then you are not going to actually be leading the stack and so that's what kind of—when we filter our customers, that's really the first lens. Like we start to see how they actually spent like are they just talking about it and wanting labs work and a few Ph.D.s to be toiling with things and publish some papers or have they actually spent meaningful resources on creating organizations designed to have at least a process for how they aggregate, transform and move information to other systems.

Ryan Biggs: You are in a room full of investors, without us being too technical and wanting to get into algorithms and kind of machine learning techniques with, what are the right questions to be asking to gauge if they are really leaning into this machine learning world and they are kind of architecting the pipes of their organization to really leverage the tools you guys are bringing them?

Alston Ghafourifar: A good indicator is how the company is thinking about their process automation, their workflow automation strategy, right? So robotic process automation, RPA, has been around for a long time and it does some amazing things, there are use cases and companies for quite some time who have derived incredible ROI out of automating processes. The limitation of that—I won't even say it's a problem—it's just the limitation of the approach is that it requires quite a significant organizational kind of human effort and energy to manage it, keep it updated, right?

If a company has started to genuinely spend resources enhancing their RPA systems or whatever they are using for workflow management, for process automation, for machine automation, predictive maintenance, what have you, depending your sector, if they have spent any real reasonable money there, they are on the right track because RPA is moving into IPA which is intelligent process automation, where you use AI machine learning systems to instruct those types of tools and capabilities to perform better and alleviate the human burden. So how have they evolved automation, let's put it that way—have they modernized that approach or are they still doing it the way it was done in the 1990s?

Ed Abbo: I would add to that, I think it's relatively straightforward. First question is—is the CEO engaged? Because if the CEO is not engaged or the COO—somebody who is really empowered to change the organization—then I think the chances are relatively slim that digital transformation will occur in that company. And then second, do they have a business executive that reports to them who is in charge and that's typically there is a title called chief digital officer. That is a very senior executive who understands the hardest part of this is now a change management problem, which is how do you have the right incentives in place because it's not business as usual. When you change a process, you are basically fundamentally changing the structure of the organization, you are changing the incentive compensation, you are changing everything about it and so that's actually the hard work, in order to get the business value or to fundamentally change the competitive dynamics of a company. So that's the hard part—is the CEO engaged? Is the management team all on board?

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What are the Risks?

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