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Markets in Transition | Episode 7
Josh Crumb, Founder & CEO, Abaxx Technologies

This week on our *Markets in Transition* series, we're celebrating our 200th podcast episode by welcoming Josh Crumb, the Founder & CEO of Abaxx Technologies, back into the studio. David Greely sits down with Josh to discuss what's been learned and accomplished so far in turning the Smarter Markets vision into a reality.

Josh Crumb (00s):

I think all of the foundation is absolutely there, but you know, this is a long-term build. We have been at this, we built an excellent foundation, I think a unique foundation that probably doesn't exist anywhere else in market infrastructure. And I think the next few years, it's about scaling it to the ambitions and the blueprint that we have.

Announcer (19s):

Welcome to SmarterMarkets, a weekly podcast featuring the icons and entrepreneurs of technology, commodities, and finance ranting on the inadequacies of our systems and riffing on ideas for how to solve them. Together we examine the questions: are we facing a crisis of information or a crisis of trust, and will building smarter markets be the antidote?

This episode is brought to you in part by Abaxx Exchange, where trading in centrally cleared, physically deliverable LNG and carbon futures contracts is now underway, ready for SmarterMarkets.

David Greely (01m 02s):

Welcome back to Markets in Transition on SmarterMarkets. I am Dave Greely, Chief Economist at Abaxx Technologies. Our guest today is Josh Crumb, Founder and CEO of Abaxx Technologies. Josh is joining us to mark this 200th episode of SmarterMarkets. We will be discussing what we have learned and what's been accomplished so far in turning this Smarter Markets vision into a reality. Hello Josh. Welcome back to SmarterMarkets.

Josh Crumb (01m 30s):

Hey Dave.

David Greely (01m 32s):

You know, this is our 200th episode of SmarterMarkets and I'm glad to have you here with me today, Josh, to reflect on that journey and talk about what's next and while SmarterMarkets is the title of the podcast, Smarter Markets is also how we refer to the vision that ties together the many dimensions of Abaxx and I would describe the Smarter Market's vision as one of a world in which we as individuals are able to work together through markets that are empowered by better pricing, benchmarks, tools, technology to create market-based solutions to the biggest challenges that we face together and I wanted to ask you, after 200 episodes of conversations on how to build Smarter Markets, how has your vision for Smarter Markets come into sharper focus and how has this Smarter Market's vision guided you as you've built Abaxx Technologies?

Josh Crumb (02m 27s):

Yeah, great it's a good question. I know we have reflected on this on a few episodes, I think the hundredth episode with Robert Friedland and I think at that point we had talked about how it's almost like an impressionist painting, you know, in some ways where you kind of know where the world needs to head. But you know, as you go it becomes more and more in focus and I think that's absolutely the case. I think there is a lot of these topics we will talk through today. But first I have to recognize in preparing for this call, you know, I think the last few times I have been on, it was always a vision at this point, as of June 28, we launched our new Commodity Futures Exchange and Clearinghouse with a brand new state-of-the-art tech stack and so now we are part of markets history with, you know, having that first trade of Gulf Coast physical LNG trading, FOB Gulf of Mexico. It's nice to be part of markets history and so absolutely we now have the machine to help keep zooming on all these topics and part of the vision, you know, execute and make them happen. So that's the most exciting part and the most, you know, the biggest change is, you know, we now have the rest of the tools to make this a reality.

David Greely (03m 31s):

And that's a big shift and I wanted to ask you about a couple other shifts as well, because two of the prominent dimensions of Abaxx that we have discussed over the years and that people are likely familiar with are the focus on the development of market infrastructure, like the exchange and also the financial technology. Now you are early to see the need for a new commodity futures exchange in clearinghouse and for a new more secure ways of handling our digital identities and both of those needs are now being made apparent by some big seismic shifts that everyone is seeing, put them under the umbrella of the energy transition to a low carbon economy, making clear the need for new commodities markets and exchanges and then the rise in rapid growth of artificial intelligence, making it more clear that we need better ways to handle our digital identities. How do you see both of these as game changers for driving the commercial need for what you are building at Abaxx maybe we could start with the energy transition piece and then come back to talk about artificial intelligence.

Josh Crumb (04m 37s):

These are the two key themes and again, I think going back to the impressionist painting analogy, we kind of knew the things we needed to build to be prepared with things that were likely coming. Now of course we had since we started this journey, we had two major sort of events, you know, obviously very outside of our control that sort of accelerated the need for all of the things that we're doing. One of course being Russia's invasion of the Ukraine and how that changed the global LNG and energy, energy landscape, you know, significantly as if it wasn't a big enough challenge what we had put in front of us with the energy transition. That was one thing, having more market infrastructure, having more competition in markets, having other players ready to pick up the shuffles so to speak, and try, you know, fix something. We are a couple years on now from the nickel market essentially breaking in one of the other major markets and yet there is still not another nickel contract traded globally.

Josh Crumb (05m 31s):

In my mind that's the competition issue and we need more people in the markets to be able to try new things and innovate again. We can spend a lot more time. I think there is some underlying themes there to dive into, but that was number one and then on the technology front of course, number two was the implementation of the transformer model in AI and what that's done for large language models. Sure, we can spend more time talking about probably even more interesting being a translator, not of just of words on a screen, but really being a world translator, a world model translator, things that are now being able to be done in the information landscape. These were two things that we obviously couldn't have predicted back when we started this journey, but again, both absolutely kind of reiterate the need for the products and the projects and the infrastructure we have been building.

Josh Crumb (06m 18s):

But you know, maybe one way to take this forward, you know, it's one of my favorite Robert Friedland stories. You know, of course Robert kicked off this whole podcast journey with us. One of my favorite Robert Friedland stories is when he goes back to those days with Steve Jobs and Reed College and him recalling back in the early days, Steve saying, holding up an etches sketch and saying one day we are going to have all of the sum total of human knowledge available on a tablet like this and I think that's incredible because you know, we are essentially there. We are very, very near there and that vision, which I am not sure I want to do the math, I will let Robert do the math of when that was. But the world is moving forward in just unimaginable ways and you know, Abaxx itself, you know the name Abaxx comes from essentially the predecessor of the Abacus.

Josh Crumb (07m 04s):

And that was really the first sort of human calculator was essentially drawing, you know, drawing on a sand table and of course we took the sand table into tablet form and that's really recognized as the invention of writing. Well now that tablet form is more than just our individual or collective group sitting around a sand table market in the sand and now we have all of human knowledge essentially at our fingertips. One thing that I wanted to go through here, I will just type it in right now. We built a rag or retrieval augmented generation engine of all 199 of our first episodes of the podcast. So I am just gonna type in, I am going to ask the first 199 episodes, what the top 10 themes discussed on SmarterMarkets are. So as I pull that up processing and this will get faster, okay, here we go.

Josh Crumb (07m 54s):

Let's see if we get this right. I think maybe you and I can just talk through these themes as retrieved almost instantly through 199 episodes. I don't know how many hours that would be. Probably ask that too. So theme number one, energy transition and I think probably we should score kind of discuss, I mean you, you have obviously been on the other side. A lot of these conversations actually just as I glance through these right now, in some ways I would probably score, you know, not that high where things are going, where

things are at a few years on. So I guess theme number one, energy transition. What do you think Dave? Like where are we at in this journey globally?

David Greely (08m 30s):

That's a great question. We are actually going to have that conversation in a few weeks at an FT event over in Singapore. When I think about where we are in the energy transition, some of the early podcasts with Jeff Curry in particular talking about putting a price on carbon, how are we doing it, putting a price on carbon. I would say that's been a big challenge. Certainly the voluntary carbon markets haven't moved forward as quickly as people had anticipated even two years ago. A lot of progress in the compliance markets but do we have a price on carbon that's guiding people's use, certainly not worldwide, certainly regionally and I think there's interesting decisions about how to move forward on that path. I think on the energy transition side, this idea of widespread electrification supported by low carbon renewables, it's interesting how it's playing out, right, there is tremendous growth in electric vehicles in China.

David Greely (09m 25s):

I don't think people thought China would be leading the way on that score, but China's certainly making a lot of progress. The use of LNG in trucking in China, I think people weren't anticipating that would be the way to displace oil. So I think it's playing out probably not as quickly as people anticipated, but I think in very new and interesting ways. One of the things that also comes to mind for me when thinking about energy transition is how much nuclear has been embraced. You know, when you see these AI centers that are being built out and the big tech companies securing nuclear reactors, the reopening of Three Mile Island in Pennsylvania kind of comes to mind how much that's been embraced with not a lot of pushback as far as I have seen. So that's another ground too, where, you know, on the one hand we knew there'd be a lot of demand for electricity and electrification coming off the energy transition. I don't think anybody realized how much demand would be coming because they didn't see the artificial intelligence demand for power and compute coming as fast as they did.

Josh Crumb (10m 29s):

Yeah, no, that's great and by the way, I think you have knocked out three or four themes in that one. But no, I mean you are absolutely right. You know, number one theme was energy transition. Two was carbon markets, which you touched on, which again, I think, you know, probably we were going to score it, particularly the voluntary markets. It's not looking like a great score right now. We absolutely need to make more progress on that. You touched on LNG I would say on the supply side, absolutely. The world has kind of fallen into place as at least as I expected and I would say, you know, even the work you and I did at Goldman 10, 12 years ago, maybe longer at this point, you know, mapping out the future of LNG, certainly the supply side is doing what we expected, right. Just the revolution and you know, associated gas production and exports from the US we are going to likely have Canada starting up, you know, if not now by the end of this year or definitely in next year, which is a major advance getting obviously in a ship closer route to Asia, you have seen expansion upon expansion in Qatar.

Josh Crumb (11m 31s):

So again, I think the supply side of the equation has been great. The demand response, the ability to displace Russian gas in Europe I think has been incredible and again, in many ways, you know, I like to say our physical infrastructure and being able to divert cargoes at that time worked better than our financial infrastructure. If I am going to be frank, our financial infrastructure was not set up to handle that crisis. We had firms going kind of cap in hand to central banks, including clearing houses to deal with that shock to the system but our physical supply chain did extremely well. So again, we can be very proud of the resiliency built in our global energy system. I would say a little disappointed that our financial systems and financial infrastructure still lacks some progress and we have had guests on the LNG side as well talking about the demand side, that a key piece of why there isn't better demand building, particularly in Asia where the natural demand is and will be for growth.

Josh Crumb (12m 27s):

And we don't have clear pricing. You know, we have had guests and clients recently saying, you know, when LNG is benchmarked to crude oil coming outta the Middle East at a volatile time, that doesn't make sense for us building up demand. Or when LNG is benchmarked on a ICE assessment that's essentially just abstracting the price of cold gas switching in Europe, you know, lignite and TTF, why are we talking about billions of customers paying for the price of lignite switching in Germany, it doesn't make sense. So pricing I think is still going to be a key part of building out that demand side, which is obviously the, the work that Abaxx has been doing along with a lot of our partners in the industry. It's gonna take time and I think that's a key part of it. So, sorry, getting off the list a little bit, let's just run through the list of topics because we are kind of hitting all of them, as you can imagine, right.

Josh Crumb (13m 15s):

Because they are interconnected, right? So we have energy transition, carbon markets, risk management, so we talked a little about that and state of risk management, commodity super cycle. We have geopolitics and energy market transparency and efficiency call that Blockchain and decentralization. We have technology and then we have sort of two themes around capital market investment and ESG investment. So again, these are all interrelated systems and I think we already knocked out a few of them that way. But you know, maybe let's turn to the related aspects of commodity Supercycle and capital investment, ESG investing. You know, we could probably blend those, you know, what is your feeling of where we at the Supercycle and CapEx Supercycle?

David Greely (13m 56s):

I think it's a great question because on the one hand it's another aspect of things that are playing out, but I don't think they played out the way people expected. If I go back to some of the conversations we were having a few years ago on the podcast, there was a lot of ESG, so it's going to be investor driven. We don't want to invest in say, fossil fuels, we want to invest in new types of infrastructure and then at a certain point people really started walking away from the ESG label. I think that really happened around that signal event that you referred to the Russian invasion of Ukraine and the European energy crisis and you saw that pendulum swing hard from a focus on energy sustainability to security and when you look at that, I think what's moved forward is a little bit more practicality in what that looks like.

David Greely (14m 48s):

And I think it also brings about when we say smarter markets are about empowering people, some of my favorite parts of the podcast are when I talk to people with an entrepreneurial bent who are out trying new things. So whether it's, you know, how do you get LNG into the retail markets in Asia and China so that you can help displace oil in some of those areas, whether it's people working on new forms of carbon capture and sequestration and being able to get those pricings, get those forward curves so that people can lay off the risk and get that investment capital they need. To me that's the most exciting. Of course, we have had things like the Inflation Reduction Act, which has made a lot of money available to go into these investments. China's directed a lot of money. If you look at what's happened in solar, you can't help but be impressed.

David Greely (15m 46s):

So certain technologies I think are really scaling faster than people thought they would. Money's flowed a lot of it directed by governments. I think we still need more on the market direction side. We got to get these prices right, we got to get these forward curves. We always talk about the US natural gas market as being an example. You look now the US is probably the biggest producer of oil in the history of the world, biggest producer of gas, largest exporter of LNG and a lot of what made that possible was fracking and the growth of that production and that was driven to a large extent by one technological breakthrough, but even more importantly being able to invest capital behind that technological innovation because you had the Henry Hub gas market, these producers were able to lay off risk and get the investment capital they needed to really build out a truly impressive industry and to me, that's kind of the model you want in these other areas that, you know, whether it's solar, LNG, all these investments we need, can entrepreneurs go to a market de-risk using a forward curve and use that de-risk position to get the investment capital they need and I think that, as you said, we just got the exchange launched a few months ago building up. But I think that to me is the aspiration that it becomes the exchange where that can happen and that's what I mean by building Smarter Markets.

Josh Crumb (17m 18s):

Yep. No, that's a great answer and I totally agree. I mean, I would like to say a physical supply chain going one way is just a financial supply chain going the other way and, and you need both to function, you know, hand in hand. You know, that's exactly why we focused, you know, in the globalization of commodities, the globalization of information, you know, that's why we focused on water commodities, on water buyer and seller of last resort markets because we think that's the bridge, you know, the bridge between local markets and look, we had a great series on history of markets and technology and it was kind of the same thing, right. The progression from technology at the time, you know, communication technology allowed us to get a message into a runner on the floor to, to get to it, into a trading pit, right?

Josh Crumb (18m 01s):

That was our communication technology at the time and so your markets were constrained by, you know, literally the physical space in the building to build trading pits. So we had venues like the NYMEX with less than, you know, 10 contracts for decades and then, you know, of course we had that great episode with Joe and Dan talking about the launch of Clear Port and being able to expand the, the NYMEX market from less than 10 markets and 10 pits, you know, to, you know, to listing thousands of products. We heard the, you

know, some of the discussions on that series about the internationalization, where some of these markets are now what used to be a US market and which used to be a very exclusive market at that of, you know, who could actually get that, you know, telex wire or whatever, you know, whatever got to the runner to get to the floor.

Josh Crumb (18m 43s):

We've now built some of these markets to be 30, 40% global liquidity of, you know, international orders and of course, you know, crypto has taken that to hyperscale. We are definitely seeing the, the growth of information technology, you know, be able to bring more access, faster access, you know, to the markets, which again, I guess blends into the technology theme. Back to my point this is exactly why, you know, why we have been building these markets to continue to bring that, you know, build that international bridge of commodity markets, which are all connected. But you know, to your point on, you know, before we obviously take a deeper dive on technology, I think, you know, the other important part of the capital flows, as you mentioned, a lot of it has been driven by government policy mandates, you know, subsidies, carrot sticks, which I think is a part of the equation.

Josh Crumb (19m 31s):

But, you know, one of the, one of the pieces that I would probably, you know, say that that's been a problem is I do think in the US and in Europe, I think the compliance, you know, screws have been screwed way, way too tight for innovators that do want to build, and I don't want to put this on governments and regulators to be honest. There's a lot of pieces of, you know, the commercial sector, you know, particularly large, you know, large oligopolistic type industries that have really made it very, very slow and challenging to get new ideas to the center of the market. That's something we really need to, you know, think through. Absolutely there has been a lot of technological progress and things like solar and wind, you know, again, look at the ability to actually produce growth of these physical supply chains in China and Asia versus the capacity.

Josh Crumb (20m 17s):

You know, sometimes I feel like you've got Elon Musk out there just kind of ignoring or breaking the rules in physical, you know, technological information or technological progress on manufacturing, you know, and sometimes it feels like he is one of one now, of course, you know, the west has absolutely been, you know a huge driver of software, you know, and again, this is an industry that does not have a reputation for asking permission. We see this huge innovation in this part of the business or you know, this part of the economy and software. But I really do think that you, you really have to look to Asia for, for leadership in and actually growth of manufacturing technologies, being able to build projects on time launching. We couldn't have fully seen that at the time, but I think it's, you know, led us to be very well positioned having our exchange based in Singapore. That's one thing that we, you know, we need to think about, you know, when we talk about getting capital to flow to these technologies, to the supercycle.

David Greely (21m 12s):

Yeah, as you said, you know, with the exchange launch, you got the LNG contracts out in trading, carbon emissions, offset unit contracts out in trading. So it's there, the foundations and the scale will come and I wanted to ask you, I want to get back to the technology point. One of the things I love talking with you about technology is I feel like you always see it from a slightly different perspective than I hear other people talking about it. So obviously everyone has been talking about artificial intelligence and LLM models, and I think a lot of the focus has been on how do I use this to create more content. So it's on the content creation side, talking with you, obviously that's a big piece, but then there's also the piece of how do I protect my content, how do I protect my IP so some AI doesn't come and take all of my intellectual property and absorb it and walk away with it.

David Greely (22m 07s):

How do you protect against that kind of, you know, high tech plagiarism in a way and then the other piece is on the, the content absorption side. You know, as we move into this world where there is going to be more and more and more content created, none of us humans are going to be able to keep up. You know, we are moving into a too long, didn't read kind of world, and how can you use this technology to help us bring it down to human scale so that we can actually absorb and be enriched by this sum total of human knowledge that's becoming available in a world where the amount of content being created by artificial intelligence is just going to be explosive. So I'm curious about your thoughts on that, because I have often heard you talk about it in terms of a lot of these things that you have been building on the technology side with the, the secure digital identity, the ID plus protocol AI has probably taken them from a nice to have, should have world to a must have world.

Josh Crumb (23m 13s):

And that was something we tried to get ahead of when we started this company, right. I mean our, you know, very ambitious, lofty goal was to fully occupy that space of all the things that are happening in software innovation, and then all of the, again, the move fast and break things and on the other side, you know, move slow and make sure, you know, you can minimize risk on the regulatory side, right. Again, that's where, where Abaxx this is obviously my passion is occupying that middle space where I, you know, where I do think probably, you know, four or five years ahead of, you know, people that would want to try to build, to build a clearinghouse, you know, to bring their new software innovation to the market and I think we are four or five years ahead of, you know, probably some of our big market infrastructure competitors on actually bringing new generations of technology into a regulated market, not because these aren't obviously fabulous tech companies.

Josh Crumb (24m 02s):

You know, by the way, if you look at something like ICE or CME or the Sibor, you know, any of these exchanges, they are technology companies, right? And when you talk about artificial intelligence and data, there's probably no area that's been moving faster on that front than the exchange landscape with high frequency trading and, and essentially the machine learning practices that we've been able to bring to very deterministic, you know, numerical systems like markets. Again, there's nothing new about artificial intelligence and things like numerical deterministic systems like markets, or I would even say something like video game and, you know, processing games with very tight rules. I think what's changed and, and where, sorry, maybe we, we should step back and just talk a little bit about the fundamental change, what went from machine learning to artificial intelligence and I would say it's really the transformer model.

Josh Crumb (24m 50s):

You know, Google's paper attention is all you need. So not only are we obviously investing in massive compute, so there's just the scalability of compute, but it's also just this fundamental ability to, maybe the best way to explain it is like, you know, we're all at a dinner table, right and our human brains can only, you know, handle so many conversations at once. You know, we only have so much attention to understand the context and the syntax and the emotion and try to maintain a memory of all those conversations and feedback with, you know, with the words you're saying at the dinner table. Well, the transformer model, what it can do is essentially instead of having conversations with, you know, four or five people or whatever our, our brains can handle at the table, it can have conversations with sort of everybody all at once and understand the intonation and the context.

Josh Crumb (25m 38s):

That was the beautiful, like the elegant beauty of the transformer model and the attention, the, the ability to basically have nodes that can maintain intention and specific knowledge that, you know, that you can kind of bring, you know, bring a whole world model out at once. All of these conversations, all of these words, you know, being processed at once and again, if we think about deterministic systems like markets, that was already happening, right, that was already happening, you know, finding these incredibly large inference models on stock prices or, or something like that, but now we can do that for basically, you know, language and knowledge and world models. I don't think anybody like can even like fully imagine what comes next as these things scale. So I like to frame it this way, you know, right now I believe hugging face, which is essentially the GitHub for open AI, you know, particularly what researchers are, are using in AI.

Josh Crumb (26m 28s):

I believe they asked me if there is about 5 million people currently working in AI developing products, working with products. Put it that in context, you know, it's estimated that software developers software engineers are probably, you know, somewhere in the 50 to a \$100 million range. So we have a sort of a 10 x just to get to the level of AI engineers and product builders, you know, getting to the point of where software is. But I actually don't think that's the right metric. If you think about something like Microsoft Excel, this is probably the most powerful computing platform that really changed global supply chains, global information processing, and we have, you know, it's estimated, I think we are, you know, somewhere between one and a half and 2 billion users of spreadsheets. So that's sort of the low code, no code way to use machine intelligence through the simple, you know, humble spreadsheet.

Josh Crumb (27m 17s):

And I think that's exactly what these tools can do, right. We are moving beyond just an inference machine to sort of an age of computer reasoning and the computer reasoning, particularly if you don't have to have coding skills. I am sure there's a lot of listeners on this podcast have no idea what hugging face or maybe even GitHub are, but they know what Microsoft Excel and these tools are gonna, in my view, take us to the, to the narrative and information processing age of Microsoft Excel, where you are literally gonna have billions

of people using these tools to do computer reasoning. So again, we are barely scratching the surface, but this is gonna happen incredibly fast.

David Greely (27m 55s):

And Josh, what's the risk in this incredibly fast transition, the risk that we need to be prepared to manage with better technology and better tools?

Josh Crumb (28m 05s):

One way to frame it is we have moved from being hunters and gatherers of information or at best living in an information mafia state, or some people have access to information and others don't and I go back to, you know, your and I background in economics this thing called the perfect market hypothesis, which was just total nonsense, right, you know, at the end of the day, you know, markets are fractal in nature. They are about, you know, processing information and how fast can we process information, and it's that lag time of information that creates these fractal markets. So again, you know, going back to moving from an information hunter gatherer world to an information world where again, all of this context, all of this, you know, all of those dinner tables are gonna be brought to real time is, is just something I don't think we're ready to handle yet in, in many ways.

Josh Crumb (28m 52s):

So, you know, you are about the supply of information and I think you had some great episodes talking to, I forget the gentleman's name, that was, you know led a lot of the technology at Bloomberg we are already starting to deal with narratives in oversupply, right you know, the guest Ben Hunt likes to say, you know, we are just swimming in information. We don't even know that's the water that we, you know, in which we are swimming. So we are already, you know, inundated with narratives and sort of broadcasts to the world one way. So we've got the supply side, but the demand side is actually where I see the biggest problems, right? It's how do we filter, how do we know, you know, what's manipulated, you know, how we're being manipulated. And this is becoming a, a real challenge, you know, in many ways we are seeing people almost disconnecting, you know, becoming untethered from reality in some ways because we just cannot process the oversupply.

Josh Crumb (29m 39s):

You know, we, we see these rise in conspiracy theories, we see these breakdowns in trust. So absolutely this is all connected in the supply and demand for narratives and information. So, yeah. So that, that's why we are thinking about moving away from this hunter gatherer society and having better tools to process this at the individual level. You know, not just, you know, if you're a, a big high frequency shop and how you can process it, but how is the individual be able to process all of these things. So yeah, maybe got a little bit meta there, but these are the things that we are we need to try to grapple with and as we have been saying before, all of these things are linked when we're talking about smarter markets. Yeah.

David Greely (30m 15s):

And I love the episode we had with our colleague, Carrie Jake with on where she talked about, you know, moving to a world where the data has an identity in a world where you are swamped and oversupply and you can't tell what's true, and we are all seeing it now. You go online, you see a picture, you can't believe your own eyes as to whether the picture's real or doctored or what have you. How are you thinking about being able to change the nature of how we think about identity and having identity for individual data, not just individual people?

Josh Crumb (30m 49s):

Yeah, I think that's where the parallels come from and, and the technology we are building. You know, I am a mining engineer, I am a qualified to move dirt. What I am trying to do is bring the systems thinking of what are the things that have worked, and again, in highly regulated, and by the way, highly decentralized systems, right. I would argue that our financial system, despite, you know, some obviously, you know, very large oligopolistic players in certain fields our financial system in general is actually quite well robust and decentralized, and we have dealt with a lot of these problems of bringing, you know, information and people and individuals to market in a very structured, methodical way from the outside in but I would say our big, you know, technology companies are highly, highly centralized and these models are going to make that even worse. All I am trying to do is apply things that have worked and sort of decentralized and distributed systems of finance and try to bring that to the world of information.

Josh Crumb (31m 41s):

When we think about ID ++ absolutely we are thinking about trying to track and trace the provenance of the very beginning of a supply chain and say, you know, Robert Friedland's Copper, but we are also thinking about can we take that same, those same systems of information supply chains and apply that to data, right you know, right now we, we have no idea where the content authenticity, you know, starts, you know, where does that supply chain start and you know, as Michelle Dennedy has said on the podcast, we are swimming not in data lakes, but you know, data sewers in in many ways because the bad stuff is polluting the good stuff. We don't have the filters, we don't have the refining right now. I think that's another way to look at it. We have all this raw, raw information potential, think about it like a, you know, a crude oil deposit, but we need to extract that data.

Josh Crumb (32m 27s):

We need to refine it, we need to, you know, make it safe, you know, to be used as jet fuel and, and the LLMs, that's the sort of the lowest entropy crack of the barrel, right. That's what we need to do with information. So again, all I am doing is applying what we have done in other systems to thinking about how we do this in information systems. And I think that's where ID ++ is so critical is being able to have those verifiable credentials for not only every individual, but how every individual interacts with every organization, how they act with every piece of data. Again, this is a big task and that this is, you know, like Smarter Markets. This is a long-term endeavor. Smarter Markets is not that we know Smarter Markets, but are we are just trying to ask the questions and build the systems so that we can always progress smarter markets and, and ID ++ is, you know what we believe will be a big contribution to that.

David Greely (33m 19s):

The systems thinking, I think is what often gets missed at first blush because you know, even going back to the, the very, even before SmarterMarkets when you were with Eric Townsend, the first host of SmarterMarkets on his Macro Voices podcast, and you talked about the dimensions of Abaxx and the part that was markets, the part that was financial technology, the exchange and clearinghouse ID ++. I think often people would scratch their heads and say, well, these don't seem to be related, but you know, whenever I talk with you, it's very clear how they are all related. It's the same systems thinking, and it's also related because all these things you are doing are about building networks and helping people use existing networks and systems to collaborate in new and more powerful ways. And so I wanted to ask you, getting those networks going is always a big challenge. Like what sets this type of business apart, both in terms of the opportunities once it's built and the challenges in getting it there?

Josh Crumb (34m 16s):

Yeah, well, I think it's the recognition of the interconnectedness and again one of the first themes that Robert Friedland, you know, mentioned on the podcast is, is our interconnectedness, but it's fostering those networks and those communities of asking questions, right. That was the point of, of building the, the podcast. But I think you are gonna start to see in, in years ahead that we are going to take that from just a bringing guests of our ecosystem on to talk about their piece of the system or piece of the infrastructure and we are going to start moving this more into real time being able to query different guests at that dinner table and by the way, not do it sequentially, but do it, you know, everywhere all at once as the transformer model will allow us to do, particularly as we network it and bring it to scale. So yeah, I mean, I think building communities and building networks are foundational to markets you know, for all the reasons we have been discussing. And that's, you know, that's absolutely been one of the, one of the three pillars of Abaxx. Sometimes it gets questioned, you know, why is an exchange building a podcast. Why is an exchange, you know, launching a community it's because you know that my mind, particularly where information technology is headed, is going to be, you know, an essential, if not the essential piece of market building.

David Greely (35m 29s):

And when you kind of look across these dimensions of Abaxx, the exchange and clearinghouse, the financial technology, the Smarter Markets piece, you know, you spent over five years laying these foundations. Where do you see the state of what you are doing to build well, to make the Smarter Markets vision, as you said earlier, to make it a reality. Where do you see the state of that as you get to the end of 2024?

Josh Crumb (35m 55s):

Yeah, well, I would say it in two ways. Like, you know, first, first, again, I think being able to launch a physical commodity delivery clearinghouse, you know, one of the first one in a decade, if not many decades, that was always the first part of the business model right was to get that piece off the ground, which we now have. Now of course, it's going to take some time to build liquidity, build connectivity, you know, I think technologically we are there in intentions of partnerships. But like, you know, like I said, there is a lot of

pieces of the puzzle from having, you know, having the intention to trade to being able to actually do it, you know, technologically and risk systems and compliance systems. You know, Howard Lutnick was just, you know, launched a new exchange as well.

Josh Crumb (36m 37s):

I think he says, you know, one year, one year to build connectivity, one year to build liquidity, you know, and then it's really, you know, year three is really the start of a market and so, so yeah, I mean, we are obviously seeing that, but like you said, the foundations out of the ground. On the other pieces on, on the technology and the community building and the Smarter Markets building, again, I think all of the foundations are there. We are obviously here on our 200th episode sneak peek for those that they will listen to you know, listen to the podcast, but maybe don't follow Abaxx. We are going to be launching an online community with Smarter Markets Coffeehouse, and I think we have got a lot of really cool innovations that you are going to see come through that platform, you know, technologically. So the infrastructure is there, and we have also got the infrastructure of our ID ++ and some revolutionary things that I think we are doing in networking technology particularly to bring information to market at scale.

Josh Crumb (37m 29s):

I think all of the foundation is absolutely there, but you know, this is, this is a long-term build. I like to joke, you know, I had this conversation with the chairman of the CFTC a couple weeks ago, you know, never bet against the, the time horizons of a mining engineer. You know, we you know, the shortest project and mining is 15 years, you know, we have been at this, we built an excellent foundation, I think a unique foundation that probably doesn't exist anywhere else in market infrastructure and I think the next few years, you know, it's about scaling them to the ambitions and blueprint that we have, even if parts of those blueprints are, are still fuzzy and I guess, you know, but again, putting it back into timelines, you know, I think one of the other probably more memorable things that, that I did on this podcast is, you know, put out the call to the 29 ERs, right?

Josh Crumb (38m 12s):

You know, to pick up a shovel and start building, you know, sort of echoing, you know, mark Andreessen and, and the calls from Silicon Valley. And, you know, in, in my mind, again, we went through, through some of those key early points of the podcast, I wouldn't score this well, if I'm honest, you know, where are we at in those sort of 10 key themes and we got a lot of work to do before 2029 and, you know, of course, 2029 was, was referring to, you know, we want to be in a position by then, you know, look, obviously we are not going to take the world to net zero by 2029. That was never the, that never the call, but we wanted to at least have a game plan by 2029 and I think we have moved the ball forward a little bit with, you know, this podcast conversations that, that our guests are having in forums everywhere our community, you know, Robert Friedland, Jeff Curry, you know, Hannah, you know, everybody, right?

Josh Crumb (38m 59s):

But, you know, you know, I, I think the conversations have front run the execution at a global scale. I am still very optimistic, particularly because of information technology and where we are headed the next couple years, that we will have a good roadmap and we will have a good plan by 2029. You know, I think, you know, Robert Friedland made that the comment, if only we had, what did he call it? I don't know. I am never going to be able to do the words of Robert Friedland justice, but, you know, a super all-knowing supercomputer and, you know, and can just ask what's the technology that's going to get us to the energy transition, right, we don't have the technology. I think most guests have been saying that this is the hardest thing yet, because, you know, it's, we don't have a blueprint.

Josh Crumb (39m 38s):

We have to make it up as we go along. But I, I think that information technology piece of it is going to accelerate the next stages way faster than anyone thinks and, you know, I look at younger generations and their familiarity with all of these topics, whether it's, you know, Blockchain or, you know, global markets or chat GBT or, you know, climate change. The younger generations are miles ahead of us, so we just have to keep building the tools to let those generations execute on as well. So you know, that, that's, that's always been the smarter markets, you know, path and journey, and I'm still incredibly optimistic. So if I wanted to score those 10 themes of SmarterMarkets at that episode 200, I don't think we're doing well, but we are gonna win. I think that's the more important part.

David Greely (40m 22s):

And the other thing I have learned from you about mining engineers is that they re able to persist and move forward in the face of a lot of pain and as you said, you know, in construction, the first phase is getting the building out of the ground, laying the foundations and the wisdom amongst construction is once you get out of the ground, it gets easier, the project's more predictable once you get it out of the ground but that getting out of the ground is a lot of work hasn't been predictable, but now you have got Abaxx out of the ground.

What do you think over the, the next year or two will surprise people as they see these businesses emerge and take shape and the commercial dimensions of Abaxx become revealed?

Josh Crumb (41m 04s):

Yeah, I, again, I think just how, how fast the world's going to start moving, particularly on the technology front. I would actually even argue since the LLMs we are seeing, you know, kind of almost different market structure and algorithms and trading, you know, really even since like summer, right. So, so again, it's happening fast in markets but I think it's going to happen even faster in, in some other systems and other ways to analyze research. Again, it's, not just a language model, it's a world translator model, taking a conversation between Einstein and Escher or something like that, right, like, we can do that now with words and, and put all these people at a dinner table and create insights and I think that's, you know, that's the part I am most excited about and that's gonna start moving very fast and that's, you know, that's the most exciting part of this, this journey.

David Greely (41m 53s):

Thanks again to Josh Crumb, Founder and CEO of Abaxx Technologies. We hope you enjoyed this episode. We will be back next week with another episode of Markets in Transition. We hope you will join us.

Announcer (42m 07s):

This episode was brought to you in part by Abaxx Exchange, where trading in centrally cleared, physically deliverable LNG and Carbon futures contracts is now underway. Ready for smarter markets. Contact us at onboarding@abaxx.exchange.

That concludes this week's episode of SmarterMarkets by Abaxx. For episode transcripts and additional episode information, including research, editorial and video content, please visit smartermarkets.media. Please help more people discover the podcast by leaving a review on Apple Podcast, Spotify, YouTube, or your favorite podcast platform. SmarterMarkets is presented for informational and entertainment purposes only. The information presented on SmarterMarkets should not be construed as investment advice. Always consult a licensed investment professional before making investment decisions. The views and opinions expressed on SmarterMarkets are those of the participants and do not necessarily reflect those of the show's hosts or producer. SmarterMarkets, its hosts, guests, employees, and producer, Abaxx Technologies, shall not be held liable for losses resulting from investment decisions based on informational viewpoints presented on SmarterMarkets. Thank you for listening and please join us again next week.