exberry

The End To End
Digital Asset Platform

Webinar hosted by Patrick Young
Exchange Invest - March 2021

In February 2021 Exberry announced a new partnership with Digital Asset and Baymarkets to provide an end-to-end exchange platform combining cutting edge exchange infrastructure with central counterparty clearing functionality. This effort enables new digital asset marketplaces to launch on a fully-compliant platform encompassing registry, custody, trading, matching and clearing services.

Magnus Almqvist
Exberry

Peter Fredriksson
Baymarkets

Eric Saraniecki
Digital Asset

In March, Patrick Young, founder of Exchange Invest, hosted "The End To End Digital Asset Platform" webinar to dig deeper into the implications of this partnership. He was joined by
Magnus Almqvist [Head of Exchange Development at Exberry]
Peter Fredriksson [the Executive Chairman and co-founder of Baymarkets]
Eric Saraniecki [Co-Founder and Head of Product, of Digital Asset]

Exberry was pleased to take part in the discussion about our new technology cooperation to bring state of the art exchange execution, clearing services and settlement to any kind of legal trading venue.

Over the course of an hour we touched upon the strengths of the partners, the proposition and target markets, the future of digital assets, market evolution, growth of exchanges, market forces and regulation, ensuring liquidity, clearing in the digital world, and ended with a look at the next big thing.

One key area we are all thinking about is Will Digital Assets take over the world?

I see it more as a technical evolution. Initially, share certificates were printed papers with big stamps. That moved on to electronic forms stored in computer systems and ledgers. I see smart contracts and the ability to build in so much more logic and checkpoints into the actual financial instrument. So for me the answer is yes, everything will become a digital asset. - ***Magnus Almqvist***

You can find the video ***here*** to see more highlights from the discussion.
We hope you enjoy!

You all come from some interesting organisations. What are your individual strengths and why did you come together?

Magnus Almqvist

Exberry officially launched our matching engine in June 2020. Since then, we've seen an amazing reception in the market, where we've today signed three clients with more to announce soon.
We have technically solved the difficult challenge of deploying a matching engine in the cloud. This enables us to deploy new markets and completely new matching engines in just days. We're agnostic to asset classes, we are easily integrated into any ecosystem and the platform scales well.
Even our tiniest micro markets, meet MTF and ATS type regulatory requirements. Historically, it has been difficult to integrate and adapt a matching engine into an exchange, as world markets are unique in various ways. Our partnership that we're discussing and exploring today creates a digital ecosystem enabling rapid deployment and configuration within an exchange.

It's an exciting time for Exberry as the concept of what a market is, is also rapidly evolving. The creation of the Digital Asset markets helps fuel this evolution or even revolution. And as a consequence, the addressable market for solutions such as this matching engine is just exploding. Our partnership tears down barriers to entry and supports innovation in ways that you just could not even imagine only five years ago.

Peter Fredriksson

I am really excited about this partnership that we created and the work that we do together with Exberry and Digital Asset. At Bay markets, we provide a clearing system up to now for traditional markets, including SIX (the Swiss Exchange). At their Clearing House X- Clear, we process over 430,000 trades per day at the value of about 1.6 billion per day. So it's a well established clearing system.

Back in the fall of 2020, we started looking into what we need to do in the future to be ready for moving us into the Digital Space, and soon I reached out to Exberry and Digital Asset, and together we have formed an End to End Solution for Digital Assets.

Eric Saraniecki

At Digital Asset, we're the creators of DAML, which is a programming platform that helps organizations solve business problems, where their existing data is siloed, or inconsistent and incomplete. And today's massive networks of loosely interconnected systems are just too slow and brittle to give users the live accurate experiences that they demand. Companies building solutions with DAML can cut across data and organizational boundaries connecting physical systems of different stakeholders into one virtual shared system of record. So that allows us to do things like create reconciliation, free systems or real time settlement systems, new clearing and trading models. And we get to work with some of the largest most established exchanges in the world, as well as work with upstarts, small teams, aggressive new opportunities and ideas.

And it's just a lot of fun to help connect the dots between this very classic traditional capital markets world and this cutting edge of new finance and global economic opportunities. So, I'm really excited to be here and talk to you about what we've been able to put together as a trio today.

What do you see as being the value proposition of the end-to-end exchange platform?

Eric Saraniecki

I see two main value props to what we offer. And the first is just the flexibility of the system. So a lot of people, when they go to build an exchange ecosystem they start to do it piecemeal. Then they'll build a lot of infrastructure around it to connect all the parts and that componentry around it is not always necessarily a first class citizen of that solution. But because the three of us are working together and we've built all of our platforms to be very modern-oriented systems and products, we're able to build one coherent single product even though it's built across a number of different solutions.

So we can create arbitrary assets on the fly, we can create arbitrary pairs on the fly, we can create baskets versus pairs, we can trade these things we can on board ambassadors, it's just much more of a composable modern system that people are more accustomed to from their traditional B2C experiences that they have today.

And the other ultimately, you know, I hate to talk about price. But it has a lot to do with price. I don't mean this specifically just in dollars and cents, but time to market. I can launch a complete solution in less than 15 minutes today and you could be off and running. Modification takes weeks to months at best to complete what you need to make it your own and get it up and running. So it's really about taking something very modern, very unique and bringing it to market faster than anything else on the market.

Magnus Almqvist

For Exberry it's quite simple and straightforward, we are focused on the matching element, which means we maintain a central order book, we receive orders, we process those and when there is a cross in the order book, we produce a trade. What's so great about this partnership and what Eric explained is this whole flexibility and this whole ability to just create any pair and create very dynamic market structures where Exberry is so well embedded.

This is back to the kind of scenario I talked about previously that historically, that's been really complicated because you need to go into nitty-gritty details and change code and create common and almost new matching engines. But here we don't need to, because we sit so well with DAML, and that framework and ability to create what you want to trade. That means are truly agnostic, you see the orders, we process those while meeting MTF, ETS type requirements when it comes to the trades and deterministic capability and keeping the markets orderly.

Peter Fredriksson

We came in as the last piece of the puzzle, you can say, and we provide the clearing piece. So we handle the risk management and the handling of collateral and mark to market valuations. And as an example of how easy it is to actually launch this product is that we started working together at the end of October or early November and we had a working prototype in December. It is very easy to set up a new marketplace, get all the pieces together and launch, either for the traditional market or for a digital market.

Who is this for? What's the target market?

Eric Saraniecki

What we've traditionally considered to be an exchange, is changing dramatically. So you know if you want to trade a regulated security, that space is pretty well taken care of today. But there's a whole ecosystem of new types of applications and asset classes where price discovery just hasn't hit the market yet. And so when I think markets, I think price discovery.

The simplest way for me to explain this is if you go to StubHub, SeatGeek or Airbnb as a consumer I could see that there is inventory availability and the price at which I can purchase it. But I don't know the historical prices, I can't place a bid and there are roundabout ways to do it but it's not built into the experience.

There's a company called StockEX: it's kind of my North Star for a really good B2C market experience.
They trade collectibles, like sneakers and other things and you can go and see what Nike Air Jordan has done over the past two years, is size 12 more popular than size eight? I think that this experience especially with the re-education of the retail investor, with the crypto markets, and a lot of the activity in the equities markets. This concept of price discovery is becoming the norm. And that we'll see proliferate into a number of things that you wouldn't have traditionally considered an exchange.

So for us, when we set out to build this, we wanted to think about what it would mean for there to be thousands or tens of thousands of exchanges in the world? How are those constraints different?
How are the assets different? How do these things need to operate together? What are the experiences that they're solving for? And I think that was just a really fun experience to take everything that the three of us know from traditional capital markets and think about how to apply that to more retail B2C type situations. And our solution works for both, we can launch it at a major top 10 exchange for traditional asset class, we can help you list sneakers, and create a whole new marketplace for it. And that was really our guiding principle when we sat down to build something like this.

Magnus Almqvist

The creativity and experimentation that we see right now is unprecedented. It's something that I have never seen in the last 20 years. This concept of what the market actually is rapidly evolving and the target market is really wide. We're talking to traditional type market marketplaces where they are looking to trade sort of bond-like structures, equity-like structures and financial instruments comprising funds.

But we're also seeing very exotic, completely new types of investment models and investment ideas popping up. Investing in content producers for example, the various ways in which you can do that is one great example. I feel really privileged and it's so much fun to talk to all of these different entrepreneurs with all these really bright ideas that are popping up. We can support them with this enormous platform, where we actually can configure and build the ecosystem in just a couple of days and start showcasing and talking about it. It’s just amazing.

Peter Fredriksson

I think if we talk about not just our potential clients that we have in the group, but also their value proposition to their clients, one part that Baymarket is bringing to the table is trust. That you can trust the marketplace to handle the counterparty risk, which I think is really important and to bring on liquidity, to bring on sort of both institutional investors and or larger volumes.

It's essential to have the trust and to be able to calculate and handle the counterparty risk. And I would say, you don't have to be a regulated clearing house to actually do this. You can handle the margining, the collateral, settlement and everything without being a regulated entity even though that even brings more trust. So just looking at the potential clients that we're talking to, I think they will see a lot of value in what we bring to the table

Will Digital Assets take over the world?

Peter Fredriksson

Slowly, maybe. But traditional markets will always be there. And this is just a start where we will see a movement. We will see a movement from traditional T+2 settled markets, I think more and instant markets where you don't need to have the long settlement cycles and you don't need to have all the capital required and so on.

Eric Saraniecki

I think it's a really interesting question. I'll rephrase it a little bit to say that? I think that we're seeing an interesting inflection away from more fundamental base trading into more sentiment based trading. And so I don't know if Digital Asset is the right vehicle per say. But the ability to round up your purchase on your favourite product on the day into an investment or some exposure to the success of that product or that brand. Or being able to participate in some financial upside of some activity that you do frequently or your favourite singer. These types of more sentiment based investment and participation in the markets are going to push a whole new wave of types of assets.

It's tough for me to call some of those things that are Digital Assets, it's not clear to me what you own. And I think that there's a really fun discussion going on right now about stuff like these non-fungible tokens and top shots and all sorts of really abstract markets. I'm not sure you own an asset there, it's not entirely clear to me what you have invested in, it doesn't mean you shouldn't buy it, or that you can't make money off of it. I'm not saying that one way or the other, but just that this is becoming a very abstract concept.

I see it more as part of just this general wave of financialization and access to markets and being able to put your money to work. I would say, maybe not Digital Assets but definitely the passive low velocity highly illiquid assets are less in favour than that and people are finding ways to bring those online and to find ways to access some of that stored liquidity or stored equity that they might have in some other traditional assets. I do believe that it has a legitimate place in the investment realm.

Magnus Almqvist

I have a slightly different view on that, I see it more as a kind of a normal technical evolution. Initially, share certificates were printed papers with big stamps and you have these bonds that had these little things that looked like a stamp, you put on a letter and that was the coupon and so on. That moved then on to sort of electronic forms where it's stored in computer systems actually ledgers and I see smart contracts and the ability to build in so much more logic and checkpoints into the actual financial instrument and I see that as a normal technical evolution.

So for me the answer is yes, everything will become a digital Asset. But maybe not in that kind of revolutionary way that people imagine it. But in the future when you trade a share it will be stored on a smart contract.

It seems there are elements of revolution in one sense but also evolution. How do you therefore manage to move that marketplace forward? Have you managed to bring it more into the mainstream?

Magnus Almqvist

Absolutely. Well this is why it's so exciting to be us three right now, because my prediction is that every single stock exchange over the next five years, they will run a PoC looking at a platform that is enabled into managing Digital Assets in some capacity. They have a choice, they can do changes and adapt into the existing tech stack or they can run a parallel stream with a flexible, fast deployed and more cost efficient solution like ours.

And indeed, we are already seeing those kinds of interests, those kinds of ‘feelers' heading our way.
As always, when new technologies mature, there will be some sort of a bell curve of IT related projects.

Peter Fredriksson

I think we are complimentary to the traditional markets. And like Magnus says, we will have a gradual movement over to making it more digital, and maybe the endgame is complete digital assets. To your question about what clearing can bring, clearing brings trust clearing handles counterparty risk, that's what it's all about.

And whenever there's a time factor, for instance with derivatives, you need to calculate the margining. And you have to handle the collateral that covers the margin and so on. And it's just one extremely important piece that needs to be part of any successful marketplace.

Eric Saraniecki

I mean, they are right, we get to work with some of the most innovative, but also largest institutions in the world. Digital Assets are working with the Australian Securities Exchange, we're bringing the entire continent of Australia's stocks into these markets, not the way people are thinking about them in DeFi but these are coming online in DAML on a blockchain.

These types of users are at the cutting edge, it's surprising to see, but it makes sense when you realize that 20 or 30 years ago. These companies made cutting edge decisions to dematerialize or build these new types of clearing and settlement systems that were cutting edge at the time compared to the status quo.
And it established ‘edge' for them and established a position and established a purpose for them in these markets as they grew. And they drove a lot of the innovation through the space and that back office system. That clearing and settlement system has been the platform that has driven this huge trading and financialization. And all that is possible thanks to those things.

So yes, they are starting to become quite antiquated. And we see where they're falling short, with the new, more B2C retail focused markets. And that's not really what they were built for back in the day. So they have been designed under previous constraints.
But the same institutions were the ones that were cutting edge before, and they're going to continue to be dynamic going forward. It also doesn't hurt that we have a bunch of new entrants into the market space.

I mean, if anyone read the Coinbase S-1, it's quite amazing where they're being valued. Again, not for me to say if it's appropriate or inappropriate, but they're instantly rocketed into one of the largest exchange groups in the world. And that started very much as a niche site market.
So it's both, I won't say direct competition from upstarts in new markets. But definitely the
threat of it, combined with a lot of these institutions, remembering that they are effectively cutting edge, or at least were when they started a lot of this and remembering that as they decide what they're going to do for the next 10, 20 or 30 years.

Why do we need clearing in digital asset trading when there's instant settlement?

Peter Fredriksson

Even when you have cash products, you do run into time risk. If you have nothing, either periodically, during the day or at the end of the day, you have counterparty risk during that time.

Another interesting aspect is that if you let me take a metaphor, if you look at tokens as being the tokens when you go into casino, when you go to one casino and trade one thing, and then you try to move those tokens out of the casino and go to the next casino, they're not fungible. That's one thing that the clearing house can also take care of to take in and collateralize the tokens.
So you can go to the next casino, the next marketplace. And that was on the cash side. And then we should talk about derivatives. Like I said before, you always have time risk when you talk about derivatives. And during that contract length, you need to calculate the daily margins and handle the collateral that covers the margin.

Eric Saraniecki

Well, I'm a little bit disappointed by the way that this conversation is being had in the public sphere, because it's very much being asked from a single point of view into the market. And what I mean by that is that you have a diverse group of actors in the marketplace, and roughly along a spectrum.
So if you pick a retail investor, who's typically fully collateralized or fully margined at the broker dealer level, they're paying all the costs of the T+2 settlement system and getting zero of the benefit. On the complete opposite end of the spectrum, if you have a liquidity provider, or a market maker, or anyone else that has that kind of general activity in the market, then they never want to sell, they would go for T-10,000. They'd love to be purely margin and mark to market on a daily basis, it would just allow them to provide a lot more liquidity and a lot more economical position. The only problem with this entire conversation in my mind is not T-instant, T-1, T-2, T-5, T-10. It is how you satisfy a diverse set of personas within the same order book. And that's something that I wish we would have more of a conversation about.

And that's something that we will be able to provide in this solution is things like blended fully collateralized real time settlement books with cleared participants, where you could have some settling on a net basis on a delay, other settling instantaneously on one match and having one single order book with so without bifurcating liquidity. And I think that, that level of creativity and that level of empathy of recognizing that there are more and more diverse personas in the market today than there were 20 or 30 years ago when we designed this system. And it's more than just trading. I think that there's a failing on the trading side of this. But also I don't understand why we have such a prolific street name omnibus structures, those exacerbate these margin issues as well.
So I really wish that we could have a more creative conversation about what it would mean to design a system under the new requirements that we understand today, as opposed to the purely wholesale B2B type markets that we designed for 20 or 30 years ago.

As Peter has mentioned, clearing is not just the process of delaying the settlement, clearing is the process of managing the risk throughout a process. And so you know, in our collective solution, we have a lot of customers that are looking at derivatives.
Anything with a regular cash management component to it, a derivatives component, any delay, any netting, all of that requires being smart about how you manage the counterparty capital requirements. That's something that we've also been able to build in this system that I think is quite innovative is just dynamic, real time, party by party level, real time margining and mark to market calculations that you can also instantaneously settle, transact, margin.

Everyone thinks about stuff at a system level. But when you work with someone like a Baymarkets or someone like an Exberry, then we can get very granular and we could build much more dynamism into the overall system than what you're thinking about today, where you build just kind of one set of standards that applies to everybody. Similar to what I was describing before, we need to think about this in smaller pieces than just this is a T+2 settlement market.

How many exchanges can we expect to see being built?

Magnus Almqvist

It's a great question. It's easily hundreds and it might even be thousands. As Eric commented, the B2C and B2B markets that are all evolving and rapidly changing. People are now maturing and expecting proper price discovery, they don't accept to just take prices. So that just means that the number of exchanges, the number of marketplaces that actually need proper price discovery, and as a clear follow on also need some kind of clearing, because when many of these products will evolve into derivative type products, it will just explode, so yeah, maybe this is nonsense.

Peter Fredriksson

Well, the traditional exchanges are becoming fewer and fewer. They are all in a sort of a merger race. And they are all buying each other. I think we've seen this in many other industries, too, that when you get too much sort of focus or too many large players, new ones spring up. And with the new technology, you can actually launch an exchange in a very short time, and with much, much less money than you used to need. So the number is very hard to say, but I agree with Magnus, that potential is there.

Eric Saraniecki

I would just say that I'd like to restructure, again, what we think about a market is not one single venue, everyone comes together, and they kind of spend their entirety of their day kind of nickel and dime prices to get into something that they want, but more just price discovery, and I'd like to see that echo its way, or work its way into just about every B2C application where there is some transaction taking place. We're also not even talking about the potential of things like just data.
There's so much data being accrued in this world and no one's thinking about how to transact and share with each other. How do I purchase subsets of it, utilize it, give it back, or like use it for a specific purpose?

We always think about stuff in such grandiose traditional market ways, I'm looking at something, I invest my money, I own something it has dividends, I call it a day, maybe I bet on it with some leverage. And instead, we should think about it more of what is the cost to use something for some period of time? Why can't I bid on an Uber ride? I don't understand that, like, I have a destination I want to go to why can't I just show a bid that says, I'd be interested in paying this much money for it.

So I would like to see the experience in any sort of transaction to become more market oriented, and less price-taker oriented, like we see in a lot of the experiences. So it could be tens of thousands, if not more.
What will lead market improvement now? Is it going to be market forces or regulation? Or both?

Peter Fredriksson

Well, I certainly hope its market forces and not regulation. I think what we've seen with MIFID had a lot of good intentions, but didn't really turn out the way it should, at least in many areas. I definitely think that the free market will and technology enables innovation, and it also enables new marketplaces to spring out. If anything, I think regulation will probably hold back some of these market forces.

Magnus Almqvist

I think it's a great question. It certainly will be both that regulation does play a role. The Market Abuse Directive is really important and has forced behavioural changes in electronic markets. And I see that continuing to play a vital role, I do say that regulation is important. Now, I'm also seeing really positive signs around the globe, where regulators are actually opening up to and helping innovation when it comes to allowing for innovation in markets and breaking down existing structures and allowing new technology and new concepts to enter the arena as recognized investment structures.

So, it's a bit of both. But the underlying force, I really do think must be from the market forces, it needs to come from them. I think also Oslo Bors is actually a great example of it, they had this way back in when electronic trading was new. They had problems with liquidity in the markets because people were scared of entering it because they were spoofed, and they were maneuvered into markets and then traded at a disadvantage. And they brought in a surveillance system; they started monitoring trading. And managed to clean up the market and liquidity improved, and people entered the market. So, people want to be able to trust the market. So, market forces are an important factor.

Eric Saraniecki

I think that the last point that Magnus was just making is probably a really good one. And here again, we have a decent case study and if you look at roughly the last decade of the crypto markets, how they've evolved. I've been lucky enough to participate in that market long enough to have traded penny prices in Bitcoins on flash crashes in the early days and successfully managed to not lose money at Mt. Gox. And all sorts of different things along those lines. And what has started to drive the transformation in this market is the trustworthiness that comes with it.

Now it's a combination of a little bit of both, right, we saw a lot of pushes for licensing and there was pushback in some instances, others have embraced it. I think the ones who have embraced it in good faith and have done the best that they can to leverage some of the regulations that have come in, have helped to establish trust. But that goes hand in hand with the technological requirements to build the experience that the customer really wants.

So, I think that a big part of the success of the crypto markets over the better part of the last 18 or 24 months, has a lot to do with the regulation that it was relatively light where it was introduced and brought out but just you know, the industry helping to get it to a place where it was additive to the trust, to the consumer, while simultaneously building really nice trading experiences
for the investor. And so, I think it's a little bit of both.

If there are hundreds or thousands of exchanges, how do we ensure liquidity?

Eric Saraniecki

I am old enough and lucky enough to have had the distinct luxury of trading on the floor, I spent some time at the CME in the Treasury options pits and then at NYMEX in natural gas options and futures rings. The local was really a mainstay back in the early days of those rings. And when we're talking about hundreds or thousands of exchanges, I don't mean they have the same assets. I don't think that you're going to have ICE list Uber rides and have to figure out how you're going to source liquidity for Uber on ICE. You're really going to have cottage locals that are really participating, they know the market, they know the value, they know that asset class, they know the behaviours of the consumers there.

And again, with just the explosion of all the analytics going into the space, whether it's ML AI, all of the systems of intelligence that are getting integrated into these data platforms, there will be no shortage of insight and activity and reasons to participate in this market. From more about a local, old school local style of participation.

Peter Fredriksson

The question is great, because this is the $100 million question. How do you bring liquidity onto the platform and just to go back a little bit, I ran something called C-Screen, which was a start-up back in the early part of this century. And it's an OTC trading platform for equity derivatives. And there I just saw with my own eyes how you know when the turning point is when you actually get the liquidity enough to explode and make a marketplace. In our experience then, when we reached more than 50 users on the platform and they pushed prices - it was an inter-dealer broker platform.

And so, when we reached that magic number it has sort of grown by itself, so you need to get over that sort of threshold. And what this does to clearing is that, obviously, you can handle clearing, you know, in a marketplace that doesn't take off you can handle that in an Excel sheet almost. So, whenever you get enough liquidity you also get the need for clearing and do the mark to market, do the margining, do the calculations and handle substantial volumes. When you do have institutional investors, you have the volumes in there, and you only get that if you have clearing on board. So again, it comes back to trust.

Magnus Almqvist

I think we touched on it earlier. The fact that global and local is now kind of the same thing works. It's about finding that audience that is passionate about what it is that you're making available for trading. And then you will find these locals who will help make markets. But, as you pointed out, they can be anywhere on the globe. So, your audience is so much bigger right now. And that is just growing and growing. So, they can have a liquidity pool or the potential to participants is so much bigger.

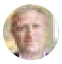
What do you think is the next big thing? Or do we know?

Magnus Almqvist

We just don't know what the next big new thing is. And from all these different prospects that I'm talking to on a daily basis, that the creativity is just exploding. And it's so exciting to see what's popping up. I mean, recently read about articles. You trade, eight-bit cats with it with a muffin on top. Why not? We'll see.

Peter Fredriksson

I think the next big thing is actually what we do today, but in a different way. I mean, there will be new asset classes, there will be new products traded, like Eric brought up we could probably trade Uber rides. But we are already in the financial markets so you know, mature. So, I think what we'll see as the next step is them moving on to the digital environment and digitizing the products.



Eric Saraniecki

I'm blown away every day with the creativity of the people who speak to us and want to leverage what we've built to help them make their dream a reality. There are so many specific areas that would be improved from just better transparency over the supply chain or how things are added to a process and just those types of use cases I get so excited every time they come across us and I hope that all of them succeed and I'll do everything that I can with our company to try to help that.

And on the flipside, I also think that there are some vulnerable incumbents and there are some well capitalized, new companies coming into this space, not just capitalized, but also with the appropriate licenses to make a move. And I think that the future holds for us. Some interesting competition, some very different style of competition over the incumbents. At the heart of these capital markets, we might finally get a real FinTech space.

Right now, we kind of just have "paymentech" we don't really have much that I would call truly like capital markets - deep in the heart of how the capital world really behaves. So, I think that we'll see some of these more successful upstart exchanges and groups come in and start to come after some of the common experiences, as well as the new product types coming to market.